The Third International Congress on Curriculum and Instruction:

Curriculum Studies in Higher Education

Proceeding Book

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PREFACE

Dear Participants,

We are pleased and honored to host you in the Third International Congress on Curriculum and Instruction organized jointly by Turkish Association of Curriculum and Instruction and Çukurova University. We would like to welcome you, all.

Curriculum Studies is a distinctive field of research in the area of educational sciences. It was the first subdivision of the American Educational Research Association, known as Division B. Curriculum studies is focused mainly to understand curricula as an active force of human educational experience. Curriculum researchers investigate the following spesific questions mostly; what does it mean to be an educated person?, what should be taught in schools?, why should it be taught? , to whom should it be taught?, how should be taught?, how should be evaluated what we taught? Proponents of curriculum studies also investigate the relationship between curriculum theory and educational practice and the relationship between school curricula and the contours of the society and culture in which schools are located. Curriculum Studies involves multiple disciplines, perspectives, and orientations, including post-structuralism, narrative inquiry, multicultural education, cultural studies, and critical theory

Curriculum Studies emerged as a field in the late 1960s and early 1970s from educationists focused on curriculum development. In the later years, a shift from developing and evaluating curriculum to understanding curriculum ocurred known as the "Reconceptualization" of the curriculum field.

Although Curriculum Studies involve all level of curiculum from preshool to higher education, Bologna Proces has made studies in higher education curricula more important especially in Europe. That's why the main theme of the The Third International Congress on Curriculum and Instruction was determined as *Curriculum Studies in Higher Education*.

The Congress aimed to facilitate the exchange of expertise, experience, and studies with colleagues from all over the world. There will be 350 papers and 430 participants from 11 different conutries in the congress. Full papers of the ICCI-2015 will be published in an online proceeding book. In addition, some selected papers will be published in as an e-book after evaluated by a scientific committee. The authors who wish to publish their papers in a refereed journal may submit their papers to International Journal of Curriculum and Instructional Studies, Pegem Journal of Education and Instruction and Çukurova University Faculty of Education Journal. The papers will be published after peer reviewing process.

Many people and institutions have contributed efforts for organization of the congress. First of all, we would like to thank to Prof. Dr. Mustafa KİBAR, Rector of Çukurova University and Prof. Dr. Turan AKBAŞ, Dean of Faculty of Education for thier valuable support and contributions. Furthermore, we appreciate devoted and labor intensive efforts of congress secretariat and organizing committee. In addition, we thank to our sponsors for their contributions. Finally, we express our gratitude to dear participants. Without your support and contributions the congress has not been taken place.

Sincerely,

Prof. Dr. Özcan DEMİREL
Co-Chairman of the Congress

Prof. Dr. Ahmet DOĞANAY
Chairman of the Organizing Committee

Changing higher education: challenges for curriculum and instruction

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Introduction

Due to the rapid and revolutionary changes and developments in all aspects of human life, individuals have always been in need of improving themselves in terms of varying skills. Within this context, it can be said that 21st century requires individuals to be qualified professionals, and be knowledgeable and creative, think critically, solve problems effectively, be respectful to different cultures, and have different viewpoints, etc., owing to the challenges of globalization and advancements in science, knowledge, society, technology, economy, and many other fields of human life. About a hundred years ago, inevitability of change in education was emphasized by John Dewey as "If we teach today as we taught yesterday we rob our children of tomorrow". So, in the age of information and global competition, change is inevitable, and the rate of change in higher education is accelerating. Thus, it is crucial to educate individuals in a way that help them to be qualified professionals of today and tomorrow. "But how?"

In order to cope with the developments and the changes we are living today, we should consider people, process and technology together. The big changes ahead for higher education can be grouped as: changing employer needs, changes in students, developing technology, changes in pedagogy, and changes in teaching models of higher education (Casares, Dickson, Hannigan, Hinton, & Phelps, 2012).

1. Changing employer needs: As the types of jobs are changing, employers find today's four year university/college graduates deficient in some skills like, "professionalism/work ethics, oral and written communication, teamwork/collaboration, and critical thinking/problem solving" (Casares et al., 2012, p. 3). Besides, employers today look for competency in skills like; leadership, creativity, innovation, information technology applications, self-direction/lifelong learning, social responsibility and diversity (Casares et al., 2012).

2. Changes in students: Today's higher education generation called y-generation or net generation have some unique characteristics: They have less experience reading traditional printed texts but have more experience watching TV, playing video games and online games. They spend more time in chat rooms, learn by hands-on methods, seek social interaction online, rely heavily on computer technology and electronic tools like, smartphones, ipads and expect them to be part of their learning. So todays' youth expect to be able to learn and study whenever and wherever they want to. They want to design their own curriculum and find ways to learn in their own style.

3. Developing technology: Today's technology has changed both the ways content is reached and delivered. There is abundant quality content on the web and students have access to this content more than ever before. Digital textbook sales are increasing. The instructor teaching in the classroom is no more the primary source providing scholarly experience. Besides, the content is not bound by cost, location or time. Mobile devices having internet connection is changing the whole educational process. Thus, how education is delivered is also changing. Blended and online learning is gaining more attention (blogs, Learning Management Platforms like MOOCS, Coursera, etc.). Competency based learning either in face to face or online and adaptive learning platforms are gaining more attention.

4. Changes in pedagogy: Today's conception of education has been shaped by such trends and perceptions as constructivism involving issues like student centered education, developing

student autonomy and creativity, developing higher order and critical thinking skills, encouraging interactive learning in groups and teams, developing problem solving skills, effective use of time, development of self-concept and encouraging self-evaluation; and multidisciplinary approach, flexible and rich curricula, involving students' needs and profiles, information and communication technologies, ethics, life-long learning, accreditation/quality assessment, entrepreneurship, and process evaluation. The impacts of these trends are also reflected in the four main themes in education, namely knowledge, student, teacher, and curriculum. The following table compares the past and today's conceptions of four main themes in education.

Table 1

Comparison of the Past and Today's Conceptions of Four Main Themes in Education

Themes	**Past**	**Today**
Knowledge	Give and Take Approach	Learning how to think
Student	Receiver	Active participant
Teacher	Knowledge transmitter	Facilitator
Curriculum	Single-subject design - More is more	Multidisciplinary approach - Less is more

Although learner-centered paradigm was not new to the educational scientists, it has been popular and dominant at schools in the last 20 years. According to learner centered paradigm, knowledge is constructed, discovered, transformed and extended by students; students actively construct their own knowledge; learning is a social enterprise in which students need to interact with the professor and each other; education is a personal transaction among students and between the faculty and students as they work together (Johnson, Johnson, & Smith, 1998, p. 9-12).

Contrary to the one-size-fits-all curriculum approach, learner-centered paradigm puts great emphasis on learning how to learn and think as well as on the ways in which students can improve their learning under the guidance of their instructors. In such an active learning environment, knowledge and skills are meaningfully learned, long lasting, and flexibly used in different situations or domains.

5. Changes in Teaching Models of Higher Education: Today's students vary on their educational backgrounds, social backgrounds, lifestyles, life stages, and forms of engagement. Universities vary in curriculum organization, organization of staff, organization of students, organization of space, and reputation and tradition. Finally, the outcomes, in other words what the students learn in higher education institutions, vary as subject knowledge and competences, generic competences, social capital, and confidence and identity varies. Considering these diversities, it is stated that universities are required to meet these very different needs.

Several forces are affecting higher education today, among these are economic, demographic, ideological forces and more importantly the shift in the consumption of higher education by students. Besides, other challenges are facing 21st: century universities at local, regional and global levels. "Mass migration, environmental and geographical issues, super-diversity of student cohorts, the information overload, global interconnectedness" (Welikala, 2011, p.4) are some examples. Since higher education is under revolution today, higher education institutions need to be more nimble, entrepreneurial, student-focused and

accountable for what students learn. Some of the innovations in today's higher education may be listed as: e-advising, evidence based pedagogy (more social learning, more active learning, more real world assessments), more collaborative teaching approach, optimized class time, fewer large lecture classes, e-learning, personalized adaptive learning, increased competency-based and prior-learning credits, data-driven instruction, faculty peer review, international education, learning communities, student peer teaching, undergraduate research, more certificates and badges, free and open textbooks, public-private partnerships (Mintz, 2013). Whether these innovations will be successful or not, time will show us.

Henard and Roseveare (2012) assert that the new teaching and learning paradigms in higher education require:

> (a) new relationships regarding access to teachers, and a wider range of communication and collaborative working through learning platforms, (b) re-designing of curricula, (c) bridging teaching and research more intensively, (d) re-thinking of student workload and teaching load, (e) continuous upgrading in pedagogy, use of technologies, assessment models aligned with student-centered learning, (f) creating of innovative learning platforms, (g) providing guidance and tutoring to students with new means and methods, (h) assessing impacts and documenting effectiveness of the teaching delivered. (p. 9)

Similarly, Hannan (2001) emphasizes the importance of lifelong learning - enabling and widening participation in higher education regardless of age or status- in professionals' lives and lists the demands of lifelong learning on higher education as changing the content of the curriculum; changing the methods of teaching where methods of relevance to the outside world (problem-based learning, work-based learning, employment placements, practical projects, skills that enhance employability, etc.) are used; preparing graduates for the continuation of their learning in both formal and non-formal contexts (developing independent learners who have learnt 'how to learn'); making higher education more flexible to allow for learners to study at various stages in their lives to update their skills and knowledge, which suggests the packaging of parts of programs through modularization, some system of credit accumulation and transfer, the provision of part-time modes and enabling students to learn at a distance (making use of new technologies as appropriate) (p. 3).

Apart from how you define curriculum (e.g., objectives, contents, learning experiences), there is no doubt that curriculum is crucial in reaching the general and specific aims of a higher education institution and meeting the needs and demands of the individuals and societies, however little attention has been given to its review and transformation in higher education institutions (Oliver & Hyun, 2011). McNeil (2006) asserts that the curriculum is one of the powerful vehicles which make great impact not only on students but also society as a whole. Walker (2003) explained the vital importance of curriculum work as "…the curriculum affects what teachers teach and thus what students learn, and in so doing it helps to shape our identity and our future" (p.5). We also know that as the heart and soul of all educational institutions, curriculum provides quality assurance at higher education. There have been many interpretations about "curriculum" (Oliva, 2001; Posner, 1995), but in a simple form, a curriculum is a planned set of learning experiences which has four major components, namely objectives, content, instruction, and evaluation. These main elements of curriculum are in constant interaction. Walker (2003) asserted that "a curriculum is a particular way of ordering content and purposes for teaching and learning in schools" (p.11). But with the new concept of "Do it yourself college", students will be expected to develop their own degree plans and curriculum. While developing curriculum all institutions of higher education should consider: environmental variables surrounding the institution, pedagogical strategies to be used to

implement the learning and teaching activities envisaged in the curriculum, graduate competencies to be developed, educational institution leadership that is required (Khan & Law, 2015). This brings the issue of multi-perspective curriculum into practice. Multi-perspective curriculum requires:

a) continuous exposure of students and staff to multiple views of the world (create different socio-cultural/educational societies, promote interdisciplinary activities, harness experiences of all the students in teaching and learning, value alternative world views, use comparative approaches to teaching),

b) encouragement of reflexive learning and teaching (reflexive dialogue, keeping reflexive diaries, reflexive teaching/learning logs) so that students can constantly and critically reshape their approaches and views about learning and teaching;

c) seeking to create a culture that makes students and staff feel that the university is a democratic meeting place where the encounter of diversity (in terms of gender, maturity, culture, nationality) creates opportunities to develop new competencies, knowledge and understandings.,

d) increasing opportunities for collaborative learning (communities of practice, group work, workshops, seminars) which exploit the diversity within the student body (Welikala, 2011, p. 5).

The challenges encountered by curriculum developers are generally classified into three types, global challenges (external), local or internal challenges of the education systems, and institutional challenges.

With regard to the external challenges, Ralkoofi's Blog (2015) emphasizes eight critical processes that curriculum planners should response: "the process of globalization, accelerated pace of scientific and technological progress, radical transformation in the work field, increasing social inequalities, progress of democracy and human rights, multi-culturalism, the feeling of insecurity, and moral decline".

With regard to institutional challenges, when higher education institutions attempt to make comprehensive curriculum reform, they face with some challenges like time and cooperation. Time is a major constraint where adequate stakeholder participation in the review process is time consuming. Another challenge is cooperation of all stakeholders and decision makers in and outside the institution.

Sajjad (2010) states that "teaching and learning are the two sides of a coin" (p. 29), and Angelo and Cross (1993) emphasize the importance of learning in teaching by "teaching without learning is just talking" (p. 3). Therefore, for a curriculum to achieve its objectives, i.e. to be successful, during instruction, we need "learning students" and "effective instructors". Teaching and learning in higher education have experienced several innovative practices usually based on technological developments. The major purpose of these innovations are to improve learning outcomes, increase student engagement rates, diversify choice of subjects and increase flexibility in terms of delivery (time and place).

Teaching is another important concept in effectiveness of the higher education institutions since success of teaching depends on what faculty think about "what the teaching is" (Biggs & Tang, 2007). Trigwell and Prosser (1993, as cited in Trigwell & Prosser, 1996) identified five different approaches towards teaching among the staff teaching first-year courses in chemistry and physics. These approaches were identified based on the strategies that teachers adopt in their teaching and the underlying intention.

Approach A: Teacher-centered approach with the intention of information transmission from teacher to student.

Approach B: Teacher-centered approach with the intention of students' concept acquisition.

Approach C: The approach focusing on teacher/student interaction with the intention of students' concept acquisition.

Approach D: Student-centered approach with the intention of conceptual development in students.

Approach E: Student-centered approach with the intention of conceptual change in students.

Today, still, in majority of higher education institutions, especially at undergraduate level Approach A is being used.

Faculty also need to reconsider their roles and re-examine which content to include in order to help students learn essential concepts and skills. They can do so by asking themselves the three big questions:

1. What aspects of my subject must my students learn in this course?
2. What attitudes/approaches/processes are critical for success in this field?
3. What lifelong learning habits must students develop to be successful in this field? (Bart, 2010)

We all know that the higher education will use more online learning, more technology, more community involvement, and more flexible learning environments which will also change attendance rules. Some examples of recent practices at higher education are:

1. MOOCS - Massive Open Online Courses
2. Carnegie Mellon Open Learning Initiative- free of charge web based courses
3. Stanford on iTunes U
4. MIT Open Courseware Initiative

A major problem with most faculty today is that they do not see a need for changing and or developing their "teaching, believing that the knowledge and skills required to teach effectively can just as well be picked up on the job" (Stice, Felder, Woods, & Rugarcia, 2000, p. 3). Faculty members feel that their efforts to improve teaching will be unappreciated and unrewarded. Since changing methods will require substantial expenditures of time and could hinder their chances for tenure and promotion.

In a research done with undergraduate students in U.S., the characteristics/behaviors of instructors were examined (McKeachie, 1994). The results revealed that students find "All Knowing Instructor" very threatening. The worst sins an instructor can commit are listed as:

> Assign work as though your class is the only important one (45%), Lecture too fast then fail to slow down when requested (40%), Make students feel inferior when they ask questions (35%), Be vague about what the tests will cover (34%), Create deceptive or trick questions (34%), Teach in a monotone (32%), Give tests that don't correspond to the classes (28%), Fall behind then cram the material into the remaining time (28%), Ignore how much prior knowledge the students have about the subject (26%), Require a textbook and then don't use it (25%).

Instead of teaching "one-size-fits-all" curriculum in a way that they were taught, faculty members can BEST learn their craft and continue to keep up with the trends in the field of education by learning/ understanding / knowing about course design, learning psychology, classroom dynamics, instructional methods and strategies, students' learning styles, leading discussion, and testing, grading, and evaluation.

A research report, investigating the perspectives of alumni related to the undergraduate education at the Middle East Technical University supported all suggestions above and stressed some other important points in order to improve the teaching practices at the university. The five changes requested (rated highest) by the alumni were (1) the theory and practice should be integrated, (2) the university should better collaborate with industry, (3) the curriculum should be modified continuously taking into consideration the changes and improvements in the professional areas, (4) the teaching methods that provide higher student participation should be used more frequently, (5) the courses based on information technologies should be up to date (Yerin Güneri, Sümer, Çapa Aydın, Çağ, & Barutçu, 2012).

In conclusion, we can say that being aware of all those challenges in front of higher education today, all actors involved should feel responsible to create the necessary environment and incentive for action.

The following list of vocabulary summarizes the challenges for curriculum and instruction in higher education.

Useful vocabulary (Open Education Europa, 2015):

Adaptive learning - an educational process that adapts teaching materials and methods to each student's individual needs. Several software solutions use learning analytics to provide an adapted learning path to users.
Badges – flexible mechanism for recognising achievements as an informal alternative to accreditation.
Blended learning – a teaching approach that combines online and in-person learning, allowing a higher degree of personalisation and learner autonomy.
E-learning – learning conducted via electronic media, typically on the internet.
Flipped classroom – a teaching model in which students access directed teaching at home, for example by watching video lectures, and then using class time to apply new knowledge in a collaborative and interactive space.
Learning analytics – collection, analysis and reporting of large datasets relating to learners and their contexts.
MOOC – Massive Open Online Course. An online course that is freely accessible to anyone and open includes open course materials and opportunities for interaction and collaboration between students.
SPOC – Small Private Online Course. Similar to a MOOC, but used as a blending learning, on-campus experience. It was first coined by Professor Armando Fox.
DOCC – Distributed Open Collaborative Courses. A course format first piloted in September 2013 at 15 colleges in the USA, where professors at each institution teach their own version of the course based on the same core materials. Each professor can develop additional materials for their students, and students can collaborate across the network.
Open – A piece of data or content is open if anyone is free to use, reuse, and redistribute it - subject only, at most, to the requirement to attribute and/or share-alike.
Open Educational Resources (OER) – any online material that is freely accessible and openly licensed for anyone to reuse and repurpose for teaching, learning, and researching.

Open source software (OSS) – software with a free source code that is openly developed through peer-production. Anyone can use or modify the code for their own purposes.

Open access – a publishing model whereby authors make their content freely available, albeit open with partial copyright restrictions or low copyright barriers.

References

Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers*. (2nd ed.) San Francisco, CA: Jossey-Bass.

Bart, M. (2010). The three big questions faculty need to ask. Retrieved from http://www.facultyfocus.com/articles/curriculum-development/the-three-big-questions-faculty-need-to-ask/.

Biggs, J., & Tang, C. (2007). *Teaching for quality learning at university*. (3rd ed.). New York, NY: Society for Research into Higher Education and Open University Press.

Casares, J., Dickson, D. A., Hannigan, T., Hinton, J., & Phelps, A. (2012). The future of teaching and learning in higher education. Retrieved from https://www.rit.edu/provost/sites/rit.edu.provost/files/future_of_teaching_and_learning_reportv13.pdf

Hannan, A. (2001, September). Changing higher education: teaching, learning and institutional cultures. Paper prepared for the Annual Conference of the British Educational Research Association, University of Leeds, Leeds, West Yorkshire, England.

Henard, F., & Roseveare, D. (2012). Fostering quality teaching in higher education: Policies and practices- An IMHE Guide for Higher Education Institutions. Retrieved from http://www.oecd.org/edu/imhe/QT%20policies%20and%20practices.pdf.

Johnson, D. W., Johnson, R., & Smith, K. (1998). *Active learning: Cooperation in the college classroom*. Edina, MN: Interaction Book Company.

Khan, M. A. & Law, L. S. (2015). An integrative approach to curriculum development in higher education in the USA: A theoretical framework. *International Education Studies*, 8(3), 66-76.

McKeachie, W. J. (1994). Teaching tips: Strategies, research, and theory for college and university teachers (9th ed.). Lexington, MA: D.C. Heath/Houghton-Mifflin.

McNeil, J. D. (2006). *Contemporary curriculum in thought and action* (6th ed.). Hoboken, NJ: John Wiley & Sons.

Mintz, S. (2013). The future is now: 15 innovations to watch for. Retrieved from http://chronicle.com/article/The-Future-Is-Now 15/140479/?cid=%20cr&utm_source=cr&utm_medium=en.

Yerin Güneri, O., Sümer, C., Çapa Aydın, Y., Çağ, P., & Barutçu, F. (2012). ODTÜ mezunlarının lisans eğitimine ve mezun yeterliklerine ilişkin görüşleri. Retrieved from http://ogeb.metu.edu.tr/odtu-mezunlarinin-lisans-egitimine-ve-mezun-yetkinliklerine-iliskin-gorusleri-calismasi.

Oliva, P. F. (2001). *Developing the curriculum* (5th ed.). New York: Longman.

Oliver, S. L., & Hyun, E. (2011). Comprehensive curriculum reform in higher education: collaborative engagement of faculty and administrators. *Journal of Case Studies in Education, 2*(1), 1-20.

Open Education Europa (2015). Key concepts in EdTech and Open Education – Do you know all 27? Retrieved from http://www.openeducationeuropa.eu/es/node/139483.

Posner, G. J. (1995). *Analyzing the curriculum* (2nd ed.). San Francisco: McGraw-Hill.

Ralkoofi's Blog (2015). The challenges facing education and curriculum development at the beginning of the twenty-first century. Retrieved from https://ralkoofi.wordpress.com/2009/03/21/the-challenges-facing-education-and-curriculum-development-at-the-beginning-of-the-twenty-first-century/.

Sajjad, S. (2010). Effective teaching methods at higher education level. *Pakistan Journal of Special Education*, *11*, 29 –43.

Stice, J. E., Felder, R. M., Woods, D. R., & Rugarcia, A. (2000). The future of engineering education. IV. Learning how to teach. *Chemical Engineering Education*, *34*(2), 118-127.

Trigwell, K., & Prosser, M. (1996). Changing approaches to teaching: A relational perspective. *Studies in Higher Education*, *21*(3), 275-284.

Vassiliou, A., & McAleese, M. (2014). Report to the European Commission on new modes of learning and teaching in higher education. Luxembourg: Publications Office of the European Union. Retrieved from

http://ec.europa.eu/education/library/reports/modernisation-universities_en.pdf.

Walker, D. F. (2003). *Fundamentals of curriculum: Passion and professionalism* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Welikala, T. (May 2011). Rethinking international higher education curriculum: Mapping the research landscape. A position paper commissioned and published by Universitas 21, leading global network of research universities for the 21st century. Retrieved from http://www.universitas21.com/news/details/32/rethinking-international-higher-education-curriculum-mapping-the-research-landscape.

Teachers teaching under the lens: Curriculum surveillance using the edTPA

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Abstract

There seems to be a uniting of disparate political forces around the idea that teacher education is too important to be left up to traditional colleges of education, and that higher education faculty in particular are more interested in theory than practice. More than any other motif or factor, this shared belief system results in a profession at odds with itself, and accounts for the reason why external forces of control have effectively taken over teacher evaluation.

A background to the public education 'crises'

White papers claim the following: students are not making the grade and therefore public education is, in general, failing. Historically the argument had evolved that privately managed schools perform better, therefore, private schools should be eligible to receive taxpayer subsidy. Subsequently, experiments with school vouchers have grown (Price, 2007; Price & Wittkopf, 2014). Charter schools ('alternative' yet 'still public') that are managed by educational maintenance organizations (EMO) have also mushroomed, largely as a result of federal government support (see Price, 2009). Entrepreneurialism and venture capital opportunities continue on as hedge fund managers reap great profit from leasing former public school buildings for their charter operators.

That both the voucher schools and the charter schools have emerged in the inner city—where historically neighborhood schools used to prosper—should not escape the attention of critical observers. These areas of economic blight and decay have been ignored when it comes to funding, and are readily exploited when education reformers see an opportunity.

Another educational reform, the 'mayoral takeover' of large, inner city, under-resourced school districts has been trotted out as a supposed solution to create bold change. Executive authority with powers to dismantle school boards and local school councils, eliminates local control and democratic governance and pave the way to 'turn around' schools, firing school staff, and attempting to break the teacher unions. The ideological thinking is that mayoral control will simplify the removal of 'bad teachers', and as a result, raise student achievement. Since *A Nation at Risk* (1983), these three—vouchers, charterization, and mayoral takeover—are the preferred educational reform solutions to abate 'chronic public education crises'.

Teacher education is to blame

Mainstream media (Ripley, 2010; Economist, 2016) routinely reportsthat bad teachers are the culprits. Therefore, improving them is also the solution—for improving K-12 student's high-stakes standardized test scores (Hanushek, 2011). What is evolving is that more news attention has shifted focus of late, weighing in on not only teachers, but also teacher preparation, and thus indicting higher education as a whole. The concern has largely, though not exclusively, focused on the 'value proposition' of attending colleges and universities as the significant cost of tuition has continued to increase, driving students from middle class families to take out exorbitant loans to finance their way through education. Working class families have it worse; they are effectively being priced out of a college education. But the focus on higher education in relation to the colleges or schools of education takes on a different tone

than just cost; that tone increasingly declares teacher education in traditional universities as sub-standard. The official line is that teacher colleges continue to produce teachers who—once placed into the K-12 schools and school systems as teachers-of-record/lead teachers—can not increase their own K-12 student's test scores and prepare them for 'college and career' readiness as the federal government demands.

Correspondingly, the mainstream media and the mass entertainment industry frequently paint a picture of bad teachers being shuffled around (see *Waiting for Superman* (2010) by Davis Guggenheim, 2011). They have been joined in their criticism of the teachers by professional educator organizations who, in turn, pivot away from nagging social justice concerns, (rigged political system(s); stagnant economy for millions of working adults, including, teachers) or—and this is most important—rationalize that their efforts to place ever more demands on teacher candidates is in line with, if not advancing social justice. In other words, these professional educator organizations are often complicit with those who want to dismantle the institutions altogether, placing their professional concerns above those of the actual teachers in K-12 schools, by focusing almost exclusively on the failure of teacher preparation.

An increasing number of scholars, writing dense, and difficult to decipher articles in fairly arcane journals (see the *American Educational Research Journal, Educational Researcher; Review of Educational Research; Educational Evaluation and Policy Analysis*), perseverate over the minutiae of preparing teacher candidates to become 'highly effective teachers' (Aspen Institute, 2007; American Federation of Teachers, 2012; Commission on Effective Teachers and Teaching, 2012; Marshall, 2016) even as those teacher candidates are increasingly placed in hard to serve, under-resourced, public, K-12 schools and classrooms. Furthermore, a clarion call has been cast to pay closer attention to practice by the entire teacher preparation profession with the leadership of the American Education Research Association (AERA) in charge. 'Best practices'in the field that are deemed to be more successful in 'closing the gap'in K-12 student achievement is placed in relation exclusively to the general pronouncement by teacher educators that their own teacher education profession was, if not failing, certainly not meeting expectations (see Shulman, 2004; Cochran-Smith & Zeichner, 2005; Darling-Hammonds, 2005). Findings from faculty action research (Ball & Forzani, 2007) have promoted exactly one methodology, 'practice based research' and subscribed to one pedagogy / andragogy 'practice based education'. Teacher education based exclusively on practices as demonstrated in the field during clinical placement has subsequently grown in stature, as has the careers of teacher methods educationalists (see Hiebert, Morris, Berk & Jansen, 2007; Grossman, Compton, Igra, Ronfeld, Shahan & Williamson, September, 2009; Grossman, Hammerness & McDonald, 2009; Zeichner, 2012).

'Practice-based theory' (PBT) (see Ball & Forzani, 2009) rules supreme; it is now enacted in all of the teacher education programs, and is prominently highlighted in graduate student's program coursework. PBT drives teacher/teaching residencies across the K-12 schools, serving as a paradigm (Kuhn, 1970) under which complicated rubrics to evaluate a narrow band of teaching (Danielson, 2007) germinate, increasingly guiding by default, teacher education preparation, policy and practice.

To add further pressure and intensification of working conditions, in the current political environment/milieu, teacher education has come under increased scrutiny by the Department of Education (ED). Through a *Notice of Proposed Rule Making* (NPRM) effort(s)—challenged greatly by the American Association of Colleges for Teacher Education (AACTE), the premiere professional organization that represents some 25,000 educator preparation programs (EPP) across the country, and by independent, college of education faculty who signed letters of

protest—ED intends to place the teacher education profession even more stringently under surveillance, monitoring, and reporting requirements. Furthermore, ED has called upon the Higher Learning Commission (HLC) to monitor seat time and distance education modalities (releasing in July 2016 new rules). For the professional bodies of regulation, including the Council for Accreditation of Educator Preparation (CAEP), ED seeks to affirm that teacher education be reviewed under the curricular lens of 'evidence' produced in alignment with the aforementioned PBT. The events and particulars of all of these phenomena I've described previously as the emergence of an 'audit culture' (Price, 2014; Price, 2015) and the dominance of 'evidence' as in 'data-based decision making.'

edTPA

Teacher performance assessment (edTPA) largely emerges from these phenomenological events. The proliferation of scholarly reference strumpeting a professional indictment of teacher education and a paradigmatic ascension for practice-based theory opens the door to an evaluation tool to 'save the day'. Mainstream educational thinking, mirroring mainstream political and media discourse centers on the supposition that effective teacher = student achievement, and further still = strong economy. What is fascinating is the ultimate coupling of otherwise disparate forces. This is a critical point; the two supposed opposing sides on the historic professionalism vs. deregulation debate are now united in their shared interest to lock down on the teacher education profession, and place it under strict control. edTPA was birthed, not just as a natural evolution of 'best practices',nor due to greater insight concerning 'world class', national, and/or 'common core' state standards (CCSS), but out of the under-examined and less discussed (by scholarly researchers, who feign ignorance) *wedding* of the two oppositional groups: *administrative progressives* and *edupreneurs.*

- The *administrative progressives* (exemplified by Stanford educators like Linda Darlings Hammond whom largely created edTPA) desire greater professionalism in teacher preparation. Further still, a configuration of these educational researchers are expressing interest (largely because this is where the action research funding resides) in raising standards for pathways into the teaching profession, learning about what works, and constructing ever more finely tuned/normed evaluation tools to compare and contrast predicted teacher candidate effectiveness across different institutions of higher education (IHEs).
- The *edupreneurs* (exemplified by yet another Stanford person, this one from the business school: Jonathan Schnur of New Leaders for New Schools (NLNS) aim to develop the education marketplace with well-funded support by corporations such as Pearson Education. Other venture philanthropist foundations (the Gates Foundation leading the way) provide grants for and support research that—although not required to do so—often lend credibility to market-based education reform efforts. Think tanks (the Heritage Foundation and the Fordham Institute, for example) provide ideological justification for decentralization and deregulation of teacher education and most significantly push for reinventing public education (Chubb & Moe, 1990; Hill, 1995).

To imagine these categories as not only theoretical configurations, but as particular constituencies with specific political interests, it requires careful attention to what previously used words such as 'evidence' and 'data' mean in a corporate takeover context.

First, it is important to establish that the word 'progressive' has always been nuanced and problematic because in American education history, several competing curricular strands; scientific management, social meliorism, developmental psychology (child-centered pedagogy) vie for the mantle of progressivism. Yet the strands often compete against each other for the

honor. One example is in the difference in approaches between 'pedagogical progressives' versus 'administrative progressives', well documented in the critical work of Marjorie Murphy in *Blackboard Unions* (1990). Administrative progressives, seek to centralize authority and professionalize teachers; pedagogical progressives strive that the aims, means, and ends of their practice broaden democratic possibilities with the child at the center of curriculum formation. Both the pedagogues and the administrators claim to be interested in teachers teaching well. But pedagogues have less standing than administrators in an age of 'managerialism' (Lynch, 2014).

While it would be fair to say that administrative progressives—those progressive educators who have gained managerial stripes—might differ from the market-based education reform group, they do so only in particulars. *Both groups seem remarkably similar* and consistent with their penchant to making claims that they only use 'evidence' to advance their stated interests (see Cochran-Smith & Fries, 2001 *the* incisive history on this matter). Cochran-Smith and Fries state it thusly:

> ... debates about reforming teacher education are embedded within two larger national agenda: the agenda to professionalize teaching and teacher education, which is linked up to the K-12 standards movement, and the movement to deregulate teacher preparation, which aims to dismantle teacher education institutions and break up the monopoly of the profession (Cochran-Smith and Fries, 2001).

Ultimately these self-proclaimed divergent groups, converge, and end up at the same place: they insist that they have evidence, and believethat creating effective teachers using *their evidence* is the primary aims-means-ends of reforming education at large:

> Taken together, what Cochran-Smith and Fries label the 'evidentiary warrant,' the 'political warrant,' and the 'accountability warrant,' are intended by advocates of (seemingly, my thought) competing agendas to add up to 'common sense' about how to improve the quality of the nation's teachers (Cochran-Smith and Fries, 2001).

Their aim(s), with different paths, is to place teacher education under detention greater control or dismantle it altogether. They also both pay homage to 'global competitiveness' for which they deem is the penultimate goal of education.

So what is the edTPA? It is a *consequential tool for teacher candidate evaluation* and a protocol to measure performance. Of significant importance to edTPA is the submission of a digital artifact of teachers teaching, as described on the Stanford Center for Assessment, Learning and Equity (SCALE) website:

> Candidates may submit video clips recorded while teaching the Learning Segment for edTPA. Each clip must represent a continuous recording of instructional time. In other words, the clips may not be edited. Candidates choose the video clip(s) that represent subject specific teaching and learning as designated in their edTPA handbook. Candidates should review their handbook video clip guidelines carefully to determine the portion of recorded classroom teaching that is most appropriate for edTPA submission (edTPA, 2016).

Purpose

The purpose of this essay is to describe the social construction of the teacher education field in broad terms, both historically and politically today. Teaching teachers matters in the shaping of our society, whether in the United States of America, the Republic of Turkey or elsewhere in the developing world, and as such deserves our critical analysis.

The United States of America has been under a several decades long reform effort directed at public education. Only recently did the attention become more sharply focused on teacher education. This is significant because it indicates a sharp turn in the road of education reform. In recent times, federal education *No Child Left Behind* (NCLB) placed report cards on public schools; that law was largely eclipsed by a program called *Race to the Top* (RTT), which incentivized the advancement of charter schools, merit pay, and the *Common Core State Standards* (CCSS). NCLB was replaced and now the *Every Student Succeeds Act* (ESSA) is—as of 2015—the law of the land. Furthermore, educators have to consider a new evaluation tool called *edTPA.*

Method: Deconstructing edTPA

Before deconstructing the meaning behind edTPA, it is important to include how teacher education arrived in its present form today, where teacher education is deemed to be insufficient, and considered to be in need of improvement by out sourcing its main responsibility. Questions to be asked are:

- Why are teacher colleges struggling, under so much pressure to prove their worth?
- Why are enrollments in USA teacher preparation showing dramatic decline?

Given the increase in regulations for teacher preparation, and paradoxically so the dramatic privatization of the teacher education—due, I argue, to the deregulation of corporate enterprise and outsourcing of education—faculty are left wondering,

- What is happening to the teaching and learning profession(s) in the USA?

Design: Examining the evidence inthe white paper

Since the release to the mainstream media organizations of a white paper, *A Nation at Risk* (1983), public education in general has been under scrutiny, some would say assault. It is important to understand the political economy, the nature of this event; it can be named and it has implications.

In spite of all of the other sectors that could be and should be placed under great scrutiny, the banking industry—bailed out to the tune of billions of dollars by the American taxpayer—the insurance industries—that have for decades gouged the American peoples while until recently making it incredibly difficult to afford if not procure healthcare—did not receive attention, until very recently. Consider the Pentagon, whose military budget in the trillions of dollars goes routinely unexamined, barely understood by the American public.

What then of the corporatization, of the *Citizens United vs. Federal Election Commission* (2010) ruling, which has compromised the democratic political system by allowing unlimited, unexamined, funding of political elections? What of the school-to-prison-pipeline that means America imprisons more of its population than ever before? No, none of these problems have merited the interest that has surrounded the so-called ‘crises in education’ nor the attention given to blame the public schools for supposedly failing.

Blaming public schools for many of the problems in American society has always been easy; a diversion from what are the real problems. Conflicts in race relations, bailing out banks while foreclosing on working people’s homes, chronic involvement by the military in costly, undeclared wars, and elusive, tax-avoidance by multi-national companies seeking tax-shelters off shore these are among those issues. Corporate-sponsored, mainstream media assiduously avoids genuine discussion and scrupulous examination. As a result, public education has been

declared 'broken' and in need of a fix, while other systems that are routinely not working, elude notice.[*]

The fix has been in for public education for some time now; it started in 1983 with the release of the startling essay *A Nation at Risk* (NAR), a prominent and highly circulated 'white paper' that decried America's schools for 'unilaterally disarming' the nation, and for public education failure as signaling the end of American prosperity. Since then, teaching and learning in the USA has largely fallen under surveillance and monitoring. Working conditions in schools have become drastically and substantively different in orientation from the original conception of meeting the needs of students and their parents and families in local communities. Educators have been measuring the 'results' ever since!!

It is important to critically examine this phenomena, the belief that public education is failing. The solution proposed—raising standards and more testing—continues to cut across different political lines, geographies and boarders. Coming out of, and enshrining the idea of accountability and 'choice' in education in the USA, the legacy of *A Nation at Risk* is not an isolated, American phenomena. *The Education Reform Act* (ERA) of Great Britain in 1988 was its corollary. In a telling explanation, Powell and Edwards (2005) describe how, in the exact same manner as in the USA, free market education reform devolved control of education away from locally elected constituencies and into the hands of private forces:

> Over the past few years, the problem of 'parental choice' had reached salience at a time when the matrix relationship between the State, education and the economy was being restructured. Coupled with this, educational policy initiatives such as ERA have a number of common threads that establish both a shift in pupils teaching and learning needs and the surveillance of teachers and those pupils being taught (Powell & Edwards, 2005).

British curricularist Geoff Whitty (1998) takes this phenomena in England further—mirroring our own observations in the USA—stating that the so-called 'choice' in education and 'contract' schools were less about reforming practices, and more about devolving public education and replacing traditional public schools altogether. As a result, Britain has exclusively moved to 'academies' and, likewise, teacher education under the new ESSA (2015) broadens that call for 'teaching academies.' A market mentality sets in, equating school *explicitly* with business.

This shift toward business models for education could not have happened without explicit governmental encouragement. At first the state governments—following the lead of big business—embraced world-class standards, but later the federal government directly emboldened the business model. Thus empowered, it was hardly a surprise that free market aims essentially took over the management of the aims, means and ends of public schools. The funding structure historically 'needs-based' became a tool to leverage desired outcomes; thus, under ESSA in 2016, for example, local school districts need to apply for grants and the state governments are expected to serve as a conduit, to dole out the funds, but with strict limits on how that money can be spent. The curricular details for local school officers—in partnership often with the Educational Maintenance Organization (EMO)—are left over to be figured out.

By takeover what do I mean? Well, the United States of America has a locally controlled public school system. Locally elected school boards run schools, and they are funded by property taxes paid for by local property owners.

[*]. One qualification is that during a presidential election season, several of these 'populist' issues do make an appearance, at least on the campaign trail. They quickly, however, fade into obscurity when the television lights are off and when the campaign is over.

The individual states (like my state of Wisconsin) have traditionally provided funding for public schools; we have called them neighborhood schools, and my children for example still attend them. The federal government doesn't pay much; it provides only a small percentage of the funding for equity, such as TITLE I for children with special needs, free and reduced lunches, and Supplemental Educational Services (SES) for students from poverty. These funds though meager are, however, very helpful for cash-strapped schools in poor rural and underserved urban areas.

Congress in 2015 determined that the federal government had been overstepping its role, imposing on the states unfunded mandates. This is a fair reflection of ED under the Obama administration as they had—through Secretary of Education Arne Duncan—become increasingly involved in public education decision-making, relying on their own set of 'white papers' developed by powerful think tanks[†] and calling for making education run like a business the business model again:

> Until all Chicago's school families have school choices that include more innovative charter or contract schools, 'equal opportunity' for them will be only a slogan. (Civic Committee, 2009).

Sometimes law is passed as in NCLB; at other times major grants for local school districts follow ED's rules, as on display with programs such as RTT. The bottom line is that these initiatives—whether created explicitly or not by the federal government—certainly reflect large multinational business interests and weigh heavily on the decision-making that goes on in and around local schools.

The business model and more white papers

Since *A Nation at Risk* (1983), and following teacher education's own foundational response—the Carnegie Forum on Education and the Economy (1986) aimed to put in motion plans for crafting the 21st century teacher—other think tanks followed suit, weighing in on the idea that deregulation and privatization would reform education for the better. Of the most influential were *Politics Markets and America's* Schools (1990) from the Brookings Institution, and *Reinventing Public Education* (1995) sponsored by the RAND organization. The idea is that increasing the consumer's 'choice' to select a school from amongst a 'marketplace' of 'alternative schools' public education will be forced to 'compete' for 'customers' and all the schools by osmosis would improve.

So in like fashion, education was reduced to a consumer good that you could purchase on the market.

The general idea is that outsourcing and contracting help make schools more efficient and EMO/for-profits better manage the schools. In an incisive criticism, Kevin Welner and Alex Molnar—two educational policy experts from the National Education Policy Center (NEPC)—point out that education reform think tanks routinely produce white papers that invariably come to the same conclusion:

> In 2007, the second year of our Think Tank Review Project (thinktankreview.org), we reviewed 18 think-tank reports about education policy. Time after time, our reviewers

[†]. Arne Duncan's work prior to moving to Washington D.C. as Chief Executive Officer (CEO) of the Chicago Public Schools (CPS) certainly was informed by the Commercial Club of Chicago's two germinal reports: *Left Behind* (2003) and *Still Left Behind* (2009).

> identified analyses that led inexorably to a privatization prescription. Even reports that offered a reasonable analysis of the No Child Left Behind Act ('End It, Don't Mend It: What to Do With No Child Left Behind,' from the Cato Institute) or the dropout problem ('The High Cost of Low Graduation Rates in North Carolina,'from the Friedman Foundation) suddenly and groundlessly identified as the key policy implication of their findings the need for vouchers or other forms of privatization (Welner & Molnar, 2008).

Given that EMOs are thus intellectually justified in making money while reforming education, they are naturally drawn into places like Chicago, to contract with CPS and run 'turnaround' schools for a profit. The basic premise time and time again (as Welner and Molnar confirm) is that public education is a monopoly that needs to be broken up and its parts sold to the highest bidder.

A relatively current version of the privatization agenda comes from the white paper *Tough Choices or Tough Times* (2007). This writing is well known to critical educators and involves the input of several CEOs and former Secretaries of Education. It argues that unless we (USA) change all of PK-20 education to reflect a business model, we'll not be able to compete for filling high status occupations that go to lower paid better-educated workers from around the world.

A second white paper *Surpassing Shanghai* (2011) is very contemporary to the privatization agenda today. The author, Marc Tucker, is frequently cited as an educational expert. Dr. Linda Darlings-Hammond who is frequently sought after as a speaker writes the forward to Tucker's book. Tucker calls for changing the accountability system and more competition, among other things. Darlings-Hammond co-authored *Preparing Teachers for a Changing World* (2005) and provided, it should be noted, critical help in producing the edTPA. Darlings-Hammond was on the short list to become the Secretary of Education to President Barack Hussein Obama; Marc Tucker *will very likely become the Secretary of Education* if candidate Hillary Rodham Clinton is elected. He and Clinton co-authored an opinion piece on education reform matters during the previous Clinton administration.

Privatization of the public good in the USA

Naomi Kline's *Shock Doctrine* (2007) argues that predatory capitalism works this way; it preys on and takes advantage of breakdowns in the public welfare. A case in point in public education in the USA today is that all of the schools of the New Orleans Public School District (NOPSD), severely damaged by Hurricane Katrina in 2005 are now charter schools.

Deregulation and privatization followed each other and matured in the 1990s public sector when the telecommunications industry pushed legislation that would make the once public utility and NASDAQ Company on the stock market (see Price, 2010); at the same time the philosophy took root in and emerged in the public education system. This is not a coincidence, but indicates a significant change in the culture, a paradigm shift that laid the groundwork for privatization and contracting out education services.

Some would call it Neoliberalism.

Not everyone went along with this idea. Following the so-called 'Battle in Seattle' (1999), a wave of resistance to globalism opened up. The World Trade Organization (WTO) and the International Monetary Fund (IMF) imposed austerity and structural adjustment. Peoples across the world resisted. The Free Trade Agreement of the Americas (FTAA) attempted to

define education in this historical moment as a good (Price & Hamilton, 2001); education was thus reduced to a 'service' or product commoditized and commodified.

What does this do to education? In the USA and abroad?

As the entire world economy was being reshaped, education took on more distinct forms revolving around testing and measurement. Specifically, the high stakes standardized test took over public education in the 1990s and many teachers complained that they felt they were now being pressured to 'teach to the test'. Outcomes based education (OBE), a once progressive reform, was seemingly co-opted by the business-like mentality that equated outcomes less with pedagogical concerns and more with corporate goals and designs, fashioned by politicians whom saw meeting business and industry standards to be their main responsibility. The resulting evaluations systems that grew out of OBE were onerous and tedious. Timing student's identification of words, completing accounting problems, and taking and passing tests were all the norm.

Karen Ferneding in an insightful commentary *Questioning Technology* (2003)*,* calls into question the logic of using technology to judge education as effective. Her argument is that the ideology of 'instrumental rationality' so popular in business circles, begins to reduce complex processes of teaching and learning into standardized, discrete parts, more easily managed perhaps, but resulting in grim consequences for the curriculum.

The corporatization of education has as its ultimate aim *Commercial Club Curriculum,* meeting the needs of Wall Street, not Main Street America; this is the supposition in *Defending Public Education from Corporate Takeover* (2013). Commercial Club forces have striven to build a dual track system: one for college and the other for career readiness. Translated another way, administrative tracks (middle-level management) are saved for an elite group and vocational training (service industry) is reserved for the many hard working peoples, struggling just to get by. Historically, and still today, the owners of society merely send their children to private prep schools (Price, Duffy &Giordani, 2013).

One unintended consequence of ramping up standards and making school more competitive and bringing in technology to stoke that process is that schools are constantly measuring everything that moves!!

So school under federal takeover and a business model under neoliberal deregulation and privatization pressures, creates an entirely new culture, not experienced before, a paradigm shift for public education. Having worked in the teacher education field for several years, not as a methodologist, but as a philosopher and foundations and research faculty member, the best term I can apply appears to be 'audit culture'.

Results: Education under the Audit Culture

Peter Taubman, a teacher educator of many years and staunch advocate for curriculum theory and study provides a cogent definition that bears repeating:

> The implementation across a wide range of businesses and institutions of systems of regulation, in which questions of quality are subsumed by logics of management.

The audit culture has a discourse:

- performance outcomes,
- quality assurance,
- accountability,
- transparency,

- efficiency,
- best practices
- stakeholder
- bench marking
- and value-added

Bill Pinar says that while standards might raise the status of the profession, education reform is still 'dreamt into existence by others' (1992):

> We might say that what is operative is an accountants concept of education, higher figures. Change might seem exhilarating to those of us who study the schools from the universities. For many teachers, current school reform might feel like being yanked around yet one time more (p. 229).

The professionalization movement decided that under this audit culture they better raise their standards. Endowed faculty chairs, quantitative researchers, econometricians and others, Michael Apple (2010) points outs, benefitted from and professionally advanced their profession via the standardization of teaching. National Board Certification (NBC), for example, raised the bar for the teaching profession. Five core propositions were:

1. teachers are committed to students and their learning;
2. teachers know the subjects they teacher
3. teachers are responsible for MONITORING and managing student learning
4. teaching think systematically about their practice
5. teachers are members of professional learning communities.

The general form of this career continuum is replicated in the 2013 report *Blueprint for Recognizing Educational Success, Professional Excellence and Collaborative Teaching (RESPECT),* created by the Obama administration ED. Embedded in this document is the idea of the 'teacher leader' (USDOE, 2013).

Real teachers do get involved with discussion and deliberation concerning standards. Still their remains debate and contention over whether the standards have emerged from the bottom up or are being imposed from the top down.

Deregulation follows the audit culture

On the deregulation spectrum is Teach for America (TFA). TFA is a teacher preparation organization that represents the attempt to put college students who score at the top of their class into underserved, inner city classrooms. They lead in what is otherwise known as an Alternative Certification Program. Alternative Certification Programs are controversial area because the organizations that run the programs are for-profit.

Another outgrowth of deregulation is an Alternative Certification Program called Academy of Urban School Leadership (AUSL). Sometimes these organizations need to partner with traditional teacher preparation programs like my own National Louis University because while the Alternative Certification Program does training, they need help with the curriculum. The truth of the matter is that my university is competing with these organizations and sometimes partnering with them in this complicated scheme of teacher preparation.

Deregulation efforts tend to be funded by the more powerful educational reform foundations, including Broad, Walton and of course Gates. An interesting paradox, perhaps, is of the professionalization movement and the deregulation movement meeting in the middle. Cochran-Smith and Fries (2001) argue that both sides are ideological, preferring to define

evidence, politics, and accountability in certain ways that preclude imagining other possibilities.

Pearson Education leads the world in putting out educational materials. With Pearson Education having largely taken up most of the education industry, it stands to reason that they would see a market in teacher candidate testing.

The professionalization movement has been working for many years to raise the level of teacher preparation standards to professionalize the field. The deregulation movement—following up on thirty plus years of privatization, 'choice', and contracting/outsourcing 'educational services' is keenly interested in breaking up the public education 'monopoly' and simply putting together a lucrative test for teacher candidates to pass.

Conclusion: edTPA to the rescue?!

All of this adds up to the nexus of forces coming together around the edTPA. edTPA calls for evidence, and in the state of Illinois displaying that evidence and speaking to it is consequential to being able to secure the educator/teaching license.

So what is the edTPA? It is a tool and a protocol to measure performance. Of significant importance to edTPA is the submission of a digital artifact of teachers teaching, as described on the Stanford Center for Assessment, Learning and Equity (SCALE) website:

> Candidates may submit video clips recorded while teaching the Learning Segment for edTPA. Each clip must represent a continuous recording of instructional time. In other words, the clips may not be edited. Candidates choose the video clip(s) that represent subject specific teaching and learning as designated in their edTPA handbook. Candidates should review their handbook video clip guidelines carefully to determine the portion of recorded classroom teaching that is most appropriate for edTPA submission (edTPA, 2016).

A struggle ensued over edTPA, with an outpouring of letters in protest and one organization in particular opposing the outsourcing of teacher candidate evaluation. That battle is over. edTPA became consequential in Illinois, September 1, 2015.

Working with my teacher education colleagues, a research grant continues to unfold and we conduct interviews of the teacher candidates who are now completing the test. I'm a foundations professor who works with pre-service teacher candidates, but not as a methodologist. This research provides access to the classroom to see what is transpiring:

> **Purpose:** Our project is designed to address questions about how teacher candidates and cooperating teachers experience preparation and implementation of edTPA during the first year when scores are consequential for earning licensure. Questions to be addressed include: How do our teacher candidates and cooperating teachers understand our college of education's edTPA preparation process? How effective is our teacher preparation process for supporting candidates as they take the edTPA?

There are 3 major tasks. Planning, Instruction and Assessment. Several rubrics align with these tasks. My previous research with teacher education colleagues, a Faculty Residency Research Project provided by ED via the Fund for the Improvement of Post-secondary Education (FIPSE), found great value in co-teaching and Universal Design for Learning (UDL). Co-planning between co-teachers, making dedicated time available for deliberation between, for example, special education and general education teachers, supports **Task 1. Planning for Instruction and Engagement**; and developing an environment, which fosters the usage of

different learning styles, supports **Task 2. Instructing and engaging the focus learner.** Our co-researchers will need to review for **Task 3. Assessing Learning** (Winter & Price, to be published, 2017) in the final results. We need to continue to do research as this **Task 3** is not an aim of our proposed study.

Our questions for the teacher candidates who have taken the test and then receive the scores are very methodological, simple, and straightforward; but the information we get back will be much more complex. edTPA asks for evidence of effective teaching. This calls for the teacher candidate to secure two ten-minute video recorded classroom lessons. Those lessons are to be coded to meet the objectives of **Task 2: Instructing and engaging the focus learner.**

Discussion: A role remains for Critical Theory

Does the edTPA help? Do the rubrics help? Maybe. Preliminary results of the students are inconclusive at best. But critics such as these wonder is edTPA really that much different/necessary than teacher preparation before the implementation of this high stakes tool?

The advocates insist that it does matter. The training, they believe, for inter-rater reliability in evaluation alone will improve teacher preparation. I've attended the workshops and the professional development, and as a foundations professor, there are some things even I can learn. But the critics like myself remain unconvinced:

> We argue that TPA mandates have outpaced the research base, thus illustrating the influence of an intensely lucrative educational marketplace. We conclude this essay with a call for independent, peer-reviewed scholarship regarding the validity, reliability, and impact of high-stakes, privatized, teacher performance assessment (Dover, Schultz, Smith, & Dugan, 2015).

So maybe that's what my colleague and I might also be doing, finding out how the privatized, teacher performance assessment is working. The debate will continue, and get deeper. This article says we need more evidence-based decision making but another article critiques the very idea that we need to focus so intently on evidence:

> We conclude that the meaning of a 'culture of evidence' depends in large measure on the motivations underlying its development (Peck & McDonald, 2014).

Must we really produce evidence for everything we do? What does this do for creativity, spontaneity? Trust?

High standards are compelling yet also complicated by whose standards, what standards, and why so many standards and tests to test those standards. In this last source (Conley & Garner, 2015) a compelling argument is made: in spite of obvious corporate intrusion into the education space, let's nonetheless use the space available to improve—rather then deskill—teachers and the teaching profession.

This means collaboration and teacher and faculty professional development. I believe, however, we must never neglect the role of critical policy analysis, nor forego critical thinking.

References

Cochran-Smith, M., & Zeichner, K. M. (2005). *Studying teacher education: The report of the AERA Panel on Research and Teacher Education.* Mahwah, N.J: Lawrence Erlbaum Associates.

American Federation of Teachers (Dec. 2, 2012). Press Release 'AFT Report on Teacher Preparation Recommends Bar-Like Exam and Demonstration of Teaching Competency.' http://www.aft.org/newspubs/press/2012/120212.cfm (Last accessed August 1, 2016)

Apple, M. W., & Apple, M. W. (2014). *Official knowledge: Democratic education in a conservative age.* New York: Routledge, 2014.

Ball, D. L., & Forzani, F. M. (2007). What makes education research 'educational'? *Educational Researcher*, *36*(9), 529-540.

Ball, D. L., & Forzani, F. M. (2009). The Work of Teaching and the Challenge for Teacher Education. *Journal of Teacher Education, 60*(5) 497–511.

Bill & Melinda Gates Foundation & Inter-university Consortium for Political and Social Research. (2013). *Measures of effective teaching: Study information.*

Bush, G. W., & United States. (2001). *No child left behind: Communication from the President of the United States transmitting a report for nationwide education reform entitled, No child left behind.* Washington: U.S. G.P.O.

Carnegie Forum on Education and the Economy. (1986). *A nation prepared: Teachers for the 21st century: the report of the Task Force on Teaching as a Profession, Carnegie Forum on Education and the Economy, May 1986.* Washington, D.C: The Forum.

Chubb, J. E., & Moe, T. M. (1990). *Politics, markets, and America's schools.* Washington, D.C: Brookings Institution.

Civic Committee of the Commercial Club of Chicago (June, 2009). *Still Left Behind*. *Student Learning in Chicago's Public Schools.* Chicago, Ill: The Committee.

Cochran-Smith, M., & Fries, M. K. (November 01, 2001). Sticks, Stones, and Ideology: The Discourse of Reform in Teacher Education. *Educational Researcher, 30,* 8, 3-15.

Commercial Club of Chicago. (2003). *Left behind: Student achievement in Chicago's public schools.* Chicago, Ill: The Committee.

Commission on Effective Teachers and Teaching (2012). *Transforming Teaching: Connecting Professional Responsibility with Student Learning*.

http://www.nea.org/assets/docs/Transformingteaching2012.pdf (Last accessed August 1, 2016)

Commission on No Child Left Behind (Aspen Institute). (2007). *Beyond NCLB: Fulfilling the promise to our nation's children.* Washington, D.C: Aspen Institute.

Common Core State Standards Initiative. (2011). *Common Core State Standards for Mathematics.*

Common Core State Standards Initiative. (2010). *Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects.*

Conley, D. T., & Gardner. (2015). The edTPA and The (De)Skilling of America's Teachers *Teachers College Record, July 17*. ID number: 18037.

Danielson, C. (2007). *Enhancing professional practice: A framework for teaching*. Alexandria, VA: Association for Supervision and Curriculum Development.

Darling-Hammond, L., & Bransford, J. (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do.* San Francisco, CA: Jossey-Bass.

Darling-Hammond, L. (2010). *Evaluating teacher effectiveness: How teacher performance assessments can measure and improve teaching.* Washington, DC: Center for American Progress.

Education Reform. (Jun 11th, 2016) Teaching the teachers: Great teaching has long been seen as an innate skill. But reformers are showing that the best teachers are made, not born. *The Economist.* Boston, Newark And New York.

edTPA. (2016). http://edtpa.aacte.org/faq#57 (Last accessed, August 1, 2016)

Ferneding, K. A. (2003). *Questioning technology: Electronic technologies and educational reform.* New York: P. Lang.

Grossman, P., Compton, C., Igra, D., Ronfeld, M., Shahan, E., & Williamson, P.W. (September, 2009). Teaching Practice: A Cross-Professional Perspective. *Teachers College Record*, *111*(9) 2055-2100. Teachers College Columbia.

Grossman, P., Hammerness, K., McDonald, M. (2009). Redefining teacher: Re-imagining teacher education. *Teachers and teaching: Theory and practice, 15*(2), 273-290.

Guggenheim, D., Kimball, B., Chilcott, L., Strickland, B., Canada, G., Rhee, M., Weingarten, R., Paramount Home Entertainment (Firm). (2011). *Waiting for 'Superman'.* Hollywood, Calif: Paramount Home Entertainment.

Hanushek E.A. (2011). The economic value of higher teacher quality. *Economics of Education Review, (30),* 466–479. Stanford University.

Hesse-Biber, S. N. (2014). *Feminist research practice: A primer.* Sage Publications: Boston College.

Hiebert, J., Morris, A. K., Berk, D., & Jansen, A. (2007). Preparing teachers to learn from teaching. *Journal of Teacher Education, 58*(1), 47–61.

Hill, P. T., George Gund Foundation., Lilly Endowment., Rand Corporation., & Rand Institute on Education & Training. (1995). *Reinventing public education*. Santa Monica, CA: RAND.

Klein, N. (2007). *The shock doctrine: The rise of disaster capitalism.* New York: Metropolitan Books/Henry Holt.

Kliebard, H. M. (1987). *The struggle for the American curriculum, 1893-1958.* New York: Routledge & Kegan Paul.

Kupermintz, H. (2003, fall). Teacher effects and teacher effectiveness: A validity investigation of the Tennessee Value Added Assessment System. *Educational Evaluation and Policy Analysis, 25*(3), 287-298.

Lynch, K. (Winter, 2014). New Managerialism: The Impact on Education. *CONCEPT: The Journal of Contemporary Community Education Practice Theory. 5*(3). Accessed from http://concept.lib.ed.ac.uk/index.php/Concept/article/viewFile/271/255

Marshall, J. C. (2016). *The highly effective teacher: 7 classroom-tested practices that foster student success.*

Meuwissen, K., Choppin, J., Shang-Butler, H., and Cloonan, K. (2015). *Teaching Candidates' Perceptions of and Experiences with Early Implementation of the edTPA Licensure Examination in New York and Washington States*. Warner School of Education, University of Rochester.

Meyer, R. C., Hudson, D. L., Keasley, A., Centre Communications., & Ambrose Video Publishing. (2010). *Citizens United vs. Federal Election Commission: The campaign finance reform case.* New York: Ambrose Video.

Murphy, M. (1990). *Blackboard unions: The AFT and the NEA, 1900-1980.* Ithaca, N.Y: Cornell University Press.

National Center on Education and the Economy (U.S.). (2007). *Tough choices or tough times: The report of the New Commission on the Skills of the American Workforce*. San Francisco: John Wiley & Sons.

National Commission on Excellence in Education, (1983). *A nation at risk: The imperative foreducational reform.* Washington, DC: US Government Printing Office.

Pinar, W. F. (September 06, 1992). 'Dreamt into Existence by Others': Curriculum Theory and School Reform. *Theory into Practice, 31(*3), 228-35.

Powell; J. L. and Edwards, M. (2005) Surveillance and Morality: Revisiting the Education Reform Act (1988) in the United Kingdom. *Surveillance & Society 3*(1): 96-106

http://www.surveillance-and-society.org/articles3(1)/education.pdf (Last accessed, August 1, 2016)

Price, T. (June 26, 2009) Ohio: Birthplace of Charter Education and Opposition to it. *Counterpunch.* http://www.counterpunch.org/2009/06/26/ohio-birthplace-of-charter-education-and-opposition-to-it/ (Last accessed August 1, 2016).

Price, T. (December 4, 2009) Milwaukee League comes to the Defense of Public Schools. *Counterpunch.* http://www.counterpunch.org/2009/12/04/milwaukee-league-comes-to-the-defense-of-public-schools/ (Last accessed August 1, 2016).

Price, T. A. (2010). *Classrooms without walls: An exploration in the management of Video Distance Learning (VDL).* Saarbrücken, Germany: Lambert Academic Publishing.

Price, T. A. (2007). Secular Humanism vs. Religion? The Liberal Democratic Education Tradition and the Battle over Vouchers in the USA. *Forum on Public Policy.* http://www.forumonpublicpolicy.com/archivespring07/price.pdf (Last accessed August 1, 2016).

Price, T. A. (January 01, 2014). Teacher Education under Audit: value-added measures, TVAAS, EdTPA and evidence-based theory. *Citizenship, Social and Economics Education, 13,* 3, 211.

Price, T.A. and Hamilton, J. (2001). Quebec City: The Battle Against the FTAA. *indymedia.org* Madison, Wisconsin. http://www.archive.org/details/ToddAlanPriceandJohnHamilton (Last accessed August 1, 2016)

Price, T. A., Duffy, J., & Giordani, T. (2013). *Defending public education from corporate takeover.* University Press of America.

Ripley, Amanda. (Jan. – Feb., 2010). What Makes A Great Teacher? *The Atlantic* http://www.theatlantic.com/magazine/archive/2010/01/what-makes-a-great-teacher/7841/ (Last accessed August 1, 2016).

Shulman, L. S., & Wilson, S. M. (2004). *The wisdom of practice: Essays on teaching, learning, and learning to teach.* San Francisco: Jossey-Bass.

Task Force on Teaching as a Profession. (1986). A nation prepared: Teachers for the 21st century. New York, NY: Carnegie Forum on Education and the Economy.

Taubman, P. M. (2009). *Teaching by numbers: Deconstructing the discourse of standards and accountability in education.* New York, NY: Routledge.

Tucker, M. S., & National Center on Education and the Economy (U.S.). (2011). *Surpassing Shanghai: An agenda for American education built on the world's leading systems.* Cambridge, MA: Harvard Education Press.

US Department of Education. (2009). Race to the Top program: Executive summary. Retrieved from https://www2.ed.gov/programs/racetothetop/executive-summary.pdf.

United States. (2015). *Every Student Succeeds Act.*

United States. (2013). *Blueprint for Recognizing Educational Success, Professional Excellence and Collaborative Teaching (RESPECT).*Washington, DC: U.S. Dept. of Education.

Welner, K. and Molnar, A. (February 19, 2008) The Privatization Infatuation Should We Buy What Think Tanks Are Selling? *Education Week, 27*(24) p. 28-29.

Whitty, G., Power, S., & Halpin, D. (1998). *Devolution and choice in education: The school, the state, and the market.* Buckingham [England: Open University Press.

Zeichner, K. (2012). The turn once again towards practice based education. *Journal of Teacher Education, 63*(5), 376–382.

The effect of a microteaching-based method course on pre-service teachers' mathematics teaching anxiety and sense of self-efficacy

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Abstract

The aim of this study is to investigate the effect of microteaching-based method course instruction on pre-service teachers' mathematics teaching anxiety and sense of self-efficacy. The participants of the study were 72 pre-service teachers in the elementary school mathematics teachers' preparation program. A pretest-posttest quasi-experimental research design was applied in the study. Microteaching-based method course instruction was implemented in the experimental group for one semester. The Mathematics Teaching Anxiety Scale (MATAS) and the Teachers' Sense of Efficacy Scale (TSES) were applied to all pre-service teachers at the beginning and at the end of the semester. The findings of the study revealed that, compared with the instruction in the control group, microteaching did not affect the mathematics teaching anxiety and sense of self-efficacy of the pre-service teachers. Teacher educators who implement microteaching should enable pre-service teachers to have more mathematics teaching experience to increase their mathematics teaching self-efficacy and decrease mathematics teaching anxiety.

Keywords: Microteaching, math teaching anxiety, teaching self-efficacy, method course, pre-service teachers.

Introduction

The original microteaching method used in teacher education was developed at Stanford University in early 1960. Microteaching is defined as a system of controlled practice that makes it possible to concentrate on specified teaching behavior and to practice teaching under controlled conditions (Allen & Eve 1968, 1969). The main purpose of microteaching is to improve pre-service teachers' teaching skills through practice, feedback, and evaluation (Orlich et al. 1997). Microteaching simplifies teaching and helps in training teachers to use specific skills through the examination of theory, modeling, practice, feedback, and further practice (Duncan & Biddle 1974). According to Allen and Ryan (1969, p.1-3), microteaching reduces the complexity of the real classroom teaching situation in terms of number of students, length of time, learning, and contents. It emphasizes training toward mastery of teaching activities. Microteaching also offers better control over practicing teaching activities because many factors can easily be manipulated to attain a greater degree of control in the training program.

The microteaching model cycle consists of six stages: Plan, Teach, Observe (Critique), Replan, Reteach, and Reobserve. In the plan stage, the standards of teaching and the desired behaviors are determined, as are the assessment criteria and feedback sessions (Farris 1991). The instructor designs a model teaching plan, and the pre-service teachers prepare lesson plans under the guidance of the instructor. In the teaching stage, the pre-service teachers implement their lesson plans in the classroom. In the observation stage, the instructor observes and videotapes the performance of the pre-service teachers and gives them feedback. One of the ways to improve the performance of the pre-service teachers through microteaching is to make a video recording of the teaching process. In the replan stage, each pre-service teacher prepares a new lesson plan for either the same subject or a different subject, with the aim of using the teaching skills more effectively in light of the comments and feedback of the instructor. In the reteach stage, the pre-service teachers implement their

revised lesson plan to a different but comparable group of students. In the last stage, the teaching practice of the pre-service teachers is again observed and videotaped by the instructor, who then evaluates their teaching performance according to the evaluation criteria. This is the most important component of microteaching aimed at changing the behaviors of pre-service teachers in the desired direction. Previous studies have indicated that microteaching improved pre-service teachers' teaching skills (Fernandez 2010; I'anson, Rodrigues & Wilson 2003; Kpanja 2001; Wilkinson 1996). Also, the results of studies on microteaching have shown that it improved pre-service teachers' emotions toward mathematics and mathematics teaching (Benton-Kupper 2001; Mergler & Tangen 2010; Peker 2009).

Mathematics teaching anxiety

Anxiety is ubiquitous to the human condition (Clark & Beck 2010). Barlow (2002, p.104) defined anxiety as a "future-oriented emotion, characterized by perceptions of uncontrollability and unpredictability over potentially aversive events and a rapid shift in attention to the focus of potentially dangerous events or one's own affective response to these events." Individuals who suffer from math anxiety may become nervous and unable to concentrate when confronted with mathematical situations (Tobias 1978). Students with mathematics anxiety have low self-confidence in their mathematics abilities, a fear of failing to understand mathematics concepts, negative attitudes toward mathematics, and a dread of mathematics (Bursal & Paznokas 2006). Mathematics anxiety is related to previous mathematics experiences and teachers (Frank 1990; Reyes 1984; Tobias & Weissbrod 1980). Many studies have shown that not only students but also teachers and pre-service teachers experience mathematics anxiety (Bursal & Paznokas 2006; Harper & Daane 1998; Tooke & Lindstrom 1998). Moreover, the findings of some studies have indicated that teachers with mathematics anxiety can transmit their anxiety and negative attitudes to their students (Bekdemir 2010; Kelly & Tomhave 1985; Wood 1988).

Teachers' mathematics anxiety affects their teaching practice and performance (Bush 1981). That is, mathematics anxiety and mathematics teaching anxiety are related to the performance of teachers (Brown, Westenskov & Mayer-Pakenham 2011). Teachers' anxiety is generally assumed to be a function of negative classroom stimulus situations, such as poor student discipline, inadequate working conditions, time pressures, and excessive curricular responsibilities (Wolton 1981). Teachers with high mathematics anxiety have been found to use more traditional teaching methods. These teachers devote more time to seatwork and whole-class instruction and less time to playing games, problem-solving, small-group instruction, and individualized instruction (Karp 1991). Previous studies have shown that pre-service teachers experience mathematics teaching anxiety (Bekdemir 2010; Ersen, Peker, Ertekin & Dilmac 2011; Jackson & Leffingwell 1999; Peker 2009).

Mathematics methods courses in teacher preparation programs have been found to be effective in reducing teacher candidates' mathematics anxiety and mathematics teaching anxiety (Gresham 2007; Reyes 1984; Sloan 2010; Tooke & Lindstrom 1998; Wolton 1981). For example, Tooke and Lindstrom (1998) investigated ways of reducing mathematics anxiety among pre-service elementary teachers. Their results showed that, compared to traditional mathematics teaching, a method course positively affected the math anxiety of the pre-service teachers. Harper and Daane (1998) analyzed math anxiety levels among elementary pre-service teachers before and after a mathematics methods course. Their findings revealed a significant reduction in the level of math anxiety at the end of the methods course. Sloan (2010) examined the effects of a standards-based mathematics methods course on the mathematics anxiety levels of pre-service teachers. The results showed a significant difference

between the pretest and the posttest mathematics anxiety levels of the pre-service teachers, indicating a decrease in mathematics anxiety from the onset of the mathematics methods course. Furthermore, some studies have shown that method courses positively affect mathematics teaching efficacy (Saçkes, Flevares, Gonya & Trundle 2012; Utley, Bryant & Moseley 2010). Utley, Bryant, and Moseley (2010) found that mathematics teaching efficacy was significantly increased by a mathematics method course.

Mathematics teaching self-efficacy

According to Bandura (1997, p. 3) "perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments." Teachers' self-efficacy beliefs affect their general orientation toward the educational process and their specific instructional activities. Teachers with a high sense of efficacy tend to view difficult students as reachable and teachable and to solve their learning problems by ingenuity and extra effort. However, teachers with low perceived efficacy tend to invoke low student ability as an explanation for why their students cannot be taught. Teachers' self-efficacy beliefs affect students' academic achievement, classroom activities, parental involvement, their social development, and the effective use of resources (Bandura 1997). Many studies have investigated teachers' self-efficacy beliefs (Bernadowski, Perry & Greco 2013; Gibson & Dembo 1984; Gotch & French 2013; Leader-Janssen & Rankin-Erickson 2013; Senler & Sungur 2010). Their findings indicate that high-efficacy teachers redirect students who work independently and answer their questions. Also, Saklofshe, Michaluk, and Randhawa (1988) found that pre-service teachers with a higher sense of efficacy do a better job of presenting lesson plans, drawing students into discussions, and managing their classrooms during the subsequent course of their training.

Mathematics teaching efficacy refers to teachers' beliefs in their ability to teach mathematics effectively (Enochs, Smith, & Huinker 2000). Bates, Latham, and Kim (2011) found that pre-service teachers who reported higher mathematics self-efficacy were more likely to feel confident in their ability to teach mathematics. Studies on the mathematics teaching efficacy of teachers and pre-service teachers have shown that mathematics teaching efficacy is related to self-efficacy, anxiety, and performance (Bates, Latham & Kim 2011; Briley 2012; Bursal 2010; Charalambos, Philippou & Kyriakide 2007; Moseley & Utley 2006; Philippou & Christou 2003; Saçkes, Flevares, Gonya & Trundle 2012; Utley, Bryant & Moseley 2010). A negative relationship has been reported between pre-service teachers' mathematics teaching anxiety and self-efficacy beliefs (Bursal & Paznokas 2006; Gresham 2008; Swars, Daane, & Giesen 2006; Yetkin 2003). Yetkin (2003) found that pre-service teachers' mathematics teaching self-efficacy beliefs represented only one variable that explained their mathematics teaching anxiety. Swars, Daane, and Giesen (2006) reported that pre-service teachers with the lowest degrees of mathematics anxiety had the highest levels of mathematics teaching efficacy. Bursal and Paznokas (2006) found that pre-service teachers with low mathematics anxiety had higher elementary school mathematics teaching confidence compared with those with high mathematics anxiety. Their results also showed a negative relationship between mathematics anxiety and mathematics teaching confidence: pre-service teachers with higher levels of math anxiety were less confident of their abilities to teach elementary mathematics.

The findings of empirical studies thus indicate the existence of relationships between mathematics, mathematics teaching anxiety, and self-efficacy beliefs. Further, studies on method courses have shown that such courses have an impact on pre-service teachers' mathematics teaching anxiety and self-efficacy beliefs. However, minimal research has been conducted to examine the effects of microteaching on mathematics teaching anxiety and the teaching self-efficacy beliefs of pre-service teachers. Mergler and Tangen (2010) conducted an

empirical study on the direct effects of microteaching on pre-service teachers' self-efficacy beliefs in teaching. The study applied a pretest/posttest and one-group experimental design and examined changes in the sense of self-efficacy of the participants over time. The results showed that microteaching, which was implemented in the Educational Psychology course, positively affected the pre-service teachers' self-efficacy beliefs in teaching. In addition, Peker (2009) investigated the effects of expanded microteaching on pre-service teachers' teaching anxiety. The findings showed that expanded microteaching decreased the teaching anxiety levels of the pre-service teachers. A few experimental studies have also investigated the effects of microteaching-based instruction on pre-service teachers' mathematics teaching anxiety and self-efficacy beliefs. The present study considered all the above-mentioned discussions on the importance of investigating the impact of microteaching based method course instruction on pre-service teachers' mathematics teaching anxiety and sense of self-efficacy compared with that of the traditional method course instruction. It will contribute to the literature on microteaching and elementary school mathematics teacher education by conducting a similar investigation, more specifically by seeking to answer the following research questions:

- Is there a significant difference in mathematics teaching anxiety between the experimental and control groups?
- Is there a significant difference in mathematics teaching sense of self-efficacy between the experimental and control groups?

Method

Research Design

A quasi-experimental design was used to find out the impact of microteaching-based method course instruction on pre-service teachers' mathematics teaching anxiety and sense of self-efficacy. In such design, the researcher has control over selecting and scheduling measures, how nonrandom assignment is executed, the kinds of comparison groups with which the treatment groups are compared, and some aspects of how the treatment is scheduled (Shadish, Cook & Campbell 2002). The subjects of the study were limited to pre-service teachers enrolled in the Methods of Teaching course. The experimental and control groups consisted of an equal number of students. At the beginning of the experiment, the Teachers' Sense of Efficacy Scale (TSES) and the Mathematics Teaching Anxiety Scale (MATAS) were administered to the pre-service teachers in the experimental and control groups as a pretest; at the end of the semester, the same instruments were applied to both groups as a posttest. The researcher planned and implemented microteaching in the experimental group for one semester (14 weeks) and served as the course instructor for both groups.

The study was carried out within the Elementary School Mathematics Teacher Preparation Program, which includes eight semesters of extensive fieldwork. This program prepares pre-service teachers for teaching mathematics to elementary school students. The pre-service teachers in the program take courses related to mathematics, learning, teaching methods, and evaluation. Upon graduation, they receive a Bachelor of Arts degree in Education and, after completing all certification requirements, an Elementary School Mathematics Teaching certificate. This study was implemented in the Methods of Teaching course in the third semester of the program. This course consists of objectives and content related to teaching methods, skills, and attitudes toward mathematics teaching.

Participants

The study subjects included 72 pre-service teachers in the Elementary School Mathematics Teacher Preparation Program at a public university in Turkey. None of the pre-service teachers had received any training on teaching methods, and all came from a similar sociocultural background. The pre-service teachers were randomly selected into and evenly divided between the experimental and the control group (36 members in each group). Females accounted for 75% of the pre-service teachers, whereas 25% were males.

Instruments

The Teachers' Sense of Efficacy Scale (TSES), developed by Tschannen-Moran and Woolfolk Hoy (2001), was used to determine the sense of self-efficacy of the pre-service teachers. The original scale includes 24 items under three subdimensions: Efficacy for Instructional Strategies, Efficacy for Classroom Management, and Efficacy for Student Engagement. Çapa, Çakıroğlu, and Sarıkaya (2005) translated and adapted this scale into a Turkish version, which consists of the same 24 items and three subdimensions in the original version. The reliability values of the scale are .82 for Efficacy for Student Engagement, .86 for Efficacy for Instructional Strategies, and .84 for Efficacy for Classroom Management. The reliability value of the whole scale is .93. The 9-point scale has values ranging from 1 (nothing) to 9 (a great deal). Many researchers have used this instrument to determine teachers' and pre-service teachers' sense of self-efficacy in teaching (Hoy & Spero 2005; Mergler & Tangen 2010; Milner & Hoy 2003; Wolters & Daugherty 2007).

The Mathematics Teaching Anxiety Scale (MATAS), developed by Peker (2006), was used to determine the mathematics teaching anxiety of elementary school mathematics pre-service teachers. This scale consists of 23 items under four subdimensions, including items related to content knowledge (10 items), self-efficacy belief (6 items), attitude toward mathematics (4 items), and mathematics teaching knowledge (3 items). Its internal consistency coefficient (Cronbach's alpha) is .91 for whole items, .90 for the first subdimension, .83 for the second subdimension, .71 for the third subdimension, and .61 for the fourth subdimension. The 5-point Likert-type has values ranging from 1 (strongly disagree) to 5 (strongly agree).

Procedure

In this study, microteaching activities were designed and implemented by considering the original microteaching model developed at Stanford by Allen and Ryan (1969). In the planning stage, the instructor explained the purpose and process of the microteaching practice to the pre-service teachers and presented the teaching performance standards related to the teaching skills of pre-service teachers. The model lesson plan designed by the instructor was presented and implemented at the beginning of the microteaching practice. The pre-service teachers selected an objective and subject from the Elementary School Mathematics Teaching Program implemented in Turkey. Then each pre-service teacher prepared a lesson plan involving teaching skills through which they could show their teaching performance on a particular subject related to elementary school mathematics. The instructor guided the pre-service teachers in preparing their lesson plans. In the second stage of the microteaching practice, the pre-service teachers implemented their lesson plans with a small group of students. The microteaching practice of each pre-service teacher took about 15 minutes, and their teaching performance was observed and videotaped by the instructor and other pre-service teachers. In the third stage, the instructor and pre-service teachers analyzed the observation records by considering the teaching performance criteria. The instructor gave

feedback to each pre-service teacher about his/her mathematics teaching performance. Also, the positive and negative teaching behaviors of each pre-service teacher were discussed with the other pre-service teachers who had observed the microteaching practice in the classroom. In the fourth stage, the pre-service teachers prepared a new lesson plan in light of the feedback of the instructor. The instructor provided guidance to the pre-service teachers on designing the new lesson plan. Each pre-service teacher implemented a revised version of his/her lesson plan and tried to improve his/her teaching performance. The teaching practice of each pre-service teacher was observed and recorded on video. In the final stage of the microteaching practice, the instructor evaluated the mathematics teaching performance of each pre-service teacher in light of the teaching performance criteria (see Appendix).

In the control group, the instructor presented the theoretical bases of the Teaching Method course subjects by using methods such as lecturing, questioning, and discussion. During the teaching in the control group, methods such as dramatization, problem-solving, and demonstration were applied to the mathematics teaching practice under the guidance of the instructor. The pre-service teachers in the control group designed lesson plans but did not implement these. They attended mathematics teaching practices and activities as students; however, they did not perform microteaching activities and play the role of a teacher.

Data Analysis

Mixed factorial ANCOVA was used to evaluate the effects of microteaching-based method course instruction on the mathematics teaching anxiety of pre-service teachers when the sense of self-efficacy was controlled. ANCOVA evaluates whether the population means of any dependent variable are equal across the levels of a categorical independent variable by statistically controlling for the effects of other continuous variables that are not of primary interest, known as covariates (Keppel 1991). Repeated measures ANOVA was applied to determine the effects of microteaching-based method course instruction on the pre-service teachers' sense of self-efficacy. This method provides different ANOVA procedures for when the same measurement is made several times for each subject or when the same measurement is made for several related subjects (Leech, Barrett & Morgan 2008). In this study, microteaching-based method course instruction was determined as the independent variable, and mathematics teaching anxiety and sense of self-efficacy were determined as dependent variables. Also, sense of self-efficacy was determined as a covariate variable.

Results

Mathematics Teaching Anxiety of Pre-service Teachers

The descriptive statistics of the mathematics teaching anxiety pretest and posttest are given in Table 1.

Table 1
Means and Standard Deviations of The Mathematics Teaching Anxiety Pre-Test And Post-Test Scores

Time	Groups	N	M	SD
Pre-test	Experimental	36	53.05	7.50
	Control	36	52.36	14.91
	Total	72	52.70	11.72
Post-test	Experimental	36	50.38	9.95
	Control	36	51.97	10.48
	Total	72	51.18	10.18

The results related to mixed factorial ANCOVA are given in Table 2.

Table 2
Mixed Factorial ANCOVA Results for the Effects of Time, Groups and Sense of Self-Efficacy on Mathematics Teaching Anxiety

Source	*df*	Mean Square	F	p	*Partial μ²*
Within-subjects effects					
Time	1	74.049	.92	.338	.013
TimeXGroup	1	23.783	.29	.587	.004
Time X Self-efficacy	1	104.340	1.30	.256	.019
Error	70	79.68			
Between-subjects effects					
Group	1	31.357	.230	.633	.003
GroupXSelf-efficacy	1	2074.146	15.22	.000	.181
Error	70	136.222			

Mixed factorial ANCOVA was conducted to assess whether there were time and group differences in the mathematics teaching anxiety of the pre-service teachers when sense of self-efficacy was controlled. The results showed that both time and group had no significant effect on mathematics teaching anxiety when the effects of self-efficacy were taken into account (time: F (1, 70) = 0.92, p> .05, partial eta μ^2 = .01; group: F (1, 70) = 0.29, p> .05, partial eta μ^2 =.001). However, self-efficacy as a covariate variable had a significant effect on mathematics teaching anxiety (F (1, 70) = 15.22, p< .05, partial eta μ^2 = .18). There was no significant decrease in the mathematics teaching anxiety of the pre-service teachers from pretest to posttest. The results also showed that the pre-service teachers in the experimental and control groups had similar levels of mathematics teaching anxiety after controlling for the effect of their self-efficacy scores. In other words, microteaching did not cause a significant difference in the pre-service teachers' mathematics teaching anxiety when compared with the instruction in the control group.

Sense of self-efficacy in the teaching of pre-service teachers

The descriptive statistics of the sense of self-efficacy in teaching pretest and posttest are given in Table 3.

Table 3
Means and Standard Deviations of the Sense of Self-Efficacy in Teaching Pre-Test and Post-Test Scores

Time	Groups	N	M	SD
Pre-test	Experimental	36	111.22	13.83
	Control	36	111.08	16.94
	Total	72	111.15	15.35
Post-test	Experimental	36	138.03	24.65
	Control	36	130	19.38
	Total	72	134.01	22.38

The results related to repeated-measures of ANOVA are given in Table 4.

Repeated measures ANOVA was conducted to assess whether there were time and group differences in the sense of self-efficacy of the pre-service teachers. The results showed that time had a significant effect on sense of self-efficacy in teaching (F (1, 70) = 76.13, p< .05, partial eta μ^2 = .52) but group did not (F (1, 70) = 1.23, p> .05, partial eta μ^2 =.01).

Table 4
Repeated Measures of ANOVA Results for the Effects of Time and Groups on Sense of Self-Efficacy in Teaching

Source	*df*	Mean Square	F	p	*Partial μ²*
Within-subjects effects					
Time	1	18814.69	76.313	.000	.52
TimeXGroup	1	560.11	2.27	.136	.03
Error	70	246.546			
Between-subjects effects					
Group	1	600.256	1.23	.269	.01
Error	70	163.90			

There was a significant increase in the pre-service teachers' sense of self-efficacy in teaching mathematics from pretest to posttest. However, the results indicated that the pre-service teachers in both the experimental and control groups had similar degrees of sense of self-efficacy in teaching mathematics. From these results, it can be inferred that the pre-service teachers in the experimental group did not have a significantly higher sense of self-efficacy in teaching mathematics compared to those in the control group. In other words, microteaching-based method course instruction did not have a significant impact on the pre-service teachers' sense of self-efficacy in teaching mathematics compared with the instruction in the control group.

Discussion, Conclusion & Implementation

The aim of this study was to determine the effects of microteaching-based method course instruction on the mathematics teaching anxiety and sense of self-efficacy of pre-service teachers. The findings revealed that, compared with the instruction in the control group, microteaching did not affect the mathematics teaching anxiety of the pre-service teachers. The reason for the similar levels of mathematics teaching anxiety found in the experimental and control groups might be related to the pre-service teachers' teaching experience and low mathematics teaching anxiety at the beginning of the study. The pre-service teachers in both groups did not have any previous mathematics teaching experiences in school. Those in the experimental group designed and implemented a teaching plan; however, they acquired limited and unrealistic mathematics teaching experience through the microteaching practice. Microteaching may increase teaching anxiety because teaching in front of peers is not a common practice during lectures. However, such lectures are required in the microteaching sessions to teach a part of the course and as a means to share learning (Donnelly & Fitzmaurice 2011). Thus, pre-service teachers could come to know the challenges of teaching through microteaching (Fernandez 2005). In this study, the pre-service teachers in the control group designed a teaching plan but did not implement it. In addition, the pre-service teachers in both groups did not have negative mathematics teaching experiences and did not know the complexities of teaching. As a result, their low levels of mathematics teaching anxiety did not change at the end of the study. Teaching anxiety is related to the teaching experiences of pre-service teachers (Brown, Westenskow & Mayer-Packenham 2012). Negative experience is one of the sources of anxiety (Clark & Beck 2010). Moyer-Packenham, Westenskow, and Brown (2011) reported that pre-service teachers' mathematics teaching anxiety is not directly related to their previous experiences. However, even pre-service teachers who have low mathematics teaching anxiety might have high anxiety in teaching mathematics to their pupils.

The low mathematics teaching anxiety of the pre-service teachers in the experimental and control groups at the end of the study might be related to their learning experiences in the Method course. Some studies have indicated that method courses positively affect the

mathematics anxiety and mathematics teaching anxiety of pre-service teachers (Gresham 2007; Harper & Daana 1998; Sloan 2010; Tooke & Lindstrom 1998). In this study, microteaching was not found to be more effective in decreasing mathematics teaching anxiety compared to the instruction in the control group. This result is not consistent with the findings of Peker (2009), who reported that microteaching was more effective in decreasing the mathematics teaching anxiety of pre-service teachers compared to the traditional teaching done in a control group. Peker conducted the study in the Teaching Practice course among pre-service teachers in their last semester. The participants had actual teaching experiences with pupils in the elementary schools and might have had high teaching anxiety at the beginning of study. The pre-service teachers' positive teaching experiences acquired through microteaching in the Teaching Practice course might have resulted in a decrease in teaching anxiety, compared with the traditional teaching in the control group.

The results of this study showed a significant increase in the pre-service teachers' sense of self-efficacy in teaching mathematics from pretest to posttest. Thus, it can be inferred that the teaching in both the experimental and control groups could positively affect the sense of self-efficacy of pre-service teachers. The pre-service teachers in both groups had learning experiences on teaching principles, teaching methods, and designing a teaching plan, which might be the reasons for the increase in their confidence and sense of self-efficacy in teaching mathematics. The findings are parallel with the literature indicating that method courses improve the self-efficacy beliefs of pre-service teachers (Moseley & Utley 2006; Saçkes, Flevares, Gonya & Trundle 2012; Utley, Moseley & Bryant 2010). Bandura (1997) reported that an active mastery experience is one of the principal sources of self-efficacy beliefs. Leader-Janssen and Rankin-Erickson (2013) found a relationship between content knowledge, learning experiences, and self-efficacy beliefs. Thus, pre-service teachers had an active mastery experience and knowledge in the method course.

The findings of this study indicated that the pre-service teachers in both the experimental and control groups had a similar sense of self-efficacy in teaching mathematics. On this basis, it can be inferred that the pre-service teachers in the experimental group did not have a significantly higher sense of self-efficacy in teaching mathematics compared to those in the control group. In other words, compared with the instruction in the control group, microteaching did not have a significant impact on the pre-service teachers' sense of self-efficacy in teaching mathematics. This finding is not consistent with the results of experimental studies indicating that microteaching is an effective method for increasing the self-efficacy beliefs of pre-service teachers (Benton-Kupper 2001; Mergler & Tangen 2010). For example, Mergler and Tangen (2010) conducted an experimental research to investigate the effect of microteaching on the sense of self-efficacy of pre-service teachers. They found that microteaching increased the pre-service teachers' sense of self-efficacy in mathematics teaching. However, their study did not include any control group for comparing microteaching with the instruction in a control group in terms of effects on sense of self-efficacy in teaching.

The present study showed that microteaching did not have a greater impact on the pre-service teachers' sense of self-efficacy in mathematics teaching compared to the instruction in the control group. The pre-service teachers in the experimental group taught mathematics to their peers over a limited time (about 15-20 minutes) through microteaching. Thus, their limited microteaching experiences might not have had significant impact on their sense of self-efficacy in mathematics teaching compared to the experience of the pre-service teachers in the control group. Microteaching is implemented among limited students and over a limited time in an artificial classroom environment (Donnelly & Fitzmaurice 2011). According to

Bandura (1997), experiences are important for self-efficacy beliefs; thus, pre-service teachers should acquire more mathematics teaching experiences through microteaching.

The findings of this study showed that sense of self-efficacy had an effect on mathematics teaching anxiety as a covariate variable. Earlier empirical studies have shown a negative relationship between mathematics teaching anxiety and self-efficacy among pre-service teachers (Bursal & Paznokas 2006; Gresham 2008; Swars, Daane, & Giesen 2006). In addition, previous negative mathematics experiences of pre-service teachers result in low self-efficacy in mathematics teaching (Swars 2005; Swars, Daane & Giesen 2006). Researchers interested in the mathematics teaching anxiety of pre-service teachers should thus statistically control for the effects of mathematics and teaching self-efficacy on anxiety as a covariate variable.

In conclusion, this study showed that microteaching-based method course instruction did not have a significant impact on the pre-service teachers' mathematics teaching anxiety and sense of self-efficacy when compared with the instruction in the control group. This finding has several implications. First, teacher educators who implement microteaching should enable pre-service teachers to acquire more mathematics teaching experience to increase their self-efficacy in mathematics teaching and decrease their mathematics teaching anxiety. However, the original microteaching model developed by Allen and Ryan (1969) includes only two stages in which pre-service teachers can have teaching experience. Researchers interested in microteaching should thus develop a new microteaching model that will include more opportunities to acquire teaching experience. Second, in this study, the pre-service teachers in the experimental group did not teach mathematics in a real classroom environment. Teacher educators and researchers should enable pre-service teachers to teach mathematics among pupils in a real classroom environment to help improve their self-efficacy beliefs in mathematics teaching through field experiences (Leader-Janssen & Rankin-Erickson 2013). Third, the subjects of this study were sophomore students enrolled in the Method course in the second year of the teacher preparation program implemented in Turkey. These students had not taken any teaching method course and did not have any mathematics teaching experience; thus, their teaching anxiety was low. To find out the effects of microteaching on pre-service teachers' mathematics teaching anxiety and self-efficacy, teacher educators should implement microteaching among final-year students who have acquired field experience. Finally, in this study, the researcher did not control for the pre-service teachers' mathematics anxiety and self-efficacy beliefs. Brown, Westenskow, and Moyer-Pakenham (2004) reported relationships between mathematics anxiety, self-efficacy, and mathematics teaching anxiety. Researchers seeking to investigate the effects of microteaching should therefore consider the role of mathematics anxiety and self-efficacy for mathematics teaching anxiety. Also, some studies have indicated a relationship between teaching performance, teaching anxiety, and self-efficacy (Fernandez 2010; Kpanja 2001; Wilkinson 1996). Therefore, researchers should consider the role of pre-service teachers' mathematics teaching performance in mathematics teaching anxiety and self-efficacy. Experimental studies should also be done to investigate the effects of microteaching on the teaching performance of pre-service teachers. Researchers should study the effects of microteaching on not only pre-service teachers' but also in-service teachers' mathematics teaching anxiety, self-efficacy, and performance. In this study, the researcher was the instructor of the microteaching-based method course. In future studies, microteaching should be implemented in similar groups by different instructors to eliminate the effects of instructor bias in the results.

References

Allen, D. & A. Eve, A. (1968). Microteaching. *Theory into Practice*, *7*(5), 181-185.

Allen, D. & Ryan, K. (1969). *Microteaching.* Reading, Massachusetts: Addicson-Wesley Publishing Company.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review, 84*, 191–215.

Bates, A., Latham, N. & Kim, J. (2011). Linking pre-service teachers' mathematics self-efficacy and mathematics teaching efficacy to their mathematical performance. *School Science and Mathematics, 111*(7), 35-333.

Bekdemir, M. (2010). The pre-service teachers' mathematics anxiety related to depth of negative experiences in mathematics classroom while they were students. *Education Studies Mathematics, 75,* 311–328.

Benton-Kupper, J. (2001). The microteaching experience: Student perspectives. *Education 121*(4), 830-835.

Bernadowski, C., Perry, R. & Greco, R. (2013). Improving pre-service teachers' self-efficacy through service learning: Lessons learned. *International Journal of Instruction, 6*(2), 76-86.

Borlow, D. H. (2002). *Anxiety and its disorders: The nature and treatment of anxiety and panic* (2nd ed.). New York: Guilford Press.

Briley, J. (2012). The relationships among mathematics teaching efficacy, mathematics self-efficacy, and mathematical beliefs for elementary pre-service teachers. *Issues in the Undergraduate Mathematics Preparation of School Teachers, 5*, 1-13.

Brown, A. B., Westenskow, A. & Moyer-Packenham, P. S. (2012). Teaching anxieties revealed: pre-service elementary teachers' reflections on their mathematics teaching experiences. *Teaching Education, 23*(4), 365–385.

Brown, A. B., Westenskow, A., & Moyer-Pakenham, P. S. (2011). Elementary pre-service teachers: Can they experience mathematics teaching anxiety without having mathematics anxiety? Issues in the *Undergraduate Mathematics Preparation of School Teachers: The Journal, 5*, 1–14.

Bursal, M., & Paznokas, L. (2006). Mathematics anxiety and pre-service elementary teachers' confidence to teach mathematics and science. *School Science and Mathematics, 106*, 173–180.

Bursal, M. (2010). Turkish pre-service elemertary teachers' self-efficacy beliefs regarding mathematics and science teaching. *International Journal of Science and Mathematics, 8(*4), 649-666

Bush, L. R. (1981). Some thoughts for teachers on mathematics anxiety. *Arithmetic Teacher, 29*(4), 37-39.

Charalambos, Y. C., Philippou, G. & Kyriakide, L. (2007). Tracing the development of pre-service teachers' efficacy beliefs in teaching mathematics during fieldwork. *Education Studies Mathematics, 67*, 125–142.

Clark, D. & Beck, A. (2010). *Cognitive Therapy of Anxiety Disorders.* New York: The Guilford Press.

Çapa, Y., Çakıroğlu, J. & Sarıkaya, H. (2005). The development and validation of a Turkish version of the teachers' sense of efficacy scale. *Education and Science, 30* (137), 74-81.

Donnelly, R. & Fitzmaurice, M. (2011). Towards productive reflective practice in microteaching. *Innovations in Education and Teaching International, 48*(3), 335–346.

Duncan, M. J. & Biddle, B. J. (1974). *The Study of Teaching.* New York: Holt, Rinehart & Winston.

Enochs, L. G., Smith, P. L., & Huinker, D. (2000). Establishing factorial validity of the mathematics teaching efficacy beliefs instrument. *School Science and Mathematics, 100*, 194–202.

Ersen, E., Peker, M., Ertekin, E. & Dilmac, B. (2011). Is there a relationship between pre-service teachers' mathematical values and their teaching anxiety in mathematics. *Electronic Journal of Research in Educational Psychology, 9*(1), 263-282.

Farris, R. (1991). Micro-peer teaching: Organization and benefits. *Education, 111*(4), 559-562.

Fernandez, M. L. (2005). Learning through microteaching lesson study in teacher preparation. *Action in Teacher Education, 26*, 37-47.

Fernandez, M. L. (2010). Investigating how and what prospective teachers learn through microteaching lesson study. *Teaching and Teacher Education, 26*, 351-362.

Frank, M. L. (1990). What myths about mathematics are held and conveyed by teachers? *Arithmetic Teacher, 37* (5), 10-12.

Gibson, S. & Dembo, M. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology, 76*(4), 669-682.

Gotch, C. M. & French, B. (2013). Elemertary teachers' knowledge and self-efficacy for measurement concepts. *The Teacher Educator, 48*, 46-57.

Gresham, G. (2007). A Study of Mathematics Anxiety in Pre-Service Teachers. *Early Childhood Education Journal, 35*(2), 181-188.

Gresham, G. (2008). Mathematics anxiety and mathematics teacher efficacy in elementary pre-service teachers. *Teaching Education, 19*(3), 171-184.

Harper N. W., & Daane, C. J. (1998). Causes and reduction of math anxiety in pre-service elementary teachers. *Action in Teacher Education, 19*(4), 29- 38.

Hoy, W. A. & R. B. Spero, R. B. (2005). Changes in teacher efficacy during the early years of teaching: A comparison of four measures. *Teaching and Teacher Education, 21*(4), 343-356.

I'anson, J., Rodrigues, S. & Wilson, G. (2003). Mirrors, reflections and refractions: the contribution of microteaching to reflective practice. *European Journal of Teacher Education, 26* (2), 189-199.

Jackson, C. D., & Leffingwell, R. J. (1999). The role of instructors in creating math anxiety in students from kindergarten through college. *Mathematics Teacher, 92*(7), 583.

Leader-Jansson, E. & Rankin-Erickson, J. (2013). Pre-service teachers' content knowledge and self-efficacy for teaching reading. *Literacy Research and Instrution, 52,* 204-229.

Karp, K. S. (1991). Elementary school teachers' attitudes towards mathematics: The impact on students' autonomous learning skills. *School Science and Mathematics, 91*, 265-270.

Kelly, W. & Tomhave, W. (1985). A study of math anxiety/math avoidance in pre-service elementary teachers. *Arithmetic Teacher, 32*(5), 51-53.

Keppel, G. (1991). *Design and analysis: A researcher's handbook.* Englewood Cliffs: Prentice-Hall, Inc.

Kpanja, E. (2001). A study of the effects of video tape recording in microteaching training. *British Journal of Educational Technology, 32*(4), 483-486.

Leader-Janssen, E. & Rankin-Erickson, J. (2013). Pre-service Teachers' Content Knowledge and Self-Efficacy for Teaching Reading, *Literacy Research and Instruction, 52*, 204–229.

Leech, N.L., Barret, K. C. & Morgan, G. (2008). *SPSS for Intermediate Statistics.* New York: Third Edition. Psychology Press.

Mergler, A. G. & Tangen. D. (2010). Using microteaching to enhance teacher efficacy in pre-service teachers. *Teaching Education, 21*(2), 199-210.

Milner, H. R. & Hoy. A. W. (2003). A case study of African American teachers' self-efficacy, stereotype threat, and persistence. *Teaching and Teacher Education, 19*(2), 263-276.

Moseley, C. & Utley, J. (2006). The Effect of an Integrated Science and Mathematics Content-Based Course on Science and Mathematics Teaching Efficacy of Pre-service Elementary Teachers. *Journal of Elementary Science Education, 18* (2),1-12.

Orlich, D., Kauchak, D. P., Harder, R., Pendergrass, R. A., Callahan, R., Keogh, A. & Gibson, H. (1990). *Teaching Strategies*: Toronto. Third Edition. D.C. Heat and Company.

Peker, M. (2006). The development of mathematics teacher anxiety scale. *Educational Science and Practice, 59*, 73-92.

Peker, M. (2009). The use of expanded microteaching for reducing pre-service teachers' teaching anxiety about mathematics. *Scientific Research and Essay, 4*(9), 872-880.

Philippou, G. & Christou, C. (2003). A study of the mathematics teaching efficacy beliefs of primary teachers. *Mathematics Education Library, 31*, 211-231.

Reyes, L. H. (1984). Affective variables and mathematics education. *The Elementary School Journal, 84,* 558-584.

Saçkes, M., Flevares, L., Gonya, J. & Trundle, K. (2012). Pre-service early childhood teachers'sence of efficacy for integrating mathematics and science: ımpact of a Methods Course. *Journal of Early Childhood Teacher Education, 33*, 349-364.

Saklofshe, D., Michaluk, B.,& Randhawa (1988). Teachers' efficacy and teaching behaviors. *Psychological Report, 63,* 407-414.

Senler, B. & Sungur, S. (2010). Pre-service science teachers' teaching self-efficacy: a case from Turkey. *Procedia Social and Behavioral Sciences, 9*, 771–775.

Shadish, W., Cook, T. & Cambell, D. (2002). *Experimental and Quasi-Experimental Deigns for Generalized Causal Inference.* Boston: Houghton Mifflin Company.

Sloan, T. R. (2010). The effects of a standards-based mathematics methods course on the mathematics anxiety levels of pre-service teachers*. The Educational Forum, 74*, 242–56.

Swars, S. L. (2005). Examining perceptions of mathematics teaching effectiveness among elementary pre-service teachers with differing levels of mathematics teacher efficacy. *Journal of Instructional Psychology, 32*, 139–147.

Swars, S. L, Daane, C. J., & Giesen, J. (2006). Mathematics anxiety and mathematics teacher efficacy: What is the relationship in elementary pre-service teachers? *School Science and Mathematics, 106,* 306–315.

Tobias, S. (1978). *Overcoming mathematics anxiety.* New York: W.W. Norton.

Tobias, S., & Weissbrod, C. (1980). Anxiety and mathematics: an update. *Harvard Educational Review, 50*(1), 63-70.

Tooke, J. & Lindstrom, L. (1998). Effectiveness of a Mathematics Methods Course in Reducing Math Anxiety of Pre-service Elementary Teachers. *Science and Mathematics, 98*(3), 136-139.

Tschannen-Moran, M. & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17,* 783–805.

Utley, J., Moseley, C. & Bryant, R. (2010). Relationship between science and mathematics teaching efficacy of pre-service elementary teachers. *School Science and Mathematics, 105*(2), 82-87.

Wilkinson, G. A. (1996). Enhancing microteaching through additional feedback from pre-service administrators. *Teaching and Teacher Education, 12*, 211-221.

Wolters, C. A. & Daugherty, S. G. (2007). Goal structures and teachers' sense of efficacy: Their relation and association to teaching experience and academic level. *Journal of Educational Psychology, 99*(1), 181-193.

Wolton, J. (1981). Biofeedback: A proposed model for the treatment of teacher anxiety. *The Person and Guidance Journal, 60*(1), 59-62.

Wood, E. (1988). Math anxiety and elementary teachers: What does research tell us? For the *Learning of Mathematics, 8*(1), 8–13.

Yetkin, E. (2003, October). *Self-efficacy and prior experiences as predictors of prospective teachers' teaching anxiety.* Paper presented at the Annual Meeting of the Mid-Western Educational Research Association, Columbus. Abstract retrieved from http://web.ebscohost.com/ehost/detail?vid=9&sid

Curriculum development for university-industry collaborations with a comparative analysis on master of industrial product design education in İzmir Institute of Technology and Linnaeus University

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Abstract

University-industry collaboration (UIC) provides not only effective training for students but also knowledge production in universities for industry to contribute economy (Bektaş, Ç., Tayauova, G., 2013). The paper purpose to analyze reasons of deficiencies in UIC with comparative analysis of curriculum of industrial design (ID) department of Izmir Institute of Technology (IZTECH) and Linnaeus University (LNU), and taking feedback from industry. As a comparative analysis of curriculum, ID programs in IZTECH and LNU were examined to understand differences and similarities.To develop UIC for IZTECH, LNU was accepted as an example, then they were compared according to their curriculum. For comparison of ID courses, taxonomy method in the National Association of Schools of Art and Design (NASAD) Handbook 2014-2015 was used. There are three categories for design courses which are professional design practice (PDP), design studies (DS), and design thinking(DT). Within the scope of curriculum development for university-industry collaboration, feedback were taken from companies which has design department or employer of new ID graduates. For this purpose, surveys were sent to different companies. As a result of curriculum analysis and survey with industry, courses, which need to be developed, belong to PDP and DT groups which are more practice and teamwork based. A solution can be adding new courses to curriculum which contain more teamwork, innovative and collaborative activities, also, content of existing courses can be developed on DT characteristics.

Keywords: Industrial product design education, curriculum, master's degree program, comparative analysis, LNU, IZTECH, university-industry collaboration.

Introduction

In industry, companies can take many advantages of university collaborations in terms of regular activities, innovation and new design. Moreover, universities also turn their theoretical knowledge to practical. University industry collaboration (UIC) is established on transfer of knowledge and technology between them (Ankrah & Al- Tabbaa, 2015). After industrialization age, using knowledge became more important than producing it. With the knowledge age, universities are the main knowledge producers, and knowledge which they produced academically or culturally, and use of it by industry is the matter (Yüksel & Cevher, 2014). When both university and industry's expectations coincide with each other, then UIC is resulted better and easier. Responsibilities and expectations of universities can be defined as providing education, renewing their scholars, contributing to development of science and publishing their result, supporting their scholars for research and academic studies. In term of industry, these are defined like that technological knowledge needs should be satisfied for

market, production of solution for industrialist's problems about manufacturing and support manufacturing, development of product quality, and manufacturing more standardized product. As a result of these responsibilities and expectations, universities produce science and knowledge, then industries are interested in results' studies of universities (Yücel, 1997). As Ankrah and Al-Tabbaa mentioned, motivations of universities and industries can be examined under six topics such as; necessity, reciprocity, efficiency, stability, legitimacy, and asymmetry. Necessity is the same definition for both as a motivation which is being responsible to policies of government and other strategic institutional. Reciprocity can be explained that universities can reach facilities and equipment in companies, when the companies can access to students for summer internship or part-time job opportunities. Thanks to UIC, new graduates find employment opportunities in companies, and industries hire faculty members for consultation. Efficiency is the third motivation for both university and industry. Universities can access funding for their research and further studies, obtain patents and be gained personal finance for academics. Furthermore, companies make university-based technologies commercialize and turn them profit. When foreign technology is wanted to use, companies should take license for it. However, thanks to patents which are produced by universities, companies do not need to exploit foreign technology, and it is much more easier and cheaper. Another saving in term of economics for companies is tax exemptions and grants. Moreover, companies increase their technological capacity and take better place in competitive markets thanks to UIC projects, they also develop their human capital with educated new graduates according to their need. Stability is the motivation which has the largest amount of results for not only universities but also companies that start growing with new knowledge which is produced by UIC, as a result of UIC they shift in knowledge based economy. Universities take opportunity to discover new knowledge, test them and publish more papers, while companies make their business grow, access new knowledge and technology. Students can find solutions to practical problems and applied technologies of companies which do not need in house R&D thanks to UIC. Legitimacy motivate not only universities to contribute regional or national economy, service to the industries, increase academics and their achievements' recognition, but also companies to enhance to their corporate image. As a last motivation, asymmetry supports companies to continue controlling patented technologies (Ankrah & Al- Tabbaa, 2015).

UIC has several results (Wilson, 2012, p.13,14):

- Collaboration between university and industry is resulted with progression at many level and exchange of knowledge.
- As a result of collaboration projects, companies have opportunity to find worker candidates who are new graduates, but have knowledge about sector and companies works.
- Students have opportunity to use their theoretical knowledge into practical experience.
- The companies get more theoretical knowledge, and universities can make them expert on any new concept.

Method

Purpose of Study

The paper purpose to analyze reasons of deficiencies in UIC with comparative analysis of curriculum of industrial design department of Izmir Institute of Technology (IZTECH) and Linnaeus University (LNU), and taking feedback from industry. Early phase of the research was realized at LNU- Sweden between September and December 2012 with the support of the Turkish Higher Education Council Grant. After all these analysis on curriculum and industry, the main aim is developing curriculum to efficient UIC.

According to European Commission Innovation Scoreboard 2013 publication, Turkey is the modest innovators, but it has strengths in terms of number of innovators and economic effects (EC, 2014). However, gross domestic spending (GDS) on R&D numbers in OECD reports shows that in last 10 years between 2004 and 2013, there is increment as seen Figure 1. According to the same figure, Sweden has no continuous raise in GDS on R&D numbers, but they are always much lower than Turkey's.

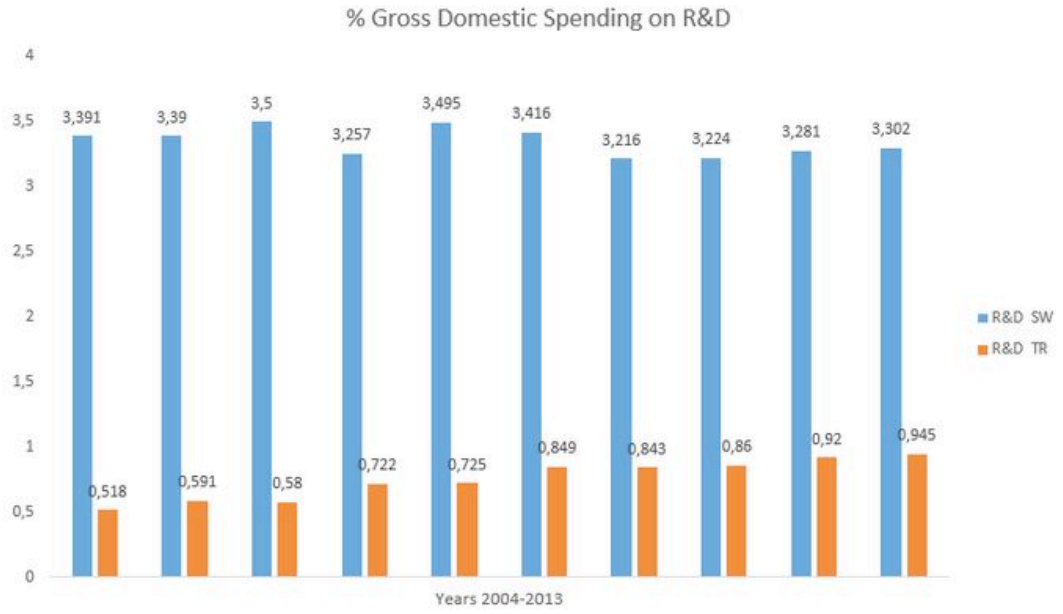


Figure 1. OECD (2015), Gross domestic spending on R&D (indicator). doi: 10.1787/d8b068b4-en (Accessed on 28 September 2015)

Triadic patent family numbers show that innovator residents of the country registered the patent with the date of the first application (OECD, 2015). As seen Figure 2, there is a development for Turkey but its number of registered patent are not enough to catch Sweden even though there is drop in its number of patents.

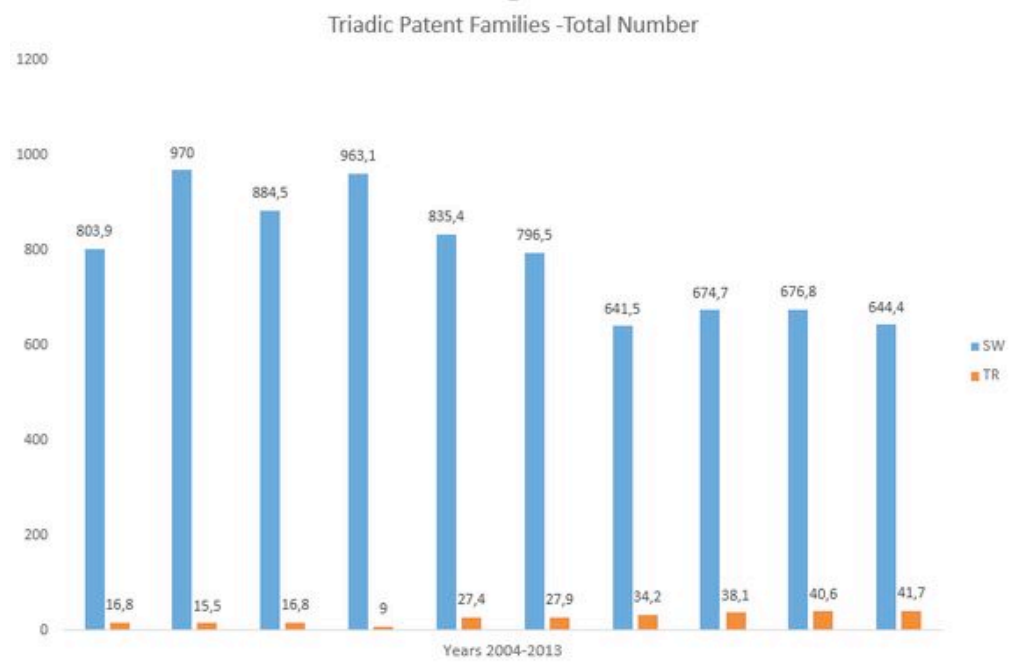


Figure 2. OECD (2015), Triadic patent families (indicator). doi: 10.1787/6a8d10f4-en (Accessed on 28 September 2015)

UIC contributes the economic success of manufacturing organizations, because companies' success in their R&D activities also support their success in marketing, design and manufacturing together (Kotler,2000; Bruce&Bessant, 2002). Universities and companies have different missions and cultures. However, UIC provides that they bring their problems and difficulties, and when these are solved, both side of UIC is to be gained (Lambert, 2003). UIC contributes to design students training in terms of innovation, identifying problems, producing solutions, working in teams, and coordinating team activities (Spellmeyer & Weller, 2003).

In the view of these information, importance of UIC can be understood for design students. Thus, improvement of UIC in IZTECH industrial design department was purposed. For this purpose, there are two methods were used. First method is the comparative analysis of IZTECH and LNU, and second one is to take feedback from design departments of companies.

One of the reason to choose LNU for comparative analysis is that both universities have engineering and architecture based industrial design education tradition. Education is in English at both universities. Moreover, collaboration between LNU and IKEA is the multidisciplinary and collaborative project example which include research and education about life at home. In this project, business administration, industrial design, engineering and wood technologies researchers worked together. LNU has significant importance for IKEA in terms of employable educated human source, experts and producing result of researches. The Bridge Program, which is the name of UIC between LNU and IKEA, determines the education program in economics, technology, and design departments.

Comparative Analysis

In this section, curriculums of industrial design departments at IZTECH and LNU are analyzed according to NASAD. The aim is to identify similarities and differences between two industrial design program, so deficiencies and strengths for UIC in IYTE can be defined after the analysis.

According to NASAD Handbook 2014, practice, study and action are three area of design, and each institution purposes to give design education with one or more focusing area of three. Their focus determine the aims, programs' details, levels of engagement, and requirement of resources for success. Courses of industrial design department are divided into three subjects which are professional design practice (PDP), design studies (DS) and design thinking (DT).

PDP courses aim to develop skills, knowledge and inclinations to design communication, products, environments and services for today and future. DS courses contains research and critical analysis about how design affects people, their activities, and places. They also study effects of design on physical, cognitive, social, cultural, technological, and economic aspects of context. Content of DT courses are process oriented like visualization, prototyping, etc. and problems of these subjects solving (NASAD Handbook 2014, 2015).

In Table 1, courses of industrial design departments in LNU and IZTECH are divided into categories of PDP, DS and DT according to their course content. Tables also contains information of credit and mandatory or elective.

Courses under PDP category teach basic skills such as computer aided design, basic material and manufacturing technologies, and presentation. In addition to PDP characteristic, DT characteristic makes courses more advanced like concept development or problem analysis and solving.

Table 1
Taxonomy of Industrial Design Courses at LNU and IZTECH According to NASAD Handbook 2014

University	Courses	Credit	Category	Mandatory/ Elective
LNU	Local Innovation	22,5	PDP+DS+DT	M
	Methods at work	7,5	DS	M
	Innovation for Global Impact	22,5	PDP+DT	M
	Action Research and Interactive Methods	7,5	PDP+DS	M
	Material Culture and practices	7,5	PDP+DS	E
	Philosophy of Science with emphasis on Design	7,5	DS	E
	Methods for exploration	7,5	DS	E
	Articulation	4,5	PDP	E
	Seminar Series 1	3	DS	E
	Human Centered Desgin, processes, methodology	7,5	PDP+DT	E
	Design, advanced study 1	7,5	PDP+DT	E
	Design, advanced study 2	7,5	PDP+DT	E
	Design theory, advanced study	4,5	DS+DT	E
	Seminar Series 2	3	DS	E
	Co-operatice design work, methodology, deepened studies	7,5	PDP+DS+DT	E
	Design in practice advanced study 1	7,5	PDP+DT	E
	Design advanced study 1	7,5	PDP+DT	E
	Design work advanced studies project	12	PDP+DT	E
	Seminar series 3	3	DS	E
	Degree project	30	PDP+DS+DT	M
IZTECH	Industrial Design Studio	8	PDP+DT	M
	Reseach Methods in ID	6	PDP+DS	M
	Advanced Product Development	8	PDP+DT	M

	Seminar	6	DS	M
	Consumption Trends and Material Culture	8	DS	E
	Evoluation of Communication Tools	8	DS	E
	Evoluation at Design	8	DS	E
	Material Science and Manufacturing Technologies	8	PDP	E
	Design Management	8	PDP+DT	E
	Ergonomi and Human Factor in Design	8	PDP	E
	Design Engineering	8	PDP	E
	Communication Design	8	DS	E
	Semiotics in Design	8	DS	E
	Sustainable Design	8	DS	E
	Product Innovation	8	PDP+DT	E
	Philosophical Context of Design Research	8	DS	E
	Fashion Concept in Design	8	DS	E
	Industrial and Graphic Photography	8	PDP	E
	Cinema and Design	8	DS	E
	Packaging Design	8	PDP+DT	E
	Furniture Design	8	PDP+DT	E
	Computer aided product design 1	8	PDP	E
	Computer aided product design 2	8	PDP	E
	New Product Design	8	DS+DT	E
	Time and Space Design in Transnational Cinema	8	DS	E
	Special Topics in Industrial Design	8	DS	E
	Special Studies	4	PDP+DS	M
	Special Topics	4	PDP+DS	M
	Master Thesis	26	PDP+DS+DT	M

In data analysis session, there are two different examination which are seperate characteristics and general characteristics. In separate characteristic method, each courses characteristics are examined, then these are observed; PDP, DS, DT, PDP+DS, PDP+DT, and PDP+DT+DS. This method shows that some courses contain one than more characteristics. In graphs of general characteristic method, total number of each courses which has any characteristics are shown as PDP, DS and DT.

When data in the Table 1 were analyzed, number of compulsory courses of industrial design departments at LNU and IZTECH and their characteristic can be seen at Figure 3 which shows IYTE has more number of PDP characteristic courses, but there is no other differences in terms of general characteristics. However, when each courses are examined according to their individual characteristics in Figure 4, LNU offers more courses in PDP+DS+DT characteristic courses than IZTECH. This type of courses teach not only basic skills but also working with team, developing concept and analyzing and solving problems. As seen Figure 5, both program offers almost the same number of elective courses, but courses at LNU have equal distribution in contrast to courses at IZTECH which have more DS characteristic elective courses. All elective courses are examined separately, IZTECH has some missing characteristics, while LNU offers courses in more various characteristics as seen Figure 6. As a result of first method, differences and similarities were determined between curriculum of industrial design programs at IZTECH and LNU. The most noticeable difference between two program is distribution of characteristics in elective courses. The number of PDP+DS+DT courses at IZTECH is less than LNU. Moreover, LNU offers elective courses in each characteristic in contrast to IZTECH.

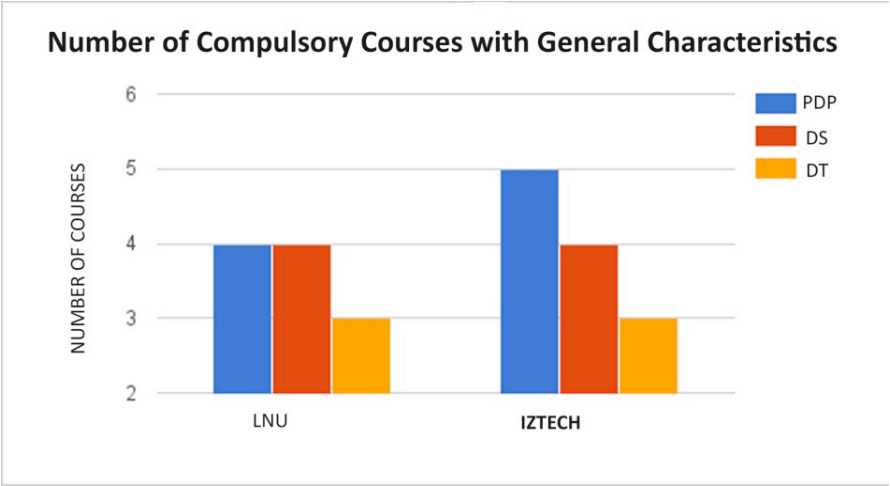


Figure 3. Number of compulsory courses in industrial design department at LNU and IZTECH and their general characteristics.

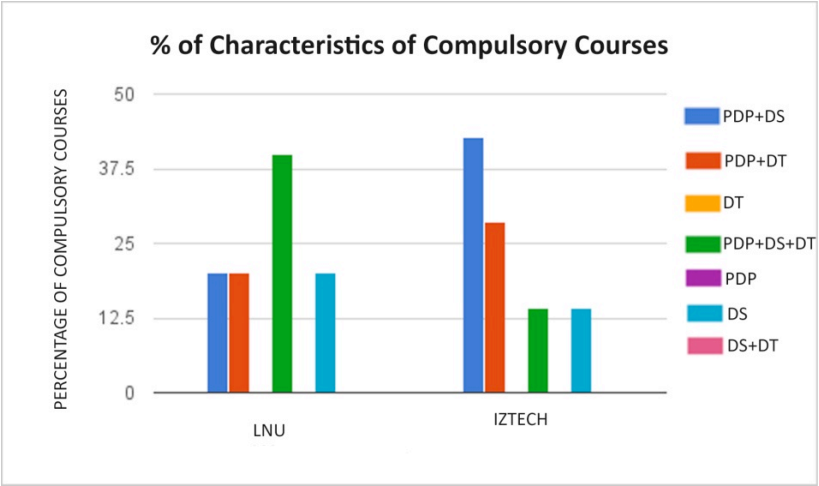


Figure 4. Percentage of distribution of characteristics into compulsory courses in industrial design department at LNU and IZTECH.

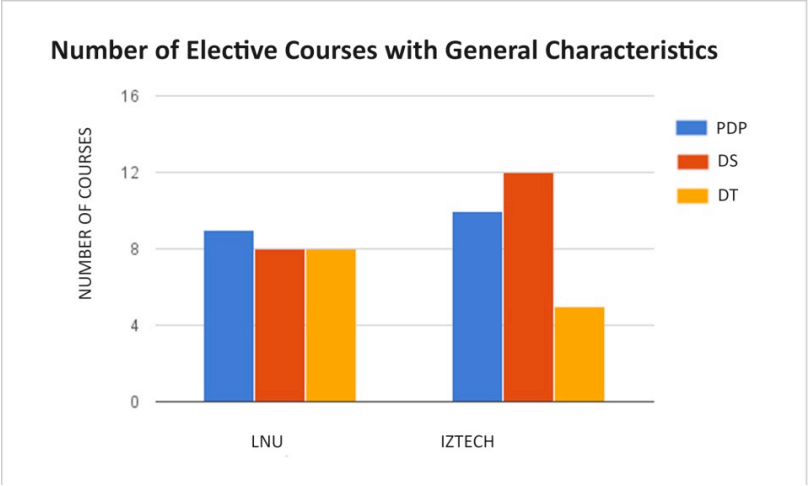


Figure 5. Number of elective courses in industrial design department at LNU and IZTECH and their general characteristics.

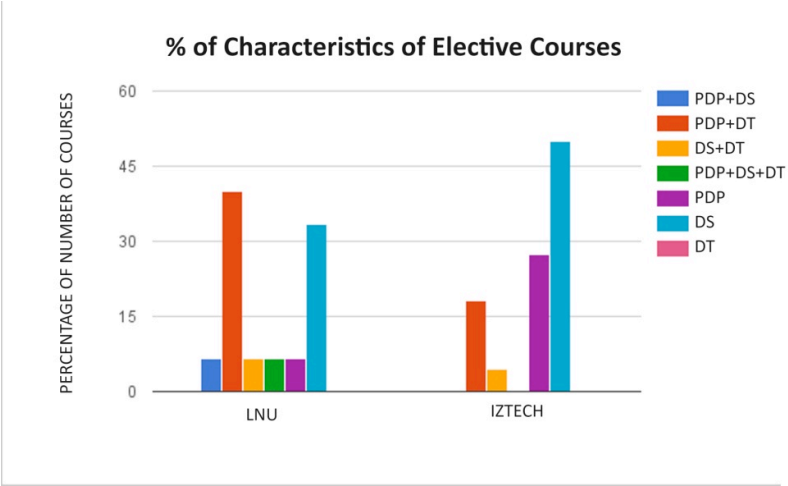


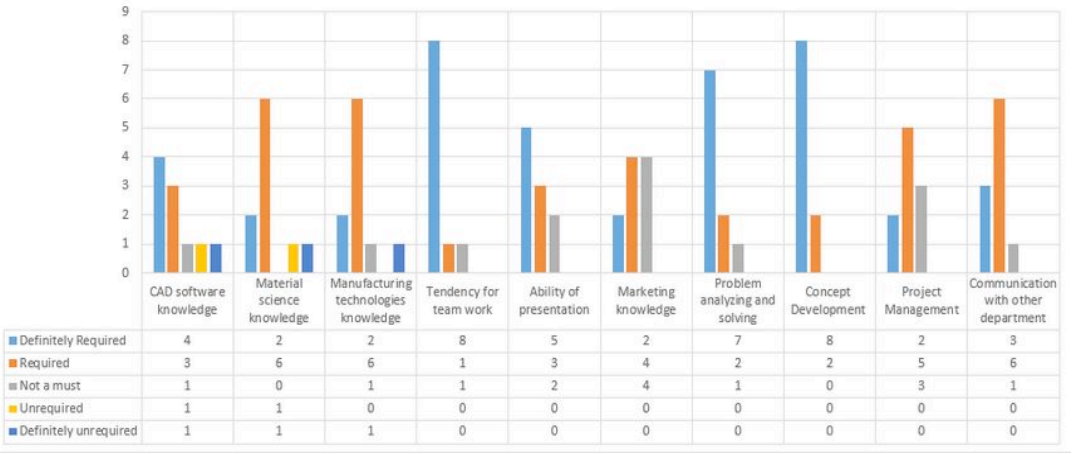
Figure 6. Percentage of distribution of characteristics into elective courses in industrial design department at LNU and IZTECH.

Feedback Session with Industry

As a second method, the aim is taking feedback from industrial design departments of companies or individual designers which had opportunity to work with new graduate of industrial design departments. For this purpose, survey which has 11 question was sent to design department manager or industrial designers. First 4 questions aim to learn who they are, and how much experience they have, next 6 questions are about what the situation of new graduates and what companies or employers expectations from them, and final question asks additional opinion of participants.

Feedback session was designed as small scale survey which is used where researchers have limited resources cause limitation in terms of size and scope in survey. Small scale surveys can be example for student's project or dissertation in social science area (Punch, 2003). For example of small scale survey (Owen, Fox & Bird, 2015). When participants are determined, variety of department and business segment are given importance, because nowadays graduates of industrial design departments are not only working for manufacturing industries, but also working for interaction or experience design projects. There are 10 participants who answered 11 of the questions, and the detailed answered sheets are in Appendix 1.

With the fourth question, second part of survey which includes questions about situations of new graduate industrial designers and expectations about them start. In fourth question, there is 5 scaled question which aims to learn which skills and knowledge companies or designers wait from new graduates. The most important two skills are working with a team and being able to develop concept that are given answer as definitely required skills by 8 participants as seen Figure 7.



	CAD software knowledge	Material science knowledge	Manufacturing technologies knowledge	Tendency for team work	Ability of presentation	Marketing knowledge	Problem analyzing and solving	Concept Development	Project Management	Communication with other department
Definitely Required	4	2	2	8	5	2	7	8	2	3
Required	3	6	6	1	3	4	2	2	5	6
Not a must	1	0	1	1	2	4	1	0	3	1
Unrequired	1	1	0	0	0	0	0	0	0	0
Definitely unrequired	1	1	1	0	0	0	0	0	0	0

Figure 7. Answers of the question 4 which is about expectations from new graduates from industrial design departments.

The next question is "In which level new graduate industrial designers meet your companies' expectation?". According to answers as seen in Figure 8, none of the companies found 100 % matched industrial designer, and majority replied that new graduates met as only 50 % as their expectations.

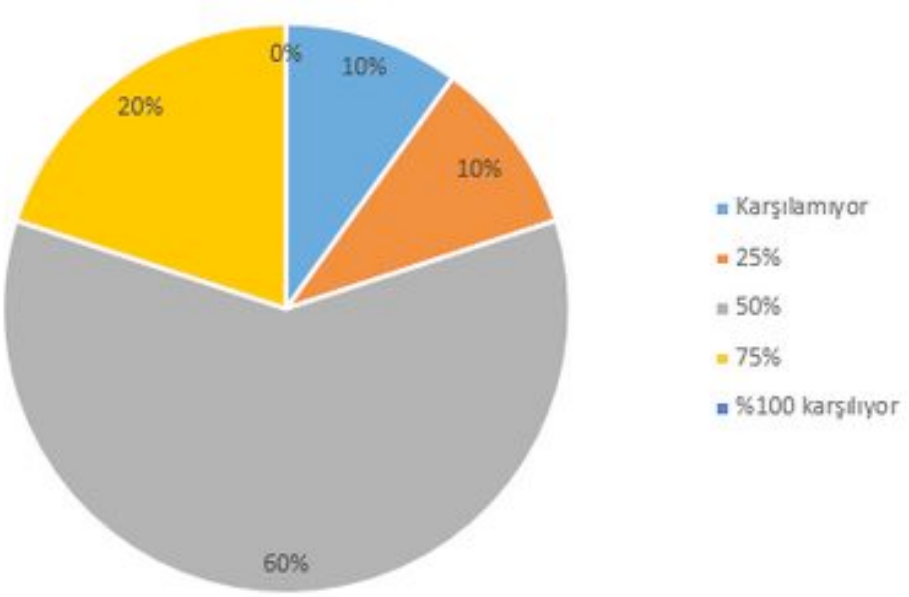


Figure 8. Companies expectations and meeting them with new graduates ratios.

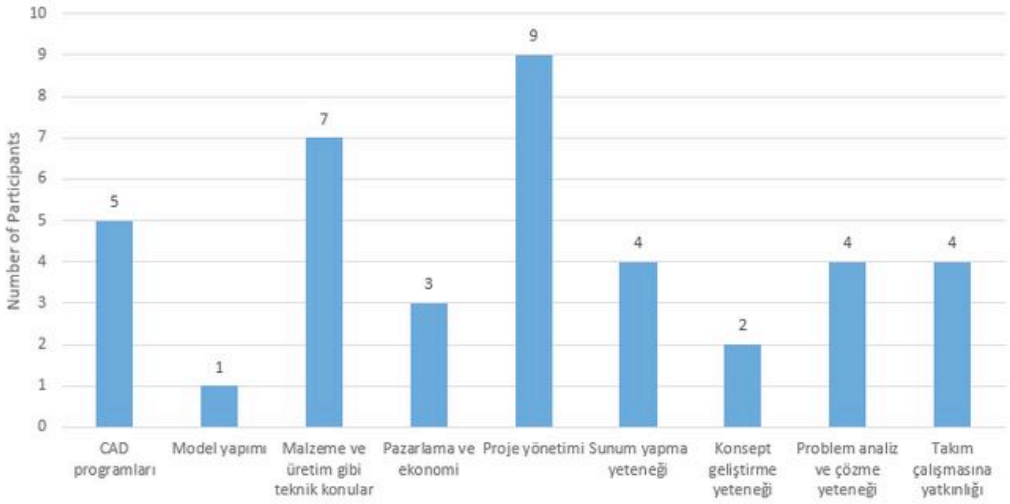


Figure 9. Lackness in specific subjects of new graduates according to companies.

The following one is questioned which skills and knowledge do new graduates have lackness. In contrast to companies expectations, they do not have enough knowledge in project management and technical subjects. However, companies want to more qualified new graduates in teamwork and concept development.

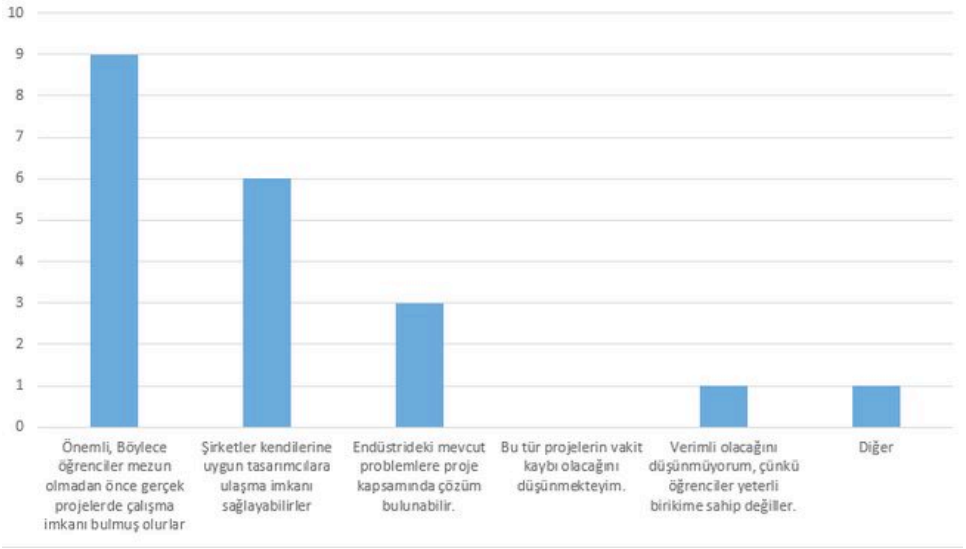


Figure 10. Companies opinion about UIC with industrial design departments.

As seen in Figure 10, the majority of companies think about UIC with industrial design departments are important, because thanks to UIC projects they can have opportunity to work on real projects before graduation. Moreover, when the answers are examined, 5 of participants who agree with majority opinion select one more opinion that is companies can reach designers who are suitable for them.

Participant companies or designers never contribute to found any facility for industrial design project labs or workshops, but 30 % of them has plan for future.

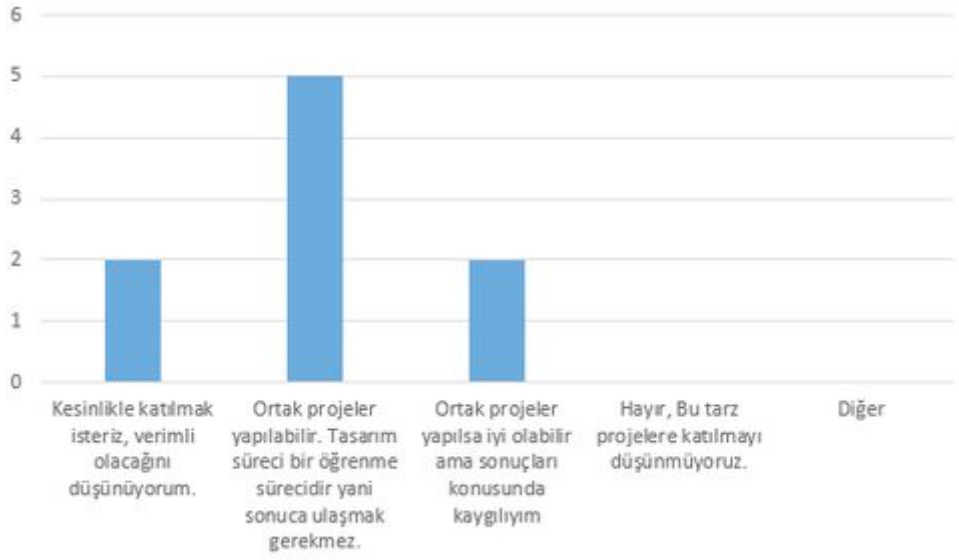


Figure 11. Companies and designers' tendency for UIC.

In Figure 11, how much companies and designers are willing to collaborate with üniversities is asked, and according to answers, opinions of majority is UIC projects are possible, and there is no obligation to reach to result, because the important point in UIC is process of learning together.

When companies or designers' additional opinion is asked at last question, one of them is " Before graduation, students should learn different departments needs, project management, and concept of business analysis, because these make advantage in business life. Thus, internships, teamworks and projects are important to gain experience".

Results

1. When compulsory courses examined in terms of general characteristics, both industrial design program have similar structure. However, percentage of characteristics of each courses is calculated, there is difference in PDP+DT+DS characteristic between LNU and IZTECH. LNU has more courses in this characteristic, while IZTECH has more courses in PDP+DS.
2. In LNU, characteristics are equally distributed into elective courses, but there is no balance in IZTECH. When characteristic of each courses are examined, LNU offers each of them, except only DT characteristics, However, there is some deficient characteristics in elective courses which are offered by IZTECH. PDP+DS and PDP+DS+DT are lacking characteristics.
3. Expectations of companies and designers from new graduates can be listed according to rate of definitely required and required; tendency of teamwork (8/10 definitely required), concept development (8/10 definitely required), problem analysis and solving (7/10 definitely required), CAD software using (4/10 definitely required), material science knowledge (6/10 required), manufacturing techniques knowledge (6/10 required), communication with other departments (6/10 required), project management (5/10 required).
4. New graduated industrial designers meet 60% companies' expectations in 50%, and 20% of companies think that new graduates meet expectation in 75%.
5. According to companies, new graduated industrial designers have lack of qualification in terms of project management, material science knowledge, manufacturing techniques knowledge and CAD software using ability.

6. The majority of participants agree with that "UIC is important for industrial design departments, because thanks to it, students take opportunity to work on real project."
7. In terms of tendency of companies and designers for UIC, they agree with that collaborative projects can be done, there should not be obligation to reach tangible results, because design is a learning process.

Conclusion

There are two methodology which is applied, and they aim to determine reason of lackness of UIC in IZTECH. To reach result, outcomes of two methods are compared and relationship is built to see how UIC can be developed in IZTECH.

Missing subjects are under PDP and DT characteristics. According to Figure 4 and Figure 6, both compulsory and elective courses offer limited number of DT characteristic courses which provide knowledge and experience about project management. DT is a side characteristics which means that there is no course with only DT characteristics as seen Table 1, because DT makes courses more advance and adds them team work, concept development etc. which are the most wanted qualifications by companies or designers according to survey result as seen Figure 7.

To make curriculum more suitable for UIC, adding new courses is not the only option, making improvement like adding team project, or other research assignments can contribute curriculum.

Notes

* Erkarslan was Visiting Professor at Linneaus University in Vaxjo, Sweden between September 10-December 9, 2012. The research titled 'A Comparative Analysis on Industrial Product Design Education in Izmir Institute of Technology and Linnaeus University-Collaborative Bridge Program with IKEA', was conducted with the support of Turkish Higher Education Council Grant, (B3.30.0.PER0.00.00.1/01-9806-35926).

References

Ankrah, S., & AL-Tabbaa, O. Universities—industry collaboration: A systematic review. Scandinavian Journal of Management (2015), http://dx.doi.org/10.1016/j.scaman.2015.02.003

Bektaş, Ç. & Tayauova, G. (2013). "A Model Suggestion for Improving the Efficiency of Higher Education: University–Industry Cooperation" in *Procedia Social and Behavioral Sciences 116* (2014) 2270 – 2274.

Bruce, M. & Bessant, J. (2002). *Design in Business*, Prentice Hall.

Erkarslan, O. (2013). A Systematic Review of the Relations between Industrial Design Education and Industry in Turkey through SWOT Analysis. *Design Journal, 16*(1), pp.74-102.

Erkarslan, O. (1998). 'Tasarımda Doktora Eğitimi Üzerine Alternatif Öneriler' ('Suggestions for PhD education in design'. In Er H. A. & Er, Ö. (eds) Endüstriyel Tasarım Eğitimi: ITÜ Endüstriyel Tasarım Toplantıları 1998–1999 (Proceedings *on Industrial Design Education 1998–1999 ITÜ).* Bildirileri *ITÜ Endüstri Ürünleri Tasarımı Bölümü, Nisan 2004.* Istanbul: Istanbul Technical University Press.

Erkarslan, O. (2007). 'Inter-disciplinary characteristic of design prof- ession: Bridging the gap between design education and industry'. *Designtrain Congress Trailer I,* Amsterdam, The Netherlands, 10–12 May 2007, pp. 213–218.

Erkarslan, O & Imamogulları, B. (2010). 'Comparative analysis of master of industrial design education in Turkey', *Design and Tech- nology Education: An International Journal,* (15)3: 41–57.

Erkarslan, O., Kaya, A. & Dilek, O. (2011). 'Comparative analysis of recruitment qualifications of industrial designers in Turkey through undergraduate education programmes and online recruitment resources'. *International Journal of Technology and Design Education,* 2011. Available at: http://link.springer.com/ article/10.1007/s10798-011-9164-6/fulltext.html [accessed 12 January 2011].

European Commision Innovation Union Scoreboard, 2013. http://ec.europa.eu/enterprise /policies /innovation/files/ius-2013_en.pdf (Last accessed on May 26, 2015).

Kotler, P., (2000). *Marketing Management*. Prentice-Hill Inc. London.

Lambert, R., (2003). *Lambert Review of Business-University Collaboration*. HMSO

NASAD, 2014. "NASAD Advisory Statement on Design Curricula in Higher Education" in *NASAD Handbook 2014-2015* (Virginia, USA), pg: 207.

Nathaniel Owen, Alison Fox & Terese Bird (2015): The development of a small-scale survey instrument of UK teachers to study professional use (and non-use) of and attitudes to social media, *International Journal of Research & Method in Education*, DOI:10.1080/1743727X.2015.1041491

OECD Data, 2015. Industrial production, https://data.oecd.org/industry/industrial-production.htm (Last accessed on May 25, 2015).

OECD (2015), Gross domestic spending on R&D (indicator). doi: 10.1787/d8b068b4-en (Accessed on 28 September 2015)

OECD (2015). Triadic patent families (indicator). doi: 10.1787/6a8d10f4-en (Accessed on 28 September 2015)

Punch, K. (2003). *Survey Research*. London, GBR: Sage Publications, pp. 22.

Spellmeyer, G., Weller, B., (2003). "Design Transfer". Proceedings of ICSID 2. Educational Conference, Design Congress 2003, Hannover, September 5-7, pp. 28-33.

Yücel, H., (1997). Bilim-teknoloji Politikaları ve 21. Yüzyılın Toplumu. http://turkoloji.cu.edu.tr/GENEL/yucel.pdf (Last accessed on May 25, 2015).

Yüksel, H., & Cevher, E. (2014). Questioning the Collaboration between Universities and Industry: The Case of Turkey. *International Journal of Humanities and Social Science, 4*(7), 232-243.

Wilson, T. (2012). *A Review of Business University Collaboration*, (Report), UK.

A research on the effects of various constructional features on students' biological, physiological and psychological development of students

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Abstract

Human beings continue to their growth through certain stages from birth to death. The primary school, secondary school and university periods cover 14 Years (between ages 6-20) from the early childhood to late adolescence. Besides determining the favorableness of the school building and the equipment, within this research it is aimed to determine the effects on the dynamic and static postures during the lesson and training sessions as well as the influence of the school building and the equipment's biological, physiological and psychological development. There have been 21 million students in state and private schools. 17 million of them are in primary school and secondary schools, 4 million of them study at universities. Unfortunately, we have neither a Work Health Unit nor a board for students at schools. There has never been a study to search for what physiological, biological, chemical, physical and psychological danger the students are vulnerable to at schools where they study neither in Turkey nor in the world. This research will contribute to the education and training from a different angle and will be useable for educators, administers, academicians, politicians, scientists, engineers, parents and students as well. This research covers primary and secondary schools in Isparta in 2014-2015 and constructional features of 22 different school buildings. Research contains the questionnaire questions used to determine the sex, age, height, weight, the WC habits, positive and negative moods at school, disability, awareness, hobbies, reach ability and discontentment levels of 512 student participants. RULA work evaluation form has been used to evaluate the work posture and SPSS for data analysis.

Keywords: School, building, education, posture, ergonomics.

Introduction

Educational institution and assessment of training effectiveness are very important improvement discriminating the modern community from primitive societies. Schools and school structures play a role in stationary system of Modern communities. With in that period; Schools and structures has renovated continuous. Schools have three basic functions in the modern communal systems. That features are knowledge, skill and potency. Nowadays, roles and responsibilities of education system and schools differentiated, increased. In response to this, schools have been exposed to a lot of matters and are seen uneasiness for try to solve problems.

Schools are organizations of public education. Qualified personnel grow in schools having as scientific, technologic, sociologic and career development. Certainly, those are very important for education organizations as internationalizations, accreditations, curriculum developments, hidden curriculum, curriculum evaluation and models, new trends, across, innovation and changes in Education System. As well as, there are also needs for reforms in the school structures. These types of researches have shown the relationship between learning and school structures.

Hathaway said that "We are shaped by first building then they shape us" in article of Educational Facilities. This is very important for schools, because everyone knows that people be useful in learning and acquiring skills of educational Facilities. However, they are also preventing the hidden forces.

School structures could be sometimes supportive factor and sometimes obstructer factor in education. More importantly, matters of school structures and equipments are profound effect on human, not lack or obsolete. Edwards shown the development of school buildings has that increased student achievement levels in article.

On the same article, aesthetic condition of the school structure increased student's success that impact on the upward. Students of modern school structure had been found to have a positive attitude by the students of the old school structure.

Standards-based reform has a deceptively simple logic: schools and school systems should be held accountable for their contributions to student learning. Society should communicate its expectations for what students should know and be able to do in the form of standards; both for what should be taught and for what students should be able to demonstrate about their learning. School administrators and policy makers, at the state, district, and school level, should regularly evaluate whether teachers are teaching what they are expected to teach and whether students can demonstrate what they are expected to learn. The fundamental unit of accountability should be the school, because that is the organizational unit where teaching and learning actually occurs. Evidence from evaluations of teaching and student performance should be used to improve teaching and learning and, ultimately, to allocate rewards and sanctions (Elmore, Adelman et. al., 1996).

According to findings of the study it is revealed that general appearance of a school and the appropriateness of the physical place is an important factor affecting the quality of the education; and that participants in school buildings with good architectural features develop positive feelings about their schools whereas participants in school buildings with poor architectural features develop negative feelings about their schools. Participants in schools with good architectural features mostly produced metaphors under positive themes whereas participants in schools with poor architectural features produced metaphors under negative themes. On the other hand, in all these three schools with different architectural features there are many functional shortcomings in terms of suitability of the buildings. Along the line of these findings it can be argued that in order for the schools to be peaceful, trustworthy and to increase the motivation to study, actions should be taken to arrange schools as more livable places (Karasolak, Sarı, 2011:133).

Aim of Research

Every individual has right of education in the shape using equal, fair, reliable, efficient, sustainable, intensive and continuous manner from school's structures and equipments throughout the life. This research aims to determine answer to the question "School's structures satisfy the need of students at the present time.

Sub-problems of research main-problems are presented as follow;

-Are school structure's age very important for quality education? -Height and weight assays of female and male students are normal standards.-Female and male students are not going to school structure's toilets. - Locations and structures of schools are out of joint.-School desks aren't ergonomic design but it's a must of education. All of them didn't produce for developmental disability of students. -School structure's staircases and corridors aren't suitable for quality education environment.-All students have positively sensation for school garden.

The aim of this research aims to determine the effects on the dynamic and static postures during the lesson and training sessions also the influence of the school building and the

equipment biological, physiological and psychological development besides determining the favorableness of the school building and the equipment.

Method

Research Design

Education is the process of changing the behavior of individuals in general. In other words, the educational process is expected to be a change in the person's behavior. (Varış 1981) person's goals, information, behavior, manners and moral extents are change thought education. If a person is entering the training process, this change must expected be in the desired direction. In this sense, (Ertürk 1972) education is to bring about the process through their lives and change the behavior of individuals of deliberately at desired. Based on this definition can be said, Education is to bring the process through their own experiences and deliberate cultivation change about the desired behavior of individuals (Demirel 2012:6).

In another definition of the concept of education made by considering the relationship between the school institutions; "The ability of the individual and the social optimum level of personal development and selected to obtain a controlled environment (especially schools) in the field of social process" as it has been emphasized. (Carter 1945:145)

In our country, a research carried out of determine the standards of school structure, the construction of public schools that have certain standards, and therefore the implementation of the projects according to their year of school structures has stated that differentiation of physical structures.(Vural, Sadık 2003;17)

We can ask that question than results of research. The physical size of the school has a multiplier effect on the educational process, is there a standard set educational environment have been identified in terms for school structure? If this context is a set standard, do the decision-makers of education take into account about what level these standards?

Participants

Sampling space covers primary and secondary schools in Isparta District in 2014-2015 academic year and questions used to determine the sex, age, height, weight, the WC habits, positive and negative moods at school, disability, awareness, hobbies, reach ability and discontentment levels of 512 student participants' constructional features of different school buildings. Sampling contains the constructional features of the school buildings located in the city centre (6 of which are primary schools, 8 of which middle schools, 8 of which are high schools and total number 22) and the measurements of the equipment used. In this study, experimental groups are evaluated in 6 categories;

1. Group from Primary Schools: 108 students,
2. Group from Middle Schools: 197 students,
3. Group from High Schools: 207 students,
4. Group Male: 249 students,
5. Group Female: 263 students,
6. Group Total: 512 students.

Instrument

Sampling space covers primary and secondary schools in Isparta District in 2014-2015 academic year and questions used to determine the sex, age, height, weight, the WC habits,

positive and negative moods at school, disability, awareness, hobbies, reach ability and discontentment levels of 512 student participants' constructional features of different school buildings.

RULA (Rapid Upper Limp Assessment) was developed to evaluate the exposure of individual workers to ergonomic risk factors associated with upper extremity MSD. The RULA ergonomic assessment tool considers biomechanical and postural load requirements of job tasks/demands on the neck, trunk and upper extremities. A single page worksheet is used to evaluate required body posture, force, and repetition. Based on the evaluations, scores are entered for each body region in section A for the arm and wrist, and section B for the neck and trunk. After the data for each region is collected and scored, tables on the form are then used to compile the risk factor variables, generating a single score that represents the level of MSD risk.

The RULA (Rapid Upper Limp Assessment) was designed for easy use without need for an advanced degree in ergonomics or expensive equipment. Using the RULA worksheet, the evaluator will assign a score for each of the following body regions: upper arm, lower arm, wrist, neck, trunk, and legs. After the data for each region is collected and scored, tables on the form are then used to compile the risk factor variables, generating a single score that represents the level of MSD risk as outlined below:

Table 1

Level of MSD Risk

Score	Level of MSD Risk
1-2	Negligible risk, no action required
3-4	Low risk, change may be needed
4-5	Medium risk, further investigation, change soon
6 +	Very high risk, implement change now

Ministry of Education's circulars, regulations, directives and "TS 12860 – Space requirements in public buildings - Education buildings - General rules" were used evaluation of conformity for school structures, equipments and materials. Students of designated schools have been observed in classrooms. Physical construction of schools, training tools, educational materials and equipments are measured. Developed scales applied.

Data Analysis

First of all questionnaire has been given and measurements are carried out to determine the sex, age, height, weight, their WC habits, their positive and negative moods at school, disability, awareness, hobbies, reach ability and discontentment levels of 512 students participated. In addition to this, a form has been produced and used to find the measurements of all the equipment ergonomic and constructional features with the school structures. The questionnaire used as a means of collecting data has been given to the students at the previously determined schools, received permission from the administration then filled by students and finally taken back.

Besides, TS 12860 – Space requirements in public buildings - Education buildings - General rules and 0-18 Age Height & Weight Table were used in data analyses. Applied survey forms were collected and then analyzed deemed valid and invalid forms. SPSS was used to analyze the survey forms. The solution of the obtained data, the frequency (F) and ANOVA (one way ANOVA) statistical methods are preferred. The data is decoded and interpreted in tables.

School managements were filling out Form of School Structure for Measurement and Evaluation (FSSME) and then, datum was transcribed and interpreted.

Table 2

Descriptive Statistic for Height and Weight of the Students

Average of Age	13.5	**Standard Deviation**	3.027
Height of Students	Minimum: 1,18 m. Maximum: 1,88 m. Average: 1,564 m.	**Standard Deviation** **Variance S.D.**	0.168 0.026
Weight of Students	Minimum: 18 kg Maximum: 95 Kg Average: 46.29 Kg	**Standard Deviation** **Variance S.D.** **Population S.D.**	14.869 221.096 14.854

This project will contribute to the education and training from a different angle and will be useable for educators, administers, academicians, politicians, scientists, engineers, parents and students as well. This research covers primary and secondary schools in Isparta in 2014-2015 and constructional features of 22 different school buildings. Research contains the questionnaire questions used to determine the sex, age, height, weight, the WC habits, positive and negative moods at school, disability, awareness, hobbies, reach ability and discontentment levels of 512 student participants. RULA work evaluation form has been used to evaluate the work posture and SPSS for data analysis.

Results

Table 3

The Results of Analysis Are Enclosed Related Structural of Inspected Schools

Topics	Explanation	Favorable	Unfavorable
Earthquake Safety	Is it suitable to earthquake regulations?	31,82%	68,18%
Toilet Cabins	1 cabin for 20 students (Max.)	63,64%	36,36%
Stair Width	Minimum 2 m.	59,09%	40,91%
Rise (Stairs)	Min. 14 cm. Max. 17 cm.	86,37%	13,63%
Going (Stairs)	Minimum 29 cm.	90,90%	09,10%
Platform (Stairs)	Minimum 3 m.	81,82%	18,18%
Landing (Stairs)	Min 4.20 m2 (3 m. x 1.4 m.)	59,19%	40,91%
Length of Corridor	Minimum 3.30 m.	68,18%	31,82%
Roof Heights (Class)	Minimum 3.30 m.	40,90%	59,10%
Square Measure (Class)	Min 49 m2 (7 m. x 7 m.)	45,45%	54,55%
Total Indoor Area	25 m^2 for 1 student (Min.)	04,54%	95,45%
Total Garden Area	2 m^2 for 1 student (Min.)	86,37%	13,63%
Heights (Desk)	Min. 610 mm. Max. 760 mm.	100,0%	00,00%
Length (Desk)	Minimum 800 mm.	100,0%	00,00%
Width (Desk)	Minimum 600 mm.	100,0%	00,00%
Width for Knee (Desk)	Minimum 450 mm.	63,64%	36,36%
Chair	Is it comfortable?	59,09%	40,91%
Height (Chair)	Minimum 410 mm.	100,0%	00,00%
Length (Chair)	Minimum 800 mm.	100,0%	00,00%
Width (Chair)	Minimum 350 mm.	100,0%	00,00%
Chair	Is it ergonomic?	40,90%	59,10%
Chair	Feet must be on the floor.	95,45%	04,55%
Chair	Backbone must be on middle of chair.	72,72%	27,28%

Chair	Elbows must be on upper of desk.	59,09%	40,91%
Chair	Knee must not be attached to chair.	100,0%	00,00%
Chair	Height must be variable.	00,00%	100,0%
Immobility	Maximum 30 Minutes	00,00%	100,0%

The structure of a school building is the group of columns, beams, structural walls, floors, and roof structure, and is its stability. Many school buildings have small cracks in concrete columns, beams, structural walls, and floors. In some cases, they are no cause for concern. Over time the school building settles and moves creating minute stresses at joints in materials that can cause small cracks to appear. In most cases, this is a normal part of the structure settling in its foundation. However, there are cases where other factors are at work, and the cracks are cause for concern and action. The key is to be able to tell the difference. Most times it should be left to a trained professional. If there is a major structural problem in the school building, it should be evaluated by a structural engineer, and the corresponding repairs should be made.

Results of School Structure for Measurement and Evaluation (FSSME) have been analyzed and interpreted. The age of buildings where the research has been done is between 1-140 years. Regulation on for to the structure to be built in Seismic Zones and disaster areas was promulgated as 06.03.2007 effective date and as 26454 effective numbers. According to the provisions and principles of regulation; 1/3 of the school buildings are newly built and the rest 2/3 are old and not quake resistant.

General Principles of Educational Buildings Architectural Project Preparation was prepared by the Department of Investment and Facilities in the Ministry of Education. Results of School Structure for Measurement and Evaluation (FSSME) have been analyzed and interpreted. According to the provisions and principles of regulation; 41% of classroom ceiling height is suitable and 59% of classroom ceiling is not suitable. 45% of classroom areas are suitable and 55% of classroom areas are not suitable in school structure.

“For each student must be minimum 25 m2 closed areas” officially told on General Principles of Educational Buildings Architectural Project Preparation. Results of School Structure for Measurement and Evaluation (FSSME) have been analyzed and interpreted. According to the provisions and principles of regulation; 95,45% of the area per student for school structure is suitable and 4,54% of the area per student for school structure is not suitable. 0-18 height and weight table was adapted as the reference value from pediatric, child development and medical science literatures of students’ height and weight. The table was used in this research for data analysis.

This app uses WHO tables and data for height/weight for age calculations. This calculator is for ethnic Turkish children. This application is for children and teenagers with an age of 9 to 18 years. This calculator determines height/weight percentile based on age. The percentile describes how a child's height and weight compares to other children. The percentile reports the percentage of children that have a height/weight less than the measured child. For example out of a total group of 100 children, a percentile value of 75 percent means the child measures more than 75 children and measures less than the other 25 children. A percentile of 50% represents the average height/weight. A percentile value below 50 percent means a child is less than average. A percentile value greater than 50 percent means a child is greater than average. In the circumstances; 12% of total students are sublimit (64 students), 70% of total students are normal (356 student) and 18% of total students are above limit (92 student) for height measurements. 10% of total students are sublimit (51 students), 85% of total students are normal (435 students) and 5% of total students are above limit (26 student) for weight

measurements. Human beings continue to their growth through certain stages from birth to death. These periods are childhood, adolescence, adulthood and old age that as know chain rings connected together like. Each universe consists in the impact of a previous universe, and influences the next one. In other words, childhood -to adolescence, adolescence to adulthood is greatly influenced. Transition of these universes from to each other is not only about the physical development of individual. At the same time, it is the formation and development of emotional, social, economic and cultural factors' guided. On the other hand, every universe has a unique and specific physical, emotional and social characteristic.

Stages of Developmental of Childhood and Adolescence;

- Newborn infant (0-4. Week)
- Babyhood (4 weeks-2 years)
- Early Childhood (2-6 years)
- Last childhood (6-11 years female) - (6-13 years for male)
- Adolescence (11-20 years of age in female) - (13-20 years for male)

As mentioned above, people live in school in the phases of last childhood and adolescence. This is why there are direct and indirect effects on students' physiological and psychological development from characteristic features of school structures' stairs, corridors, toilets, classrooms, desks, chairs, tables, garden, canteen etc.

Table 4

Height and Weight Reference Numeric Values for 0-18 Age's Boys and Girls at the Medical Literature

	Female Student				**Male Student**			
Age	Minimum Height.	Maximum Height.	Minimum Weight	Maximum Weight	Minimum Height	Maximum Height	Minimum Weight	Minimum Weight
9	1,20	1,46	20	39	1,20	1,46	20	39
10	1,25	1,49	22	45	1,25	1,52	22	46
11	1,34	1,57	27	54	1,30	1,58	24	53
12	1,41	1,65	31	59	1,35	1,65	27	60
13	1,45	1,69	35	64	1,41	1,72	30	68
14	1,48	1,70	38	67	1,47	1,79	34	73
15	1,49	1,70	40	69	1,53	1,83	40	77
16	1,49	1,71	42	70	1,62	1,85	45	81
17	1,49	1,71	43	71	1,62	1,90	48	83
18	1,49	1,71	44	72	1,62	1,90	51	84

Height and weight reference numeric values for 0-18 age's boys and girls at the medical literature and child development and training. Height and weight reference numeric values for 9-18 ages' students grouped by sublimit, normal and upper limit.

Table 5

Female Student's Height and Weight Numerical Values

	Female Students					**Female Students' Results**					
Age	Female Student	Ht. Sub Limit	Ht. Upp. Limit	Wt. Sub Limit	Wt. Upp. Limit	Ht. Sub Limit	Ht. Upp. Limit	Normal Height	Wt. Sub Limit	Wt. Upp. Limit	Normal Weight
9	24	1,20	1,46	20	39	6	1	17	7	1	16
10	28	1,25	1,49	22	45	11	0	17	6	0	22
11	34	1,34	1,57	27	54	11	2	21	6	0	28
12	14	1,41	1,65	31	59	6	0	8	3	0	11
13	21	1,45	1,69	35	64	2	3	16	4	1	16
14	26	1,48	1,70	38	67	0	6	20	2	0	24
15	45	1,49	1,70	40	69	2	12	31	0	1	44
16	16	1,49	1,71	42	70	0	5	11	0	1	15
17	40	1,49	1,71	43	71	0	17	23	3	1	36

18	15	1,49	1,71	44	72	0	6	9	0	1	14
	263					**38**	**52**	**173**	**31**	**6**	**226**

Female Student's Height and Weight Numerical Values; Height sublimit 14% (38 students), Normal height 66% (173 students), Height upper 20% (52 students) and Weight sublimit 12% (31 students), Normal Weight 86% (226 students), Weight upper 2% (12 students)

Table 6

Male Student's Height and Weight Numerical Values

		Male Students				**Male Students' Results**					
Age	Male Student	Ht. Sub. Limit	Ht. Upp. Limit	Wt. Sub. Limit	Wt. Upp. Limit	Ht. Sub. Limit	Ht. Upp. Limit	Normal Height	Wt. Sub. Limit	Wt. Upp. Limit	Normal Weight
9	30	1,20	1,46	20	39	7	8	15	5	1	24
10	26	1,25	1,52	22	46	7	1	18	4	1	21
11	0	1,30	1,58	24	53	0	0	0	0	0	0
12	23	1,35	1,65	27	60	4	4	15	2	0	21
13	53	1,41	1,72	30	68	2	10	41	5	7	41
14	26	1,47	1,79	34	73	3	4	19	2	2	22
15	33	1,53	1,83	40	77	1	4	28	1	4	28
16	17	1,62	1,85	45	81	0	3	14	0	4	13
17	33	1,62	1,90	48	83	2	6	25	1	0	32
18	8	1,62	1,90	51	84	0	0	8	0	1	7
	249					**26**	**40**	**183**	**20**	**20**	**209**

Male Student's Height and Weight Numerical Values; Height sublimit 10% (26 students), Normal Height 74% (183 students), Height upper 16% (40 students) and Weight sublimit 8% (20 students), Normal Weight 84% (209 students), Weight upper 8% (20 students)

Table 7

Female and Male Student's Height and Weight Percentage Values

	Female Student's Results %						**Male Student's Results %**					
Age	Ht Sub Limit	Ht Upp. Limit	Normal Height	Wt. Sub Limit	Wt. Upp. Limit	Normal Weight	Ht. Sub Limit	Ht. Upp. Limit	Normal Height	Wt. Sub Limit	Wt. Upp. Limit	Normal Weight
9	25,00	4,17	70,83	29,18	4,17	66,69	23,33	26,70	49,97	16,67	33,33	50,00
10	39,29	0,00	60,71	21,43	0,00	78,57	26,92	3,85	69,23	15,38	3,84	80,78
11	32,35	5,88	61,77	17,65	0,00	82,35	0,00	0,00	0,00	0,00	0,00	0,00
12	42,86	0,00	57,14	21,43	0,00	78,57	17,39	17,39	65,22	8,70	0,00	91,30
13	9,53	14,29	76,18	19,05	4,77	76,18	3,77	18,68	77,35	9,44	13,20	77,36
14	0,00	23,08	76,92	7,70	0,00	92,30	11,53	15,38	73,09	7,70	7,70	84,60
15	4,45	26,70	68,85	0,00	2,23	97,77	3,03	12,12	84,85	3,03	12,12	84,85
16	0,00	31,25	68,75	0,00	6,25	93,75	0,00	17,65	82,35	0,00	23,52	76,48
17	0,00	42,50	57,50	7,50	2,50	90,00	6,06	18,18	75,76	3,03	0,00	96,97
18	0,00	40,00	60,00	0,00	6,67	93,33	0,00	0,00	100, 00	0,00	12,50	87,50

Male Student's Height and Weight Numerical Values; Height sublimit 10% (26 students), Normal Height 74% (183 students), Height upper 16% (40 students) and Weight sublimit 8% (20 students), Normal Weight 84% (209 students), Weight upper 8% (20 students)

Table 8

Opinions of Students about Toilets and Sinks

What is your opinion about toilets and sinks in your school?

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Very Good	58	11,3	11,3	11,3
	Good	122	23,8	23,8	35,2

Not Bad	183	35,7	35,7	70,9
Bad	149	29,1	29,1	100,0
Total	512	100,0	100,0	

Table 6 Students' assessment level is differentiated a little for all the experimental groups in significantly about quality of toilets and sinks in their school (Sig>0.05). i.e; Female students' assessment level is negatively than male groups and other groups.

Results of School Structure for Measurement and Evaluation (FSSME) have been analyzed and interpreted. 64% of schools' toilet cabins are suitable to standards and 36% of schools' toilets cabins are not suitable to standards. The Education (School Premises) Regulations 1999 stipulate minimum standards for school premises. The regulations set out the number of toilets and washbasins that should be provided according to the number of pupils in all existing and new maintained schools.

Toilets:

- Pupils over 5 years of age: 1 toilet for every 20 pupils.
- Pupils under the age of 5: 1 toilet for every 10 pupils.
- In special schools: 1 toilet for every 10 pupils, regardless of age.
- In Turkey: 1 toilet for every 20 students (5-18 ages).

The regulations also require toilet areas for male and female learners over the age of eight to be separate. Girls' toilets should not have urinals. Staff toilets, other than those designed for disabled access, must be separate from learners' toilets. Providing the basic number of sanitary fittings will not, of itself, mean that all the relevant standards have been met. The regulations require washroom facilities (water closets, urinals, washbasins and sinks) to be adequate having regard to the ages, gender and number of learners and any relevant special requirement they may have.

Table 9

Descriptive Statistic about Drinking Water

Where do you drink water in your school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	From Canteen	260	50,8	50,8	50,8
	From my House	176	34,4	34,4	85,2
	From Toilet	55	10,7	10,7	95,9
	Other	21	4,1	4,1	100,0
	Total	512	100,0	100,0	

Table 7 Students' assessment level is undifferentiated for all the experimental groups in significantly about potable water supply in their school (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

As part of engaging with children and young people, a school toilet questionnaire was provided to learners, giving their views on their school toilets. A total of 512 responses were received, comprising of 249 girls, 263 boys and two who did not identify their gender. What follows are some of the questions posed in the questionnaire, and the responses?

Table 10

Descriptive Statistic about Going to Toilet

How often do you go to toilet in the school? TOTAL STUDENTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	41	8,0	8,0	8,0
	Sometimes	194	37,9	37,9	45,9
	Just Be Taken Short	221	43,2	43,2	89,1
	Never	56	10,9	10,9	100,0
	Total	512	100,0	100,0	

How often do you go to toilet in the school? PRIMARY SCHOOL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	8	7,4	7,4	7,4
	Sometimes	39	36,1	36,1	43,5
	Just Be Taken Short	51	47,2	47,2	90,7
	Never	10	9,3	9,3	100,0
	Total	108	100,0	100,0	

How often do you go to toilet in the school? SECONDARY SCHOOL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	8	4,1	4,1	4,1
	Sometimes	72	36,5	36,5	40,6
	Just Be Taken Short	87	44,2	44,2	84,8
	Never	30	15,2	15,2	100,0
	Total	197	100,0	100,0	

How often do you go to toilet in the school? HIGH SCHOOL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	25	12,1	12,1	12,1
	Sometimes	83	40,1	40,1	52,2
	Just Be Taken Short	83	40,1	40,1	92,3
	Never	16	7,7	7,7	100,0
	Total	207	100,0	100,0	

Table 8 Students' assessment level is undifferentiated for all the experimental groups in significantly about urinary frequency in their school (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

Only; for children to stay healthy, they need to drink water regularly throughout the day. They also need to empty their bladder and bowels regularly and fully when the need first arises. Children need open access to fresh drinking water; as inadequate fluid intake may lead, consciously or unconsciously, to toilet avoidance.

There are occasions when children will need to 'hold on' before they can visit the toilet, but repeated prolonged delays can cause distress and health problems. Holding on can lead to constipation, which in turn can result in soiling, or they could experience bladder/urine infections. For some children any delay is impossible. Each child's bladder and bowels are individual and their bladder and bowel capacity are very variable, function to their own timetable and will differ according to a multitude of variable factors. A child's timetable is therefore unlikely to conform to the school's timetable. Learners may not have the opportunity to go to the toilet between each lesson and there may be long periods in the school day without a break. In Lifting the lid on the nation's school toilets, the Children's Commissioner found that 54,1 per cent of respondents said that it was difficult to get permission to use the toilets during lesson times.

Restricting toilet access to set times encourages 'I'll go just in case' practice which may contribute to 'small-bladder syndrome'. Emptying the bladder before it is full can reduce capacity and means the bladder does not get used to holding on until it is full. This can create problems such as needing to go more often during the day and night, and having to get to the toilet in a hurry to prevent accidents. At the same time, the amount of fluid a child can drink before needing to go to the toilet is reduced. Learners may also avoid emptying their bowels at school. This can be due to a lack of privacy, poor toilet conditions, and not enough time to use the toilet. Locks are essential for privacy and if missing, will contribute to toilet avoidance.

Toilets that are in a poor state and in need of refurbishment and more frequent cleaning may be more likely to attract poor behavior. School toilets can become an adult-free zone. It is important that learners feel safe to use toilet facilities at all times and staff and learners should work to develop strategies to ensure this is achieved.

The school should promote washroom/toilet area environments that are safe, reliable, maintainable and user-friendly. Learners need to feel comfortable and safe to encourage them to use the toilet. Well-lit, bright, colorful toilets help boost learner morale. Involving learners in their design and decoration encourages ownership, pride and reduces vandalism. Ease of cleaning also needs to be considered when designing and refurbishing toilets. Most learners' toilets need cleaning at least twice a day. An extended day may increase this to three or more times. Soap dispensers that leak, awkward corners and cracked surfaces all contribute to a dirty environment.

The location of toilets is also important as learners might have to travel some distance within the school to get to the toilet. This can make teachers reluctant to let learners out of class to visit the toilet. Toilets located away from classrooms present particular difficulties for learners with special needs. Toilets attached to each classroom or cluster of classrooms are a particularly good solution. These allow learners easier access to toilets during lessons and enable teachers to keep a closer eye on learners.

Germs are found just about everywhere. They are transferred to our hands when we touch other people, animals, body fluids, contaminated surfaces and raw food, and when we cough and sneeze. They can then be passed into our bodies (e.g. when we eat without washing our hands first), to other people, food and other surfaces that we touch. Thorough hand washing using liquid soap and running water is the single most effective way of stopping germs from getting into our bodies and causing infection. Studies show that good hand washing after using the toilet reduces the spread of gastrointestinal infections.

Although toilet bowls are highly likely to be contaminated with germs, the risk of transmission is usually low. However, transmission may occur through direct contact with the contaminated surface, for example, by touching the toilet, splashing or during flushing. Therefore, toilets should be checked regularly throughout the day, and cleaned and disinfected as necessary. The frequency of cleaning and maintenance procedures will depend on how many children use the facilities and whether they have good toilet habits. When cleaning is only done once daily, it is much more likely that the toilets will become unsanitary and will be avoided by some learners.

Table 11

Descriptive Statistic about Having a Contagion

Did you have a contagion from your school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	66	12,9	12,9	12,9
	No	336	65,6	65,6	78,5
	I Don't Know	89	17,4	17,4	95,9
	I Don't Remember	21	4,1	4,1	100,0
	Total	512	100,0	100,0	

Table 9 Students' assessment level is undifferentiated for all the experimental groups in significantly about contract a serious communicable in their school (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

Non-suicidal self-injury is an increasingly common behavior among school-aged youth and occurs with regularity in secondary school and college settings. It is uncommon, however, for schools to have well-articulated protocols for detecting, intervening in, and preventing self

injury. Although specific protocols and practices are likely to vary considerably from school to school, this report provides an overview of best practices for detecting and responding to self injury in secondary school settings.

Table 12

Opinons of the Students about Stairs and Corridors

What is your opinion about stairs and corridors in your school?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	90	17,6	17,6	17,6
	Good	208	40,6	40,6	58,2
	Not Bad	187	36,5	36,5	94,7
	Bad	27	5,3	5,3	100,0
	Total	512	100,0	100,0	

Table 10 Students' assessment level is undifferentiated for all the experimental groups in significantly about quality of stairs and corridors in their school (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

%59 of schools' stairs' width is suitable to standards. 41% of schools' stairs' widths is not suitable to standards. %86 of schools' stairs' rise is suitable to standards. 14% of schools' stairs' rise is not suitable to standards. 82% of schools' stairs' going is suitable to standards. 18% of schools' stairs' going is not suitable to standards. 59% of schools' stairs' platform is suitable to standards. 41% of schools' stairs' platform is not suitable to standards. 69% of schools' stairs' length of corridor is suitable to standards. 31% of schools' stairs' length of corridor is not suitable to standards. Only;

Circulation areas are perhaps the most multifunctional rooms in the school building. The range of activities is vast and their position in the building with often little access to daylight requires artificial lighting support. Due to a varying presence of people, sensors may assist in reducing the energy consumption.

Long school corridors are excellent spaces for the youngest children to develop their eyesight. The youngest children find it more difficult to understand distances and three dimensional objects. A mix between direct and indirect lighting in the corridor may help them make out objects clearly. Corridors create natural navigation lines, but safe navigation may also be helped by lead lines, luminance contrasts, luminaries position and lighting. Light in people's faces is particularly important in the circulation area. Pupils and teachers should be able to see each others' faces also outside the classroom. This may be done by adding light onto the ceiling and vertical faces and by maintaining a cylindrical illuminance of 150 lux and a modeling effect of between 0,3 and 0,6. To secure a safe navigation, bright light without glare and harsh shadows is needed. Hard and long shadows may be misinterpreted as steps or obstacles by visually impaired people. A good way to cater for special needs are compliance with the EN 12464-1, to use proper luminance contrasts, i.e. different colors to mark the direction or steps, and lead lines.

Table 13

Opinions of the Students about Tables and Chairs

What's your opinion about tables and chairs in your classroom? (Quality and ergonomic)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	100	19,5	19,5	19,5
	Good	186	36,3	36,3	55,9
	Not Bad	122	23,8	23,8	79,7
	Bad	104	20,3	20,3	100,0
	Total	512	100,0	100,0	

Table 11 Students' assessment level is undifferentiated for all the experimental groups in significantly about quality of tables and chairs in their classroom (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group) only;

Minimum height value of students who participated in the experimental group is 1.18 cm. the maximum height is 1.88 cm. The difference is 70 cm. Minimum weight value of students who participated in the experimental group is 18 kg. the maximum weight is 95 kg. The difference is 77 kg. School structures and equipments manufactured according to students' normal average height and weight. Therefore, if students have out of limit height and weight whose can meet problems in dynamic and static posture as physiological when it interacts with these materials in the coming years?

Results of School Structure for Measurement and Evaluation (FSSME) have been analyzed and interpreted. 40,10% of School desk and chairs are suitable but 50,90% of school desk and chairs are not suitable for international standards and others. This research carried out a cross-sectional study of 512 nine to eighteen-year olds of differing maturity to examine the effect of a mismatch between school furniture dimensions, the weight of their school bags and the student's anthropometric characteristics. They found that almost two thirds (341) of the students studied suffered from back pain and that large differences between desk height and elbow height was associated with a greater likelihood of the adolescents having this problem. Girls were more likely to suffer from the desk height discrepancy than boys; 45% of girls and 57% of boys. "Our results also showed that there was no association between backpack weight, body mass index (BMI) and back pain," the team says.

"These results highlight the importance to study the school environment to establish preventive programs for back pain in youths," the researchers say. They point out that the number of school-aged children and adolescents reporting frequent episodes of back and neck pain and headache have increased in the last few decades and that it is now recognized that people suffering during childhood are likely to suffer back pain in adulthood too, unless the problem is treated appropriately.

The researchers concede that back pain is, of course, a multi-factorial problem that results from an interaction of different risk factors, such as, age, family clinical history, injury, gender, lifestyle, sport, stress and anxiety. However, ergonomic factors such as a student's desk and chair dimensions are also likely to play a significant role. This is especially true given that students spend considerable amounts of time sitting at a desk, with physical activity and sports at a low in many educational establishments despite today's supposed drive to make everyone more active. The World Health Organization recommends at least 60 minutes of moderate to vigorous physical activity every day."These results highlight how relevant it is to study the school environment in order to establish preventive programs for back pain in children and adolescents, not only health wise, but also in terms of school education," the team asserts. "These results show the importance of promoting healthy lifestyles in what concerns physical activity and a balanced nutrition."

Table 14

Descriptive Statistic about Seeing and Writing in the Classroom

Do you see the board and writings in the classroom easily?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	168	32,8	32,8	32,8
	Good	203	39,6	39,6	72,5
	Not Bad	97	18,9	18,9	91,4
	Bad	44	8,6	8,6	100,0
	Total	512	100,0	100,0	

Table 12 Students' assessment level is undifferentiated for all the experimental groups in significantly about watching board and writings in their classroom (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

To secure a safe navigation, bright light without glare and harsh shadows is needed. Hard and long shadows may be misinterpreted as steps or obstacles by visually impaired people. A good way to cater for special needs are compliance with the EN 12464-1, to use proper luminance contrasts, i.e. different colors to mark the direction or steps, and lead lines.

Table 15

Opinions of the Students about Acoustic and Tracing

What is your opinion about acoustic and tracing in the classroom?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	120	23,4	23,4	23,4
	Good	193	37,7	37,7	61,1
	Not Bad	132	25,8	25,8	86,9
	Bad	67	13,1	13,1	100,0
	Total	512	100,0	100,0	

Table 13 Students' assessment level is differentiated for all the experimental groups in significantly about acoustic and tracing in their classroom (Sig>0.05). i.e; Female students' assessment level is negatively than male group and other groups.

Ventilation should be provided to limit the concentration of carbon dioxide in all teaching and learning spaces. When measured at seated head height, during the continuous period between the start and finish of teaching on any day, the average concentration of carbon dioxide should not exceed 1500 parts per million (ppm). There is a strong relationship between ventilation and acoustics, particularly with natural ventilation. Natural ventilation systems generate no noise themselves, but do allow the ingress of external noise, for example from traffic, into the building. A passage provided for the flow of ventilation air – either internally or from the outside – also becomes a path for noise. The standards of acoustic performance now required for schools, as determined by the Building Regulations, demand careful consideration of the interaction of the ventilation strategy and the acoustic performance of the building. Experience has shown that some good natural ventilation strategies have not worked in practice, because of the transmission of unwanted sound.

Table 16

Opinions of the Students about Heat Energy System

What is your opinion about heat energy system of classroom?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	184	35,9	35,9	35,9
	Good	203	39,6	39,6	75,6
	Not Bad	90	17,6	17,6	93,2
	Bad	35	6,8	6,8	100,0
	Total	512	100,0	100,0	

Table 14 Students' assessment level is undifferentiated for all the experimental groups in significantly about heat energy system in their classroom (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

The classroom is 7.7 m (width) x 7 m (depth) x 3 m (height), giving 53.9 m² gross floor areas, and 161.7 m³ volumes, occupied by 30 pupils, a teacher. The window areas modeled are 20%, 40% and 60% of the façade, which has a total area of 23.1 m².

In the event of temperatures either not reaching or falling below the acceptable minimum of 16 degrees centigrade, the School Representative should be informed. The Representative should verify the temperature in the room(s) concerned and, if possible, find out the extent of the problem. The School Representative should inform the principal of the complaint giving detail of temperatures of rooms concerned. Alternative adequately heated teaching accommodation should be arranged. If this is not possible, management should be informed and asked to provide alternative means of heating. If the problem has been caused by a breakdown of the heating plant, the Area Board should also be informed. If it is clear that minimum acceptable temperatures cannot be reached in a further short space of time, the principal should be asked to put the following procedure into operation.

Table 17

Opinions of the Students about Ventilation System

What is your opinion about ventilation system in the classroom?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Good	96	18,8	18,8	18,8
	Good	184	35,9	35,9	54,7
	Not Bad	153	29,9	29,9	84,6
	Bad	79	15,4	15,4	100,0
	Total	512	100,0	100,0	

Table 15 Students' assessment level is undifferentiated for all the experimental groups in significantly about ventilation system in their classroom (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

Traditionally, schools have been designed for natural ventilation and good daylighting. This resulted in narrow-plan schools provided with large areas of openable windows, often offering cross ventilation combined with stack ventilation by clerestory windows. Studies have shown that this can provide the required level of fresh air. However, classroom occupants are typically not able to exploit the full potential of the ventilation and accept a slightly reduced level of air quality because of problems of operation or draughts.

The energy required to condition the outdoor air in winter can be a significant portion of the total space-conditioning load, and increasingly so as fabric insulation increases. Air exchange typically represents 20% to 50% of a building's thermal load, and this is one reason to limit air-exchange rates in schools to the minimum required. An energy-efficient design aims to provide thermal comfort and acceptable indoor air quality with the minimum use of energy. In winter, any fresh air above that required for controlling indoor air quality represents an energy penalty. This means that careful thought needs to be given to the detailed design of the ventilation system.

Natural ventilation can contribute to a sustainable environment by reducing the electrical energy used in buildings. Most naturally ventilated buildings are narrow plan, and this can allow increased utilization of daylight, thereby reducing demand for electric lighting in addition to the reduced energy demands of ventilation fans and air-handling plant.

Table 18

Descriptive Statistic about having Distractibility

During the lessons, how often do you have distractibility?					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Always	35	6,8	6,8	6,8
	Commonly	110	21,5	21,5	28,3
	Sometimes	302	59,0	59,0	87,3
	Never	65	12,7	12,7	100,0
	Total	512	100,0	100,0	

Table 16 Students' assessment level is undifferentiated for all the experimental groups in significantly about distractibility during the lesson in their classroom (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

One child with a learning disability and/or an attention deficit disorder can keep a classroom in constant uproar if nothing is done to counteract his trouble with attention, organization, time, and social acceptance. In these areas, the youngster does not have the ability to control and change his own behavior. Teachers have to deal with these problems by adjusting his environment. Careful classroom management can prevent the LD/ADD student from becoming a strongly disruptive influence. Students with a learning disability and/or an attention deficit disorder usually find the normal hum of classroom activity extremely distracting. Even such tiny, unavoidable sounds as turning pages, shuffling feet, and whispered conversations catch their attention and draw their minds away from schoolwork.

Table 19

Opinions of the Students about Precautions for Disabled Students

What is your opinion about precautions for disabled students in the school?					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Very Good	83	16,2	16,2	16,2
	Good	114	22,3	22,3	38,5
	Not Bad	137	26,8	26,8	65,2
	Bad	178	34,8	34,8	100,0
	Total	512	100,0	100,0	

Table 17 Students' assessment level is differentiated for all the experimental groups in significantly about precautions for disabled students in their school (Sig>0.05). i.e; Female students' assessment level is negatively than male group and other groups.

In order to create an inclusive classroom where all students are respected, it is important to use language that prioritizes the student over his or her disability. Disability labels can be stigmatizing and perpetuate false stereotypes where students who are disabled are not as capable as their peers. In general, it is appropriate to reference the disability only when it is pertinent to the situation. For instance, it is better to say "The student, who has a disability" rather than "The disabled student" because it places the importance on the student, rather than on the fact that the student has a disability. Students may have disabilities that are more or less apparent. For instance, you may not know that a student has epilepsy or a chronic pain disorder unless she chooses to disclose or an incident arises. These "hidden" disorders can be hard for students to disclose because many people assume they are healthy because "they look fine." In some cases, the student may make a seemingly strange request or action that is disability-related. For example, if you ask the students to rearrange the desks, a student may not help because he has a torn ligament or a relapsing and remitting condition like Multiple Sclerosis. Or, a student may ask to record lectures because she has dyslexia and it takes longer to transcribe the lectures.

Table 20

Descriptive Statistic about School's Garden Floor

What is the school's garden's floor?					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Asphalt	256	50,0	50,0	50,0
	Concrete	193	37,7	37,7	87,7
	Sand way	11	2,1	2,1	89,8
	Other	52	10,2	10,2	100,0
	Total	512	100,0	100,0	

Table 18 Students' assessment level is undifferentiated for all the experimental groups in significantly about the garden's floor in their school (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

Young people increasingly are isolated from the land and deprived of the joys and responsibilities it teaches.(Alice Waters) School gardens are a wonderful way to use the schoolyard as a classroom, reconnect students with the natural world and the true source of their food, and teach them valuable gardening and agriculture concepts and skills that integrate with several subjects, such as math, science, art, health and physical education, and social studies, as well as several educational goals, including personal and social responsibility.

Table 21

Opinions about School Garden Type

Which type did you want?					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Asphalt/Concrete	141	27,5	27,5	27,5
	Carpet	78	15,2	15,2	42,8
	Sand way	23	4,5	4,5	47,3
	Grass	270	52,7	52,7	100,0
	Total	512	100,0	100,0	

Table 19 Students' assessment level is undifferentiated for all the experimental groups in significantly about choose the garden's floor in their school (Sig>0.05). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

A School Garden requires a child's intellectual, emotional and social engagement with things that must be measured, counted, weighed, arranged, planned and cared for. It can yield gratifying and often surprising results for you and your students.

Table 22

Opinions about Most Important Factor for Success

Which is the most important factor for success					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Structure	26	5,1	5,1	5,1
	Teachers	286	55,9	55,9	60,9
	Parents	110	21,5	21,5	82,4
	Friends	90	17,6	17,6	100,0
	Total	512	100,0	100,0	

Table 20 Students' assessment level is differentiated for all the experimental groups in significantly about the most important factor for success in their school (Sig>0.05). i.e; Students' assessment level is not resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

Success for primary schools' students; 12% of students said that its important school structure for succeed. 56,5% of students said that it's important teachers for succeed. 19,4% of students said that it's important parents for succeed. 12% of students said that its important friends for succeed. Success for secondary schools' students; 1% of students said that its important school structure for succeed. 68% of students said that it's important teachers for succeed. 21,3% of students said that it's important parents for succeed. 9,6% of students said

that its important friends for succeed. Success for high schools' students; 5,3% of students said that its important school structure for succeed. 44% of students said that it's important teachers for succeed. 22,7% of students said that it's important parents for succeed. 28% of students said that its important friends for succeed. Success for all schools' students; 5,1% of students said that its important school structure for succeed. 55,9% of students said that it's important teachers for succeed. 21,5% of students said that it's important parents for succeed. 17,6% of students said that its important friends for succeed. Students' assessment level is differentiated for all the experimental groups in significantly. Family and school are very important at childhood. Friends and family factors' reputations are increasing coupled with increased age. Teacher factor is most important factor at all the experimental groups indeed that is wrong. Colloquially, teacher is most important factor for success. In the same way, this research's results are identical like conventional wisdom. According to scientific papers; only one factor can't make successful. All factors in education what that are managers, PDR, inspectors, officers, servants, parents, students, school bus drivers, canteen workers etc. are important factors for success as teachers as.

Table 23

Opinions about the Best Method for Easy and Fast Learning

Which is the best method for easy and fast learning?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Memorization	67	13,1	13,1	13,1
	Exercises	202	39,5	39,5	52,5
	Visual	109	21,3	21,3	73,8
	Listen to Lectures	134	26,2	26,2	100,0
	Total	512	100,0	100,0	

Table 21 Students' assessment level is differentiated for all the experimental groups in significantly about the best method for easy and fast learning in their schools (Sig>0.01). i.e; Students' assessment level is not resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

Best Learning Method for primary schools' students; 18,5% of students said that important factor is memorization for easy and fast learning. 21,3% of students said that important factor is exercises for easy and fast learning. 20,4% of students said that important factor is visual for easy and fast learning. 39,8% of students said that important factor is listen to lectures for easy and fast learning. Best Learning Method for secondary schools' students; 15,2% of students said that important factor is memorization for easy and fast learning. 35% of students said that important factor is exercises for easy and fast learning. 20,8% of students said that important factor is visual for easy and fast learning. 28,9% of students said that important factor is listen to lectures for easy and fast learning. Best Learning Method for high schools' students; 8,2% of students said that important factor is memorization for easy and fast learning. 53,1% of students said that important factor is exercises for easy and fast learning. 22,2% of students said that important factor is visual for easy and fast learning. 16,4% of students said that important factor is listen to lectures for easy and fast learning. Best Learning Method for all schools' students; 13,1% of students said that important factor is memorization for easy and fast learning. 39,5% of students said that important factor is exercises for easy and fast learning. 21,3% of students said that important factor is visual for easy and fast learning. 26,2% of students said that important factor is listen to lectures for easy and fast learning. As a result, memorization and listen to lectures factors' degrees are decreasing coupled with increased age and exercise factor's degree is increasing coupled with increased age.

Table 24

Opinions about Free Time

What do you do in your free time?					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Computer	132	25,8	25,8	25,8
	Television	103	20,1	20,1	45,9
	Reading	146	28,5	28,5	74,4
	Sports	131	25,6	25,6	100,0
	Total	512	100,0	100,0	

Table 22 Students' assessment level is differentiated for all the experimental groups in significantly about hobbies after school and studies (Sig>0.01). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

Hobbies for primary schools' students; 47,2% of students said that reading. This activity is 24,7% for secondary schools' students. 19,8% of students said that reading for high schools' students. In other respect, 31,4% of primary schools' students are spending time with television or computer at spare-time. 42.6% of secondary school' students are washing/playing television and computer at spare time. This rate is 56.5% for high schools' students. So, age of students as she/he grew older is decreasing reading book rate and interaction of them increasing with technology.

Table 25

Opinions about Having Room for Each Teacher

Is there a room for each teacher in your school?					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	No	436	85,2	85,2	85,2
	Yes	76	14,8	14,8	100,0
	Total	512	100,0	100,0	

Table 23 Students' assessment level is differentiated for all the experimental groups in significantly about a room for each teacher in their schools (Sig>0.01). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

There is no room for every teacher in the public schools. In this case, 14,8% of Students' conscious awareness is not development. Students live in the school structures for 9 hours per day. Nevertheless, they are uninteresting about diagnosis and give chase. Some students are not happy in school. That is the reason why they are coming to school shuffling and strained.

Table 26

Opinions about Having Room for Dialogue

Is there a room for dialogue (between students-teachers-parents) in your school?					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	No	313	61,1	61,1	61,1
	Yes	199	38,9	38,9	100,0
	Total	512	100,0	100,0	

Table 24 Students' assessment level is differentiated for all the experimental groups in significantly about a room for dialogue in their schools (Sig>0.01). i.e; Students' assessment level is resemble each other for experimental groups (Male group, female groups, class group, school group and total group)

There is not a room for dialogue between students-teachers- parents in public schools. In this case, 40% of Students' conscious awareness is not development. Students live in the school structures for 9 hours per day. Nevertheless, they are uninteresting about diagnosis and give chase. Some students are not happy in school. That is the reason why they are coming to school shuffling and strained.

Results or RULA (Rapid Upper Limp Assessment)

Table 27

Opinions about Having Muscle-Skeleton Problem

Have you a muscle-skeleton problem?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	152	29,7	29,7	29,7
	No	360	70,3	70,3	100,0
	Total	512	100,0	100,0	

Table 25 Students' assessment level is undifferentiated for experimental group in significantly about muscle-skeleton problems (Sig>0.05). i.e; 30% of Students have muscle – skeleton problem and 70% of students don't have problem in all experimental groups. (Male group, female groups, class group, school group and total group)

Experimental group who that are giving positive answer 45th question be analyzed on survey form. Traumatized Students' physiological forms are outside of reference values like height and weight.

Table 28

Opinions about Having Body Aching After School

Which part of your body aching after school?		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Waist	40	26,3	26,3	26,3
	Neck	23	15,1	15,1	41,4
	Shoulder	22	14,5	14,5	55,9
	Back	15	9,9	9,9	65,8
	Leg	10	6,6	6,6	72,4
	Knee	9	5,9	5,9	78,3
	Hip	9	5,9	5,9	84,2
	Arm	9	5,9	5,9	90,1
	Elbow	3	2,0	2,0	92,1
	Hand	4	2,6	2,6	94,7
	Foot	6	3,9	3,9	98,7
	Other	2	1,3	1,3	100,0
	Total	152	100,0	100,0	

On the Table 26 students' traumatic problems are showed.

Students' RULA scores who have fall outside the accepted reference value about their height and weight are 5 units. RULA scores of students who normally accepted reference value are 3 units. According to the results, students are working as high risk of injury in a bad posture, if they have body outside the reference values. There is a certain amount of risk on other students work on posture. In the static postural analysis; kyphosis and rate of anterior tilt neck length is high exited, because of theirs, sitting long time in desk, carelessness on posture of work order and schools' table, desk and chairs are not ergonomic.

Most Stated Things in Comments Part

If a school have different parts like sport, music, art; in that schools' teachers are doing discriminate. -Canteens are small and price is so high in canteens. Prices must be controlled. -If a school structure is old, in that school's structural characteristics aren't confirming to MEB's standards because of corridors, stairs, classes' square measure, roof height, closed area's square measure etc. -If a school structure built before 2006, that school's roof height is so low so that school has illumination problems and that schools are illuminating permanently. -Toilets are dirty and toilets don't have soap, paper towel and toilet paper. And toilet cleanings aren't regular.-Female students aren't using the sport areas enough.-Waterworks are old and troubled. Repair is required.-Sport areas are inadequate. Repair and modernize are required.-

School technological infrastructure must be better than now.-If a school is near the main roads, vehicles' noises are very big problem in those schools.-Some of those schools' structures aren't getting heated so classes what that in upper floors, are cold.-Some of those schools' sport areas' roofs have problems especially at rainy days like extraction so sport areas' floors are bad.-School desks aren't ergonomic and many of school desks are fracture, slack and out of order so some of that students have backache.-School gardens don't have banks, chairs etc. enough.-Classrooms' wall paintings' colors are dull and drab. Classrooms' wall painting is very bad so students want alterations for wall painting.-Floors are very bad and floors have problems so students want alterations for floors. -Structures' illumination is very bad and structures' illumination has problems so students want alterations for illumination.-Dining halls aren't good enough so students are waiting in a queue for long times.-At cloudy days, structures are so darkness like night. So students are pessimistic at those days.

Discussion, Conclusion & Implementation

The roof's job is to protect the school building from rain, sun, and wind. A function of the roof is to keep water from getting into the school building. It is a key part of the school building's waterproofing system; therefore, the roof should be kept in good shape. In a pitched roof, high winds might tear off roof shingles or sheets. This is directly related to how well-secured these parts are and if they are corroded or not. The ridge cap should be solidly fixed to the roof sheet so that it cannot be peeled off by the wind. In flat roofs rainwater can be impounded on them, gradually working its way through the school building below. They require a final covering to provide protection from the sun, wind and rain. Over time flat roofs lose their protective covering as they are exposed to sun, rain, and wind. This is how leaks start. Flat roofs are also susceptible to impounding of water when the drainage system is blocked. Impounded water can accelerate the deterioration of the protective covering, and can work its way into the school building. If there is standing water on a flat roof the day after a rain, it is a strong indication that the roof is experiencing a major drainage problem.

Most of the newer school buildings have exteriors planned to be as maintenance-free as possible. A newer school building may feature concrete block or brick walls with breeze and fashion blocks in some walls. But some school buildings may not be new, and the exterior may not be quite as maintenance-free. Even, if new, the school building's exterior will still need a periodic maintenance programmed to protect the materials. The specifics of the programmed will depend upon the materials used and their current condition. The biggest threats of the school building's exterior are water, wind, sun, and in areas near the coast, saltpeter.

Fortunately, problems with plumbing systems do no happen often, but when they do, generally the problems are leaks, which should be dealt with promptly. Damage to the school can be as severe as water from rain; in fact, plumbing leaks often can be a bigger problem. If the water system is under pressure, and a rupture in the water system will cause water to continue spilling into the school compound. Most of the plumbing is out of sight, behind the walls and under the floor, so typically you cannot see the leaks when they occur until they manifest somewhere else.

One of the biggest problems is a break in the water service entry pipe. It may show itself as a slow, dribbling leak, or it can be dramatic, it can blow like a geyser and remove a portion of the ground. The problem usually starts either at the connection with the source or at the point where the pipe comes through the school. What causes these problems? One cause is settlement or some other type of movement in the ground. They can shift and allow the trench to move, but the pipe will not move since it is anchored at both ends; a high sheer stress is

created and the pipe gives way. Whether a slow leak or a dramatic blow off, this type of problem requires excavating the trench, in which the service entry pipe is located, either a portion or the entire trench. When the problem is found, the pipe may be repaired, or under certain circumstances, it may be replaced for its entire length from its origin to the school building.

Structure of School' aims are to maximize access to pupils' toilet facilities during the day to promote the health, wellbeing and learning opportunities of all pupils. Structure must be providing good quality toilet facilities throughout the school. Structure of School' aims are to ensure that the toilet and washroom facilities are suitable for the range of anticipated users, including pupils with disabilities and special needs, with adequate lighting, fixtures and fittings.

The problem is that school toilets may not be high up on the list of a school's budget and priorities for improvement. The state of the school toilets is often, however, the most concerning issue for learners. A written school toilet policy provides a powerful indication to learners and parents/careers that the school values and respects the health, safety and well-being of its learners. A policy enables a school to develop and maintain a shared philosophy and co-ordinate approach to their school toilets and how learners are allowed to use them. It encourages schools to audit the toilets properly and to take into account the needs of learners.

Because of shuffling and strained from school been analyzed;

Students don't go to their favorite schools because students go to schools with their exam scores so their scores are selecting to schools, NOT students. Education system is exam-oriented in Turkey. Students are focusing to just one factor; "exams" like TEOG, OSYS, SAT. Parents are comparing their child/children with others' child/children. School managers and teachers are doing discriminate. Some of students who that; are hardworking students, rich and famous parents' children are getting more attention than other students.

Peer students been analyzed according to gender;

Female students are more careful, more emotional and more awake than male students. Female students' body mass indexes are decreasing with increased age. Male students' body mass indexes are increasing with increased age. Male students' distractibility frequency is greater than female students' distractibility frequency.

Recommendations

All schools should provide:

- Unrestricted access to a toilet, whenever or wherever the need arises.
- Adequate numbers of facilities for both female and male users which ensure sufficient privacy.
- Dedicated unisex toilets, or female and male toilet cubicles, properly equipped, for users with special needs.
- Properly designed toilet and washroom facilities, suitable for the range of anticipated users, with adequate lighting, ventilation, fixtures and fittings.
- Hot water, ideally from a mixer taps, with adequate provision for liquid soap and hand drying facilities.
- Toilet tissue dispensers provided at a convenient height, replenished as needed throughout normal hours of usage.
- Sanitary towel disposal units in all female cubicles (where age appropriate in both primary and secondary schools), serviced on a regular basis.

- An effective toilet supervision regime to ensure proper standards of provision and management throughout normal hours of usage.
- An effective toilet cleaning/inspection regime to ensure adequate standards of hygiene, behavior and cleanliness, throughout normal hours of usage.
- A published school toilet management policy approved by school governors and students, and communicated to all students, parents/guardians and staff.
- A child friendly comments/complaints procedure, for students, parents/guardians and staff to communicate toilet concerns or grievances to the head teacher and/or school governors.

Static working is to work as hard at a certain point. Muscles do not move, but they exerted some effort (i.e. weight lifted him to keep a fixed point). In case of such a study, the body needs oxygen which, achieved by the body due to lack of circulation. Therefore, the muscle' group occurs fatigue and then. Movements are not rhythmic.

In Turkey; lessons' time is 40 or 45 minutes in the school. But according to scientists, a person's maximum steady time is 30 minutes. In Turkey, students do not follow that rule. So students have neck ache, waist ache, back ache etc. Teachers should give advices like that; Students should not giving on single point the center of gravity while standing and sitting and the weight of single point should spread symmetrically.

References

Alp, E. Bozkurt, M. Başçiftçi, İ. (2012). Hastane Malzemelerinin Sağlık Çalışanlarının Postürüne Etkileri. *Sakarya Üniversitesi Fen Bilimleri Enstitüsü Dergisi, 16* (3), 221.

Berner, H. (1994). *Aktüelle Strömungen in der Paedagogik*, 2., Überarbeitete Auflage, Verlag Paul Haupt Bern-Stuttgart-Wien.

Carter, V. G. (1945). *Dictionary of Education.* New York, MC Graw Hill.

Demirel, Ö. (2012). *İlköğretim İlke ve Yöntemleri, Öğretme Sanatı (19.bs.)*. Ankara: Pegem Akademi.

Ertürk, S. (1972). *Eğitimde Program Geliştirme.* Ankara: H.Ü. Basımevi.

Hathaway, W.E. (1988). *Educational Facilities.* Education Canada, Winter / Hiver.

Jordan, A. (2012). *School toilets: Good practice guidance for schools in Wales.* Llywodraceth Cymru Welsh Government, Cardiff, Wales, United Kingdom. http://dera.ioe.ac.uk/13643/7/120124schooltoiletsen_Redacted.pdf

Karasolak, K., Sarı, M. (2011). Mimari Özellikleri Farklı Okullardaki Öğrenci ve Öğretmenlerin Okullarının Binası Hakkındaki Görüşlerinin İncelenmesi. *Çukurova Üniversitesi Eğitim Fakültesi Dergisi, 3*, 40.

MEB (2010). *Eğitim Yapıları Mimari Proje Hazırlanması Genel İlkeleri*. Milli Eğitim Bakanlığı Yatırımlar ve Tesisler Daire Başkanlığı, Ankara.

Mutlu Dünya, 0-18 Yaş Boy & Kilo Gelişim Tablosu, Manisa http://www.mutludunya.net/index.php?option=com_content&task=view&id=49&Itemid=156

Stevens, S.H. (1997). *Classroom Success for the LD and ADHD Child.* Winston-Salem, NC: John F. Blair, Publisher.

TS 12860 (Nisan 2002). Kamu Binalarında Mekân İhtiyacı Standardı, Türk Standartlar Enstitüsü, Ankara, ICS 03.080.20;91.010.99

Uludağ, Z. (2008). İnsan Mekân İlişkisinde Okul. *Eğitime Bakış Dergisi*, *11*, 18.

Uludağ, Z. & Odacı, H (2002). Eğitim Öğretim Faaliyetlerinde Fiziksel Mekân, http://dhgm.meb.gov.tr/yayimlar/dergiler/Milli_Egitim_Dergisi/153-154/uludag.htm

Uludağ, Z. & Odacı, H. (2002). Eğitim Öğretim Faaliyetlerinde Fiziksel Mekân. *Milli Eğitim Dergisi*, 153-154. http://www.oas.org/cdmp/document/schools/maintman.htm

Vural, R. A. & Sadık, F. (2003). İlköğretim Okul Binalarının Fiziksel Açıdan Değerlendirilmesi. Eğitim Bilim Dergisi, 28 (130), 16-23.

Yorulmaz, F. (1991). *Edirne Merkezindeki Orta Dereceli Okul Öğrencilerinde Kaygı Düzeyleri ve Bazı Sosyoekonomik Determinantları.* Tıpta uzmanlık tezi, Trakya Üniversitesi, Edirne.

Yorulmaz, F. *"İdrarı Tutmak Böbrekleri Tehdit Ediyor"* http://www.milliyet.com.tr/idrari-tutmak-bobrekleri-tehdit-ediyor-pembenar-detay-genelsaglik-538680/

Investigation of faculty members' point of view on technology integration: A case study

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Abstract

The main purpose of this study is to explore and describe the making sense of exemplary instructors' technology integration in to higher education courses. In addition to this, it is also aimed to define the opportunities they have, the problems they faced during technology integration and their solutions to these problems, professional development on technology integration, their ways of technology integration, and finally meaning of technology integration. In line with this objective, single holistic case study research design is utilized to understand the meaning of experiences of exemplary instructor with technology integration. Technology integration of an exemplary instructor from a state university in Turkey is selected as unit of analysis. Data is gathered from different sources. The exemplary instructor on technology integration has some opportunities and also some problems with technology integration. However, solutions can be created by using experiences and knowledge.

Keywords: Technology integration, faculty, higher education, case study.

Introduction

Humankind has been trying to deal with the nature of change for more than 2,000 years (Carson, 1999). It indicates that though resistance to change, it is the only way to be developed or improved. Seeming as a turning point to make progress, in life, most things change each day in which people are required to adapt. Changes affect, also, education; especially teaching and learning process. As affected everything in life, students profile has changed in time. Changes affect people's life, naturally. Educational life has the most effected part from the social changes.

There is tendency in instructional activities toward changing regularly, from Ancient Greece to recent. Nature of the education requires changes in time because of the requirement to catch up social changes. While Socrates was using only Socrative method, now educators have been using a lot of diverse methods and techniques in their instructional activities.

In recent years, focus of the instructional design studies have removed toward technology, because needs of the students have changed dramatically over latest 20 years. And instructional design processes have changed dramatically after 1980's because of emerging

constructivist approach in educational area (Wenglinsky, 2005). In this period, technology has emerged suddenly and covered all daily lives. In order to adapt such a big change, teachers or instructors have started to try to learn and take technology in their class with instructional purposes.

In faculties, students have expectation to see technology in their class because they live in technology-overwhelmed life. Educational activities in higher education can be limited by sources. Some insufficiencies can be barrier for technology integration (Butler & Sellbom, 2002). During last decade, technology has a big proportion in educational plans. Faculty members have a tendency to use technology in their classes. Because using educational technology for drill and practice of basic skills can be highly effective according to a large body of data and a long history of use (Kulik, 1994). Faculty members, eager to use technology in their classes, face with some barriers.

The instructors have instructional strategies which holds advantages for both instructor own self and students. Making instructional plans real can be sometimes difficult because of some deficiencies. Therefore, opportunities of an institution are expected to meet demands of instructors. In order to implement any technology integration idea, instructors require instructional, technological, or technical supports; generally.

In brief, tendency of using technology in education is getting stronger, day-by-day. However effective technology use in higher education cannot be observed. With the application of constructivist learning theory into higher education, technology integration increased simultaneously. However there is no study on how faculty members who experienced technology integration into the courses make sense of technology integration in a local context. Therefore this research tries to describe essence of technology integration experiences by faculty members.

Review of Literature

Technology has influence on changing the way of how we learn and how we teach. In addition to this, activities of educational process are required to meet the needs of individuals and society. From this point, integration of technology, which is the inseparable part of the daily life to teaching and learning environment, is inevitable.

When properly infused in teaching and learning environment, technology has an important effect on learning. For example, Wenglinsky (2005) has proved that students' performance is increasing in the classroom that teachers employing technology in constructivist activities. Such studies point out technology support on constructivist instructional activities. As in constructivist approach, teacher can be seen as a key factor in technology integrated instructional activities. Vojtek & O'Brien Vojtek (1999) explain teacher position as;

> *"Teachers will bounce from skill to skill until they land on integrated technology. Only when we truly integrate technology into instruction, using it as a tool to help all students improve their learning, will we finally score*."

Technology, i.e. television, DVD players, computers, multitude of peripherals, distance learning, the World Wide Web; was accepted as the vehicle to educational reform (Ellis, 1994; McKenzie, 1999; Means, 1994; Shelly, 2000). Technology has meaning more than expanded technological tool integration (Januszewski, 2001; McCain & Jukes, 2001; U.S. Congress, 1995). At that point, the perception and meaning of technology integration of instructors has importance on effectiveness of learning (O'Brien Vojtek & Vojtek, 2000). Ted Hasslebring, a software developer at Vanderbilt University [as quoted in Healy, 1999], "The best results we

get are when we have a really good teacher along with the software who can monitor and reinforce what the student is learning. I don't think you can ever bypass the teacher".

Support for having or reaching technological tools, trainings for developing instructors' technology integration knowledge, and professional development for support them are the most critical components in technology integration (Bailey & Pownell, 1998). Competencies of constructivist educators included collaboration skills, learning skills, and community building skills (Darling- Hammond, 1998; Lambert et al., 1997). As Mishra and Koehler (2006) explained, they requires technology knowledge in addition to content and pedagogy knowledge. Also how to use technology in a specific context or with a specific pedagogical method is required knowledge for educators of 21st century (ISTE, 2008). Staff development programs, having the aim to support this type of knowledge for increasing effectiveness of instructional activities with effective technology integration have been implemented.

In order to improve higher education; instructors are expected to implement good practice in undergraduate education. Chickering and Gamson (1987) were defined seven elements for good instruction in undergraduate education;

1. Encourages contact between students and faculty
2. Develops reciprocity and cooperation among students.
3. Encourages active learning.
4. Gives prompt feedback.
5. Emphasizes time on task.
6. Communicates high expectations.
7. Respects diverse talents and ways of learning.

Teacher competencies have changed with the rapid growth of technology in education. Technology expertise is one of the important 21st century teacher competencies proposed by ISTE (2008). Because of this, teachers profile has been changing on this way to adopt themselves to use technology and to develop themselves on technology.

Parallel to this act, higher education institutions has changed their visions sharply. For example, Purdue University decided to take technology integration into their main strategic plan at 2001. And then, they developed instructional technology strategic plan at 2002, which is similar to Georgia University. In the same way, Ohio State University declared their Information Technology Strategic Plan at 2002. This plan indicates that technological services, support and infrastructure are for support both instructional activities and research processes in the institution.

Number of research on technology integration studies have been increasing, which generally focus on teachers' professional development on technology integration. Both preservice and inservice teachers' technology integration abilities were examined, evaluated, and developed by some studies. For example, Doering et al. (2009) tried to contribute teachers' professional development by using technological pedagogical knowledge (TPACK) framework to design online learning environments. In order to measure TPACK, Schmidt et al. (2009) developed a questionnaire which has used with different contexts (Chai, Koh & Tsai, 2010; Archambault & Barnet, 2010). Some researchers reviewed technology integration literature for drawing a clear picture about it. For example, Guzman and Nussbaum (2009) have concentrated on determining teaching competencies for technology integration in the classroom by reviewing the literature.

Having advantages in technology integrated classroom is provedby some researchers. It is shown that educators, who have the chance to integrate technology to the classes, can easily

capture students' interest (Mistler-Jackson, & Songer, 2000) and motivate them to the class (Kulik, Bangert, & Williams, 1983; Software Publishers Association, 1995). Several features of technology that have been variously attributed to a high level of student motivation and performance include communication, collaboration, authenticity, access to real-time information, and first-hand resources. (Fishman & Pea, 1994; Lenk, 1992; Weir, 1992; Riel, 1987; Center for Applied Technology [CAST], 1996; Songer, 1998). Computers and technology are generally touted as being effective in increasing student motivation. In addition to this, technology takes education beyond the class wall (Nobles, Dredger, & Dixon, 2012). This means that education can go beyond classes, schools; students can be involved in educational activities in anywhere and at any time. These educational activities can be opened to the world to interact with other people from all around the world. This adds another meaning to education and gives another extent.

From that perspective, higher education institutions need to catch such changes in educational world. In terms of technology integration, faculty members are expected to integrate technology in their classes. So, there is need to investigate this new phenomena; how they integrate technology in their classes, how their perception on technology integration are, supports and problems of this process, changes on teacher and learner roles

This study aims to clarify present condition of correlation among higher education, technology support, and faculty members' professional development. The purpose of the study is to understand and describe in depth this contemporary technology integration into classes of faculty members within its real-life context. From this point, one main question and five sub-questions are decided to answer with this study. The main question and sub-questions are;

1. How does the faculty member make sense of technology integration into the courses at higher education institution?
2. What opportunities does the instructor have to integrate technology in their course?
3. What are the sources of problems that the instructor has with technology integration (for in-class and out-class usage)?
4. How does the faculty member solve technology integration problems?
5. How does the instructor integrate technology in the courses?
6. How does the instructor develop own-self on technology integration?
7. What is the meaning of technology integration for the instructor?

Significance of Study

Educators have consistently made various assumptions about the relationships between technology integration and student learning. For instance, it is assumed that students who learn in classes where faculty members frequently integrate technology into instruction are likely to exhibit positive perceptions about technology use to enhance their learning. While certain assumptions made about the relationships between computer technology tools and effectiveness of instructors may be true, this study intended to provide data to support or question that which is assumed.

Secondly, many universities across the nation are experiencing rapid technological changes, continuous shifts in the learning environments, and a new generation of students exhibiting varied technology skills. This trend calls for current understanding of faculty technology integration practices. Specifically, this study sought to analyze to what extend instructors demands about integration of technology use into instruction are confronted with the opportunities. Especially; faculty members' experiences with technology integration in terms of their technology use, supports, problems, teaching roles, learning roles, etc. is tried to

understand. This study represents overall and in depth description of an exemplary faculty member's technology integration into the courses.

Method

Research Design

This research study is an in-depth investigation of exemplary faculty member who integrate technology into the courses in a university with a specific focus on the successful practices, problematic situations, and contextual and support elements that faculty member relates to the success of the technology integration. Holistic single case methodology is conducted for this study as it allows understanding technology integration in-depth. As a single case, representative or typical case is seemed an appropriate for this study. The aim is to capture the circumstances and conditions of an everyday or commonplace situation and these single cases are informative about the experiences of the individuals or organizations as exemplary (Yin, 2009). Single cases help to understand a case in-depth without comparison or contrasting. Therefore it makes audiences of the research more clear by making them focusing on a single point.

Case study is defined as an "empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident" (Yin, 2009, p. 18). Case study allowed an examination of the interactions between the contextual factors that were pertinent to the exemplary online teaching within the scope of this study (Yin, 2009). For the purpose of this study, the instructor is chosen as a typical case because of the potential representativeness of exemplary technology integrator into higher education courses.

Research Context and Unit of Analysis

The context of this study is a state university in Ankara Turkey. It has potential technology support for it's members. At this university, administrative issues go on online platforms which uses mailing in order to give information about an event or to make announcement, making online registration to the course or online grading via student affairs system, etc. In brief this university uses technology almost all parts of the organization. This institution has office to support faculty members in terms of technology integration. Especially, learning management systems (LMS) is organized by this center which is Technology Support Office (TSO). This university copes with technical issues for all instructional, administrative and personal activities. For each courses, no matter undergraduate or graduate course; class pages were prepared on LMS. Most of the faculty members use this system; clicker system, social platforms are actively used on campus. As a result of this, the university is an exemplary university in Turkey in terms of technology integration.

The method of the study indicates qualitative sampling strategies, as a nature of this type of studies. Features of this type of samplings are being purposive, being small, and being information-rich (Patton, 1990). Because of the purpose of this study, it is aimed to look at an exemplary instructor who integrates technology in the courses. With this purpose, an exemplary instructor from a public university is chosen as case. This instructor and two students of her are participants of this study.

For this qualitative study, unit of analysis term as chosen because of the nature of case study. Single case studies generally start with determination of unit of analysis. The first step in deciding how you will analyze the data is to define a unit of analysis (Trochim, 2006, Yin, 2009). The unit of analysis is the "who" or the "what" that you are analyzing for your study. A major

designing and conducting a single case is defining the unit of analysis (or the case itself) (Yin, 2009). For this study, Dr. Era's (synonym) technology integration is chosen as unit of analysis. She is an assistant professor at the Department of Educational Sciences at a public university in Turkey. She is originally from Turkey who is female at the age of 32 and full-time instructor at this university. She has seven years teaching experience.

She received her Ph.D. on Curriculum and Instructional Technology and Human Computer Interaction at a state university in USA. She worked as a postdoctoral fellow on Curriculum and Pedagogy in Canada. Dr. Era worked as an instructor and researcher at the Center for Technology in Learning and Teaching at the public university in USA for four years. She also has four years of industry experience working as an instructional designer in an educational software development company in Turkey. She received research and teaching excellence awards from USA. Dr. Era has worked on online course design, program evaluation, and needs assessment projects within the university. Also she has worked on nationwide projects. Her research focuses on technology and teacher education, online learning, and the impact of emerging technologies on education and society.

She has designed technology integrated courses; social media in educational courses, practice and research on technology in teacher education, etc. As a student, she also joined a MOOC about learning analytics. Her research interest is too related to technology: TPACK, learning and teaching with technology, learning and teaching science with technology and inquiry, learning technologies and emerging pedagogies, online pedagogies and online teaching, etc. In addition to her research area, she uses technologies to support her research studies, especially reference management system use; Endnote, Refworks, Zotero, and Mendeley. Connected to her research interest, she has regularly joined technology and education related congress, meetings, conferences, symposiums, etc. as presenter, listener, or chair. For two years, she is the chair of the most prestigious congress on USA which is related to technology integration. Finally, she uses different platforms actively different webpages; Linkedin, Prezi, Facebook, Slideshare, Twitter, Academia, Google Scholar, etc. as her personal interest on technology.

Dr. Era's technology integration was chosen as unit of analysis because of some reasons. First reason was her background. She stated that she graduated from technology related department at the high school and the university. Also, she got master and Ph.D. degree from technology and education related departments. This means, she is dealing with technology and education for a long time. From this point, she is the good example of the instructors who integrate technology into the courses at higher education institutions. Her educational background makes her experiences more valuable.

Secondly, her research area is related to technology. She always do researches on technology integration. For example her master theses is about effects of video-case based instruction on preservice teachers' achievement of course content, and her PhD theses is about transformation of online teaching practice in higher education.

Final one is her personal interest to technology. Designing technology related activities in educational context is her major interest. Her personal webpage gives clues about her technology interest. She has written some small pieces on technology integration, some examples from her previous courses, some webpages which help technology integration.

In addition to her, two graduate students (a male, a female) of Dr. Era are participated into the study in order to meet requirements of validity and reliability issues that are specified in the next parts.

These graduate students have joined at least one course of Dr. Era. The female one is the doctorate student who took "Theories of Learning" course as elective for her PhD study. This is her third semester except scientific preparation for doctorate. Her educational background depends on social politics in education for her master degree and English Literature for her undergraduate degree. She has a wide range of educational background. This is the reason why she has participated into this study. In terms of technology related course, she had not joined any technology integrated course before Dr. Era's this course. She did not accept PowerPoint presentations as technology integration, as another student who is male. He is master student whose advisor is Dr. Era. They worked together on his master thesis, recently; and also he had taken Dr. Era's "Theories of Instruction" course. His educational background is technology focused, his undergraduate degree is from Department of Computer Education and Instructional Technologies. His master thesis is about both designed based learning and TPACK applications. He redesigned TPACK game for four different context (Mathematic education, English Language Education, Computer Education, Science Education). This two students are chosen because of their different educational background.

Data Collection Tools

Documents, interviews, and observations were used as data sources for collecting data on the specific research questions. The data for the study was collected during the fall semester of 2013. Firstly document analysis was done to determine current professional development and technological supports for instructors. The departments; Learning and Student Development Offices (LSDO) which is interested in to arrange professional development training, and Instructional Technology Support Departments (ITSD) are the main sources for employment of document analysis in addition to regulations of the institutions. Secondly, instructor's artifacts of courses, such as syllabus, assignments' guides, evaluation rubrics of assignments or activities, courses' webpages, posts on her webpage, personal information from her institution webpage, etc. were used as data sources with the permission of Dr. Era. With these artifacts, researcher tried to understand how she integrates instructional technology in her courses.

In the second phase, interviews with instructor and her two graduate students were employed to collect data for her demands, how she benefits from current supports for technology integration, and her making sense of technology integration. Stake (2010) gives main aims of using interviews in qualitative research, such as;

a) Obtaining unique information or interpretation held by the person interviewed.

b) Collecting a numerical aggregation of information from many persons.

c) Finding out about "a thing" that the researcher were unable to observe themselves.

In-depth interview type was applied for gaining insight into the participants' experiences, views, perceptions, etc. Open-ended questions were asked in the interview process how Dr. Era felt about their experience with technology, how she sees intuition's technology position, how she applies technology from both her perspective and her students perspectives. These questions were shaped after detailed analysis of literature. In the process of development of interview questions, another instructor was interviewed as a pilot study and she was asked which questions do you want to ask or not to ask, and her suggestions for the study.

Interview with Dr. Era focused on current technological tools that she used in her classes, problems of technology integration, supports to faculty members for technology integration, her views on how technology plays roles in educational settings, etc.

Interviews with the graduate students is basically focused on Dr. Era technology integration way. In the interview, they are asked firstly their relation with the Dr. Era as a student, how they met, how many of her courses they attended, etc. They gave detailed information about Dr. Era's technology perceptions and experiences in the classes. Digital voice recorders were used not to miss any points of interview with the permission of participants. Researcher was transcribed all records by checking them.

It is anticipated that ongoing data analysis took place throughout the study. All of the taped interviews and documents were analyzed. The codes were determined and after second coding process sub-codes and a theme was tried to create. Connections between codes were used to further the understanding the current situation and the demands of instructors.

In addition to interview, observation was conducted to find out technology integration in her courses. So, researcher developed observation scheme that focuses on technological tools and usage of them in the classes. Before and after observation, some of the students were asked about usage of technology in the classes to clarify the Dr. Era's point of view toward technology integration.

Data Analysis

All documents, artifacts, and transcriptions of interviews were performed by using open coding, axial coding and selective coding processes which are represented by Strauss and Corbin (1990). Open coding is first phase of coding process as labeling and categorizing of phenomenon as referred in data. Moghaddam (2006) explains that open coding requires application of what is referred to as 'the comparative method', that is, the asking of questions and the making of comparisons; also data are initially broken down by asking simple questions such as what, where, how, when, how much, etc. Simultaneously, data were compared, contrasted, and grouped with conceptual labels like categorizing by considering their similarities or relations. They are represented in Appendix.

Categories and codes from open coding put into back to make connections between categories in axial coding phase. It refers developing process of main categories and themes. In selective coding phases, researchers are on the way of integration of categories that have been developed to form the initial theoretical framework.

As a method of coding, inductive coding (Thomas, 2006) method is chosen because of not having a structured definition or concept maps for this study in literature. Data were coded line by line within it, labels were given on data. From that point, researcher reached more general labels, which contain sub-labels.

For checking of coding process, another researcher who is familiar with technology integration into educational settings coded randomly selected data to check reliability. Although there is no agreed upon a field standard for inter-coder reliability, 67-79% range is considered acceptable in the field (Krippendorff, 1980). At that process, their agreements and disagreements on codes were counted and be checked inter-coder reliability which meets the determined the criteria with 78% agreement.

Ethical Issues

Before conducting this study, permission from participants were taken to conduct this study. While collecting data, participants were informed about what the purpose of research and research questions before data collection. Also, interview questions were send to them via e-mail to make them familiar with the questions and to inform them about the research to decide whether they really want to participate in this study. Because data collection was not conducted in their session, that can disturb the instructional activities and interrupt students

learning in that session. Only observation part of the data collection was conducted in a living session of the Dr. Era. During this process, observer did not disturb class members and did not join the course as a part of the class, because it was not aimed to conduct *participant observation*.

Trustworthiness

This part includes validity and reliability issues in the nature of qualitative study that is why "trustworthiness" term is selected for this part. With this purpose; credibility, transferability, dependability, and confirmability terms are used in terms of internal validity, external validity, reliability, and objectivity by Lincoln and Guba (1985). As Yıldırım & Şimsek (2008) stated, qualitative research has different methods and techniques from quantitative research on validity and reliability issues.

Credibility was met by triangulation, member checks, and prolonged engagement. Yıldırım & Şimsek (2008) describes triangulation as using different data sources for collecting evidences from the sources and using it for building coherent justification for themes. In terms of triangulation, data were gathered from participants with interviews, institutional documents, and artifacts of the faculty member's courses. Yıldırım & Şimsek (2008) explain member check as making participants check data gathered from them, categories and themes. The participants have an opportunity to react the interpretations. Therefore, participants were asked after coding process what they mean on a topic which researcher could not give meaning. To reach prolonged engagement, data collection and data analysis processes conducted together to understand the need for extra data. Also researcher spent a lot of time on data analysis and interpretation one by one instead of summarizing all data from each participants for reveal a pattern.

Transferability will be provided with rich, detailed description of findings using quotations, themes, and concepts by representing code lists. Unit of analysis part of the study helps to ensure transferability with detailed explanation of both institution and participants. In addition to this, a competent person, who has technology integration research experience, was asked to dependability and confirmability auditing to meet dependability and confirmability.

Researcher Role

As a researcher, my perspectives and beliefs towards technology integration have been formed through my PhD studies. During my academic life, my view of technology integration have changed rapidly from master studies to doctorate studies. I have the chance to see technology integration from different angles: student, novice teacher, research assistant, teaching assistant. My interest started one and half year ago with a doctorate course which is elective for me. I have been dealing with technology in classes from my undergraduate studies as a novice teacher. I prepared lots of technology integrated lesson plan and implemented some of them that I was not aware of integrating technology into the teaching and learning activities. As student, I was afraid when I see the syllabus and it was painful to get through. In time, I cope with technological issues with the help of the instructor who encouraged and motivated all students in the class. With this positive experience by seeing how an instructor manage technology integrated course, I started to think about to make clear features of exemplary instructors who integrates technology.

And also I have joined several massive online open courses (MOOC) to be familiar with new technological opportunities that can be integrated to the courses and try to analyze the features of that courses' instructors. This gave me a perspective and encouraged me to study on this topic.

I see technology integration is help for instructors on the point of what they cannot achieve without technology. Technology is an opportunity to catch the era and also is requirement for 21st century teachers. Learning is carried out the class wall especially technology have the important role to create network especially by communicating with the people around the world. Technology creates an open environment for both students and teachers. Especially, teachers have the opportunity to catch students' learning process and make their job easy to evaluate formatively. Similarly, students have the chance to see their development, control on their self-learning, collaboration and cooperation. I have joined some projects which have technology integration dimensions. During my technology integration studies, I have developed my interest toward technology integration and it is developing day by day.

Results

This qualitative research study tries to explain how an exemplary instructor integrates technology and gives meaning to technology integration in a higher education institution. And also this study tries to make clear technology integration level of the instructor and support for her which given from the institution.

When we analyze Dr. Era's educational background, she is familiar with technology integration. Therefore she has already been integrating technology her courses. Her personal webpage gives information about her technology and educational background. In addition to direct implication of technology integration knowledge, she had designed courses how technology integrated into courses at both K-12 level and higher education level. Technology is both integrated in courses and taught to students in these settings. In order to answer the research questions, six main themes are determined in data analysis process. Results are categorized under these research questions.

What opportunities does the instructor have to integrate technology in their course (for in-class and out-class usage)?

There is a wide range of technological opportunities that had in the institution. If we categorize these opportunities, we can encounter three main categories.

First one is "technological tools" as hardware. Both Dr. Era and her students specify similar tools; such as, computer, projections, mobile phones, tablets, and smart boards. Dr. Era stated that she wants to use mobile phones and tablets but she could not use in her classes. However data from observation indicates that students can use mobile phones and tablets during the session to take some information related to educational news which is the content of the course on that week.

Second one is Web-based tools, which are course webpages, mail groups, google docs, social networks. Edmodo, Digoo, LMS, and Moodle as course webpage generally used in the courses. As web-based opportunity, Dr. Era exploit from google docs, frequently as they mentioned. However social networks are not chosen to use for support the courses with technology. Moreover mail group use is not common among Dr. Era and her students. They generally used mail options of course webpages. Dr. Era stated that:

"We are using mail groups for our research group but I use generally communication tools of course webpages for communicating with the students."

Third one is support dimension. Support is categorized as opportunity because of without support, we cannot mentioned the opportunities that instructors have. Support part has sub-dimensions as no support, individuals, university, and faculty. The conflict can be seen among

the dimensions- no support and others. Dr. Era frequently stated that she has no support to integrate technology in her classes. She means specific supports, such as; encouragement, financial support, under the support title. However some other statements of her show that she has some supports from different sources. For example, individuals help them while she is integrating technology in their classes. Colleagues, students, research assistants, and her own-self can support her on technology integration. In addition to individual efforts, university as an organization gives some support to Dr. Era in terms of Academic Development Program (ADP) which is orientation program for new-comer instructors of the university. As a part of this orientation program, instructors who joined this program are met with some instructional technologies by a professor from CEIT department. In addition to this program, university gives support for LMS, which is a software application for administration, documentation, tracking, and reporting of courses that instructors are giving. Addition to university support, the instructor has support from her own faculty that is an office for technically supporting, named Technology Support Office (TSO). The members of this office help instructors to solve their technical problems. Finally, library is a support source. For example, one of the course assignments was related to literature review so she requested help from library's personal on how to use reference management programs and library e-resources.

What are the sources of problems that the instructor has with technology integration?

Dr. Era has some problems while she is integrating technologies, which are summarized as; web based, technical, student-based, instructional problems.

First one is the web-based problems, which is highly mentioned problems. Dr. Era defined that these webpages require occasionally checking for their updates or their freeness. Availability, sustainability, power cut, and timing are the main technical problems as stated during Dr. Era's interview and students' interviews. Also, student-based problems in her courses are generally faced, that is stated by all participants. Because of students' being unfamiliar with technology and resistance to technology, requirement for perceptional change, the instructor has difficulty. She requires extra time to change students' understanding of technology, and to break their technology resistance. Approximately two or three weeks are needed to change students' perception on technology.

Secondly, the instructional problem is that technology use requires extra time to planning the instructional environment. Perfect planning, lack of support, requirement of encouragement and willingness, and also knowing diverse teaching methods are accepted as instructional problems or challenges by her. She used "Challenges" term instead of "Problems". For her, technology integration does not include instructional problems in it.

How does the faculty member solve technology integration problems?

When we come to the solutions of these technology integration problems, Dr. Era insisted three main topics which are solutions for web-based, technical and student-based problems. So as to solve the web-based problems, she chooses to access admin or members' technology support office who are experts on technology. For technical problems, Dr. Era states that she finds "*key individuals*" in the institutions and consults them about the problems when she faced with a problem. She generally uses personal relationships to solve problems that she faced with.

Student-based problems are tried to solve by following different ways. Consulting individuals can be a way to solve these problems as getting ideas of colleagues or students. Especially, she developed other strategies to solve problems with students. The strategies can be the encouragement of students to use technology in the class or increasing awareness of

students on technology usage as Dr. Era stated that “they are using Facebook or YouTube as a technology and I follow the way to let them notice their previous technology usage.” Because they are not aware of their technology usage knowledge that causes prejudice or resistance to use it.

How does the instructor integrate technology in the courses?

In order to understand how Dr. Era integrates technology in the class, one of her sessions was observed, as mentioned previous. In this session, she correlated technology and instruction by using different ways. Firstly, both the instructor and students used technology. She used technology to manage course discussion because she used students’ sharings to discuss Turkish education system. Students used technology out of class by sharing news, checking readings and assignments from the course page, searching Internet or using video editing programs to do their assignments. In class, they used some technological tools during the session.

Similarly, observation notes indicate that technology is used in another way to create correlation with instruction. Students made out class discussions on the course page. They comment on their friends’ sharings and re-commend on comments of other class members. In addition to out-class discussion, instructors create an in-class discussion environment. This discussion was based on students’ sharings and comments on the course page. In brief, this activity can be defined as discussions on online activities. They can reach weekly readings, their grades, assignments, course documents, etc. from the online platform. For example, as a term project, they are creating a digital story by using video editing tools. In this project they create their own stories on a specific topic related to education as a digital story.

Dr. Era gives importance to technology usage which is supported by her personal communication tools. For example, she shares her e-mail address, personal webpage address, twitter account and twitter hashtag for that specific course to communicate with that class’s students of the class. All course syllabuses have “Course Technologies” parts which have a brief introduction to technological tools, such as what the purpose to use it and how to enroll and use it. Also syllabuses of the courses include online sources which help students to do their assignments, increase their knowledge, etc. They are used for course activities such as discussion forums, assignment submissions, sharing news related to course topics, and accessing to the course calendar, timeline, and materials as stated in the course syllabus. Main purpose is to create a collaborative learning community.

All of her courses have course principles, which are the same, are based on technology, such as participation, sharing, evaluation, collaboration, reflection, application. She uses a figure to illustrate it which is Figure 1.

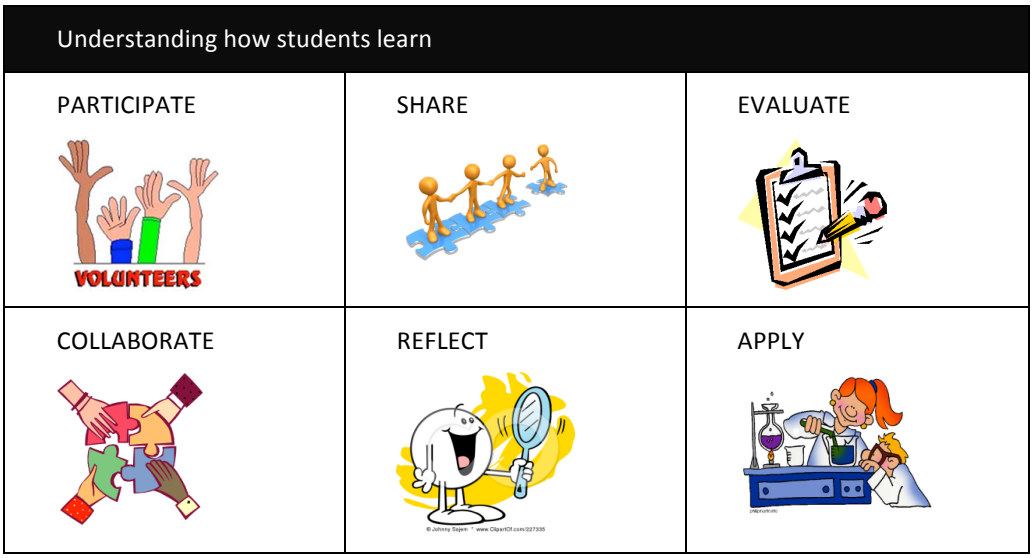

Figure 1. Course principles of Dr. Era

She also uses online assignments on her classes. For example, online reflection on in class activities, reading reflections on course pages, online discussion on weekly readings, submitting term assignments to online platforms, reaching course documents, etc. She generally indicates that these online activities help sharing of the sources and knowledge, collaboration of class members, and connection to the world. These online activities have important percentage on students' grades. One of the interviewed students stated that;

> *"If we did not use LMS for online discussions and Diigo for sharing sources, I could not know my classmates names. I have a chance to meet my classmates via these tools."*

For all courses she developed a list for references which include both offline and online sources. An online source can be an article, a video, a blog page, a piece of newsletter, or a personal webpage post. She tries to use almost all types of online sources.

Her classes can be defined as exemplary technology integrated classes. This innovative instructor has influence on her students necessarily as exemplary. For example, one of the interviewed student indicated that;

> *"To be honest, I did not assume that Dr. Era could use technology in her classes in such an intense way. It was surprised me although I took a lot of technology related courses."*

How does the instructor develop own-self on technology integration?

Professional development dimension is another part of this study. At this part, Dr. Era summarized her professional development on technology integration. As mentioned previous, she has an educational background on technology, with depth knowledge on technology integration. Her educational background goes beyond higher education. Undergraduate and graduate education of the instructor are about instructional technologies. Also her research interest, readings, and online searching supply her professional development. As she stated;

> *"My research topic is this so I follow it willy-nilly. For example, we used digital storytelling method and Edmodo as course webpage at this semester and next semester*

we will use another technological tools. I really like to try new things that I saw or found."

This quotation gives clues about how she approaches to technology integration. She really enjoys trying new things as she stated. And it helps her to be an innovative instructor.

In terms of professional development, she has not joined training, a workshop, or institutional training related to technology integration. All the trainings, which are given by institution, could not meet her needs. She generally develops herself individually, instead of joining training.

What is the meaning of technology integration for the faculty member?

Meaning of technology integration for the instructor is the final part of this study. The meaning of technology integration has five categories; she thinks that technology makes her job and students' learning more easily, she controls self-learning of students, she can save her time while using technology on her courses, she believes that technology supports students specifically instead of traditional learning environments and she sees technology integrated learning environments as student-centered, collaborative, innovative, and connected to the world, supporting creativity and authentic productivity. Also technology helps her in order to catch era and no let the instructors falling behind the students in terms of technology usage. For example, one of her students stated that;

"For example, a Finnish person joined to our Diigo page, later. He started to share information about Finnish education system. He shared some ideas on this system and I had information about this educational system out of the blue. Even I wondered and download the core curriculum of Finland. And even, we are seeking Finnish education system with my friend for another course."

Dr. Era thinks that technology changes both teacher and student roles in instructional environments. Teachers become facilitators and learning designers. Also, they have to give feedback in technology integrated courses, evaluate formatively students' learning. Students' roles have changed dramatically from being passive consumer to active producer. In this process, they have to learn how they learn effectively by taking the responsibility of learning. This means that they are aware of their self-learning. Overall, technology integration for Dr. Era is summarized by her master students as;

"Technology is on right top corner of the course. As you know I am technology person and right top corner of a website takes attention of the users and for me technology is on the top right corner which is the most attractive point of the course."

Changing the educational processes is the main effect of technology integration for Dr. Era. She gives emphasis on the role of technology on changing the educational practices. In one of the posts in her webpage, she defines the value of technology integration,

"I value the power of social tools in creating, sharing, and distributing knowledge that crosses the boundaries of time and space. Technology integration is a very integral part of my teaching, not just because I do research on how technology enhances and changes educational practice, but also I explore the question of how it can transform my teaching in higher education…"

Technology integration, higher education courses and Dr. Era are combined under a metaphor from her students. In the interview of doctorate student, she drew the picture which is a sailor goes to discover new places with a ship. Sailor is Dr. Era knows how to use her ship which is technology, and the new places are learning of students who are crew in the ship.

The master student defined the Dr. Era as a master chief in the kitchen. Students are the tester of meal, technology is forks, spoons, knifes. Meal is the content. "Master Chief" prepares meal and presents to the tasters with the equipment which help them to eat easily. If you forget any of them there could be some problems for tasters.

In two metaphors, teachers is on the main role. As she defined she is facilitator, designer, and promoter of the teaching and learning processes. Students are all active in the metaphors. They always on their own shoes, give effort to learn something which is similar with Dr. Era's statements.

Finally, the overall Dr. Era's technology integration is defined by her student as;

> *"Technology is important for Dr. Era. Moreover, this is her research area and I could not think she can present any course without technology. She always tries new things. Accordingly, one of her research area is this. I believe technology take an important place in her life. However, she does not think that technology should be in the educational environment, always. She thinks technology helps to increase learning pace and it is useful in education. This is a reality and we have to think how we use it effectively in the education. And I believe that she does this with her innovative nature."*

Parallel to this definition, her the next statements explains how she sees technology in education;

> *"With development of technology, new technologies have new opportunities in itself. We can do the things that we could not do in traditional classes by using these new opportunities. Actually, I pursue these things. The main question is "What are we doing with technology that we could not do without it?" I am searching for this…"*

During the technology integration process, the instructor have some opportunities to integrate it into their courses. She has some problems which make difficulties in this process. However instructor has the ability to overcome these difficulties and her education and research area supports her to solve these problems and to develop her professionally. She makes sense of technology because of different reasons and her views on technology generally focus on changing roles in the education.

Discussion, Conclusion & Implementation

The main purpose of this study is to look at exemplary instructors' technology integration by focusing on opportunities, problems and solutions, ways of technology integration, professional development on technology integration, and meaning of technology integration, that related to the success of their teaching with technology integration.

Using the case study, the research allowed for an in-depth look at the case of a successful instructor who integrate technology into the courses and understand both meaning of technology integration and the sources that support their success. The university did not have a centralized technology integration policy which gives opportunity for examining exemplary instructors in terms of technology integration by having flexible thinking and implication opportunities.

Technological and web-based tools as computer (Franck & Langenkamp, 2000), mobile devices, smart boards, projections (Gülbahar, 2008), course webpages (Holland & Muilenburg, 2011), social media (Moran, Seaman, & Tinti-Kane, 2011), mail groups (Hubschman, 1996), etc. are used most frequently in educational context.

Technological opportunities can meet some needs of instructors to some extent providing them awareness of technological opportunities (Surry & Land, 2000). At that point, the importance of institutions' roles have emerged that their advertisements on innovations on technologies, workshops, trainings, mentoring programs, group works, etc. (Leh, 2005) make instructors to integrate technology. This also helps to develop personal interest on technology.

The problems are faced with technology integration (Okojie, Olinzock & Okojie-Boulder, 2006) such as web-based, technical, student-based, and instructional problems. Availability and sustainability of the webpages, timing and power cut problems causes difficulties for technology-integrated courses. As instructional problem, perfect planning, lack of support, requirement of encouragement and willingness, and knowing diverse teaching methods are accepted as instructional problems. In order to solve these problems, the exemplary instructor could solve the problems by developing strategies by own self. Results indicate that in order to eliminate the problems, instructor needs support from institution, colleagues, students, and research assistant. Mentoring, trainings, workshops are offered by some researchers (Leh, 2005, Koehler, Mishra, Hersey & Peruski, 2004).

As technology integration, the exemplary instructor chooses some strategies. For example, course materials are shared on online platform. Assignments are given online and submitted. Some parts of courses are going on course pages. More than one website, different presentation tools, technology related assignments, online discussions, online sharing, online communications with class members and people around the world are the parts of the courses of exemplary instructor.

Being experienced on teaching in both traditional and technology integrated courses have importance on success of the instructors. From the meaning of technology for exemplary instructor, technology is used to make the job easier and to reach the goals which could not reached without technology. Technology is seen as the way of making students to reach goals that could not gained by students. Also the exemplary instructor insists on importance of technology on syllabuses, course content, and communication, encourages students to use technology, and helps them to overcome their technology resistance.

Li and Pitts (2009) state that "the use of web-based learning technologies has increased dramatically over the past decade providing new opportunities and avenues for students to interact with their professors virtually using computer-mediated communication technologies" (p. 175). Because of this, the exemplary instructor who integrates technology in the courses needs some technological opportunities, support from different sources, development professionally. Under these conditions, the missing part could be technology integration awareness that helps to develop technology integration view. Once instructors jump into the technology integration, they could face with the problems mentioned previously. By gaining experiences, some strategies can be developed to overcome these problems.

Implications

Implications from this study can be categorized into two parts, for further research and practice. This research is focused on single case, similar procedure can be conducted by using multiple case designs in order to see different views of exemplary instructors on technology integration. To make clear the acceptance of the exemplary instructors, research questions can be redesigned by focusing on the point.

In the practice part, there is need to increase awareness of instructors to make them exemplary by using workshops, inservice trainings, mentoring programs, etc. Also support

from institution is desired by instructors. Encouragement and motivation can be ensured by the institution, verbally or written. Using extrinsic motivators can be other solutions.

Limitations

Data is gathered from only the instructor and her two students for this study because of time limitation. More data could be gathered from Dr. Era' colleagues and her undergraduate students to enlarge understanding of Dr. Era' technology integration view.

References

Archambault, L. M., & Barnett, J. H. (2010). Revisiting technological pedagogical content knowledge: Exploring the TPACK framework. *Computers & Education*, *55*(4), 1656-1662.

Bailey, G. D., & Pownell, D. (1998). Technology staff-development and support programs: Applying Abraham Maslow's hierarchy of needs. *Learning & Leading with Technology*, *26*(3), 47.

Butler, D. L., & Sellbom, M. (2002). Barriers to adopting technology. *Educause Quarterly*, *2*, 22-28.

Carson, D. J. (1999). Climate modelling: achievements and prospects. *Quarterly Journal of the Royal Meteorological Society*, *125*(553), 1-27.

Center for Applied Technology. (1996). The role of online communications in schools: A national study [Online]. Retrieved from: http://www.empowermentzone.com/ol_study.txt

Chai, C. S., Koh, J. H. L., & Tsai, C. C. (2010). Facilitating preservice teachers' development of technological, pedagogical, and content knowledge (TPACK). *Journal of Educational Technology & Society*, *13*(4), 63-73.

Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, *3*, 7.

Darling-Hammond, L. (1998). Teachers and teaching: Testing policy hypotheses from a national commission report. *Educational Researcher*, *27*(1), 5-15.

Doering, A., Veletsianos, G., Scharber, C., & Miller, C. (2009). Using the technological, pedagogical, and content knowledge framework to design online learning environments and professional development. *Journal of Educational Computing Research*, *41*(3), 319-346.

ELLIS, J. (1994). Distributed cognition: an alternative framework for analysing and explaining collaborative working. *Journal of Information Technology*, *9*, 119-128.

Fishman, B. J., & Pea, R. D. (1994). The internetworked school: A policy for the future. *Technos: Quarterly of Education and Technology*, *3*, 22-26.

Franck, L. R., & Langenkamp, M. L. (2000). Mandatory education via the computer: Cost-effective, convenient, and creative. *Journal for Nurses in Professional Development*, *16*(4), 157-163.

Gulbahar, Y. (2008). ICT Usage in Higher Education: A Case Study on Preservice Teacher and Instructions. *Online Submission*, *7*(1), 32-37.

Guzman, A., & Nussbaum, M. (2009). Teaching competencies for technology integration in the classroom. *Journal of Computer Assisted learning*, *25*(5), 453-469.

Healy, J. M. (1999). *Failure to connect: How computers affect our children's minds-for better and worse*. Simon and Schuster.

Holland, C., & Muilenburg, L. (2011, March). Supporting student collaboration: Edmodo in the classroom. In *Society for Information Technology & Teacher Education International Conference* (Vol. 2011, No. 1, pp. 3232-3236).

Hubschman, B. G. (1996). The effect of mentoring electronic mail on student achievement and attitudes in a graduate course in educational research. *ProQuest ETD Collection for FIU.* Paper AAI9700485. http://digitalcommons.fiu.edu/dissertations/AAI9700485

Januszewski, A. (2001). *Educational technology: The development of a concept*. Libraries Unlimited.

Koehler, M. J., Mishra, P., Hershey, K., & Peruski, L. (2004). With a little help from your students: A new model for faculty development and online course design. *Journal of Technology and Teacher Education*, *12*(1), 25-55.

Krippendorff, K. (2012). *Content analysis: An introduction to its methodology*. Sage.

Kulik, J. A. (1994). Meta-analytic studies of findings on computer-based instruction. *Technology Assessment in Education and Training*, *1*, 9-34.

Kulik, J. A., Bangert, R. L., & Williams, G. W. (1983). Effects of computer-based teaching on secondary school students. *Journal of Educational psychology*, *75*(1), 19.

Lambert, L., Walker, D., Zimmerman, D. P., Cooper, J. E., Lambert, M. D., Gardner, M. E., Szabo, M. (2002). *The constructivist leader* (2nd ed.). New York: Teachers College Press, and Oxford, OH: National Staff Development Council.

Leh, A. S. (2005). Lessons learned from service learning and reverse mentoring in faculty development: A case study in technology training. *Journal of Technology and Teacher Education*, *13*(1), 25-41.

Lenk, C. (1992). The network science experience: Learning from three major projects. In R. Tinker (Ed.), *Prospects for educational telecomputing: Selected readings* (pp. 51-60). Cambridge, MA: Technical Education Research Center.

Li, L., & Pitts, J. P. (2009). Does it really matter? Using virtual office hours to enhance student-faculty interaction. *Journal of Information Systems Education*, *20*(2), 175.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75). Sage.

McCain, T., & Jukes, I. (2001). *Windows on the future: Education in the age of technology*. Corwin Press.

McKenzie, J. A. (1999). *How teachers learn technology best*. FNO Press.; Means, 1994; Shelly, 2000).

Mishra, P., & Koehler, M. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *The Teachers College Record*, *108*(6), 1017-1054.ISTE, 2008).

Mistler-Jackson, M., & Songer, N. B. (2000). Student motivation and Internet technology: Are students empowered to learn science?. *Journal of Research in Science Teaching*, *37*(5), 459-479.

Moghaddam, A. (2006). Coding issues in grounded theory. *Issues in Educational Research*, *16*(1), 52-66.

Moran, M., Seaman, J., & Tinti-Kane, H. (2011). Teaching, Learning, and Sharing: How Today's Higher Education Faculty Use Social Media. *Babson Survey Research Group*.

Nobles, S., Dredger, K., & Dixon, M. (2012). Collaboration beyond the classroom walls: Deepening learning for students, preservice teachers, teachers, and professors. *Contemporary Issues in Technology and Teacher Education*, *12*(4), 343-354.

Vojtek, B., & Vojtek, R. O. B. (2000). Off and running. *Journal of Staff Development*, 21(1), 76-78.

Okojie, M. C., Olinzock, A. A., & Okojie-Boulder, T. C. (2006). The pedagogy of technology integration. Retrieved from:http://scholar.lib.vt.edu/ejournals/JOTS/v32/v32n2/okojie.html

Riel, M. (1987). The intercultural learning network. *Computing Teacher,* 14, 27–30.

Software Publishers Association. (1995). *Report on the effectiveness of technology in schools,'95-96*.

Songer, N.B. (1998). Can technology bring students closer to science? In K. Tobin & B. Fraser (Eds.), *The international handbook of science education* (pp. 333–348). AA Dordrecht, The Netherlands: Kluwer

Stake, R. E. (2010). *Qualitative research: Studying how things work*. Guilford Press.

Surry, D. W., & Land, S. M. (2000). Strategies for motivating higher education faculty to use technology. *Innovations in Education and Teaching International*, *37*(2), 145-153.

Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, *27*(2), 237-246.

Trochim, W. M. (2006). *The research methods knowledge base* (2nd ed.). Retrieved from: http://www.socialresearchmethods.net/kb/

U.S. Congress-Office of Technology Assessment. (1995). *Teachers & technology: Making the connection*. Washington, DC: U.S. Government Printing Office.

Vojtek, B., & Vojtek, R. O. B. (1999). Flung into Motion. *Journal of Staff Development*, *20*(1), 67-69.

Weir, S. (1992). Electronic communities of learners: Fact or fiction. In R. Tinker (Ed.), *Prospects for educational telecomputing: Selected readings* (pp. 87-109). Cambridge, MA: Technical Education Research Center.

Wenglinsky, H. (2005). Technology and achievement: The bottom line. *Educational Leadership*, *63*(4), 29.

Yıldırım, A., & Şimşek, H. (2008). Sosyal bilimlerde nitel araştırma [Qualitative research methods in social sciences]. (6. Baskı). *Ankara: Seçkin Yayınları*.

Yin, R. K. (2009). *Case study research*. Sage publications.

Evaluation and philosophical foundations of teacher training programs

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Abstract

Education system constitutes the basis of human education policies of a country. Quality of education system determines quality of individuals to be educated. Education system provides success to the degree of effectiveness of the programs implemented in the educational process. Program effectiveness is only possible with the efforts of teachers who plan, implement, evaluate and develop the teaching and learning process. This situation requires training of highly qualified teachers. The issue of teacher education has been the most important issue of education systems at all times. Changes in personal and social needs cause changes in education and schooling approaches, and influence the philosophy of teacher training system. The aim of this research is to evaluate the developments in the teacher training system through its historical process along with changes in education systems, and philosophies influencing these changes. Within this basic framework, curricula of teacher training programs in our country are examined starting with the first teacher training institution Dar-ul Muallimin (Teacher Training School), and philosophical changes affecting these programs are introduced. This research is designed as document analysis, one of the qualitative research methods. In conclusion, the teacher training programs, implemented from Tanzimat Era till today, were found to be affected by different philosophical thoughts and these programs changed accordingly. It is also emphasized that in the changes and developments of the teacher training programs in our country the starting point should be the educational needs of the society instead of political expectations.

Keywords: Teacher training programs, program assessment, program philosophy.

Introduction

The education system is the most important basis that constitutes a country's human development policies. The quality of the education system determines the quality of education itself. The education system ensures the effectiveness of curricula implemented in educational process. Teachers, no doubt, are the planners, practitioners, assessors, and developers of the education system. Improving education processes in line with final objectives therefore is possible only through qualified teachers. Training teachers who will effectively fulfill general and specific objectives of education is under the responsibility of those who decide the country's education policy. One of the most significant points to be considered in achieving this objective is the programs implemented in teacher training and education process. Teacher training programs -undergraduate programs applied in faculties of education- are a fundamental feature that forms both teachers and the country's educational profile.

It is hard to speak of a perfect training program in such a changing world and an evolving social order. Training programs, hence, have to demonstrate change and development that meet the changing needs of society and individuals. Many researchers have studied what kind of a process is necessary for a training program that will be developed or changed. In this regard, it is possible to find a lot of methods and approaches in the literature for assessing form and process of a program. Some of them are for the objectives of programs. They embrace the judging method on the effectiveness of the program by determining the objectives and as a result of an assessment whether it is appropriate for these objectives or not. Focusing on inputs, processes, and outputs of a program, on the other hand, some researchers tend to evaluate a program through interaction among these procedures. After

assessing a program by using these methods drawing the main lines of a process in a scientific program assessment, it is developed and continued or changed and replaced with a new one (Yüksel & Sağlam, 2014).

In Turkey, institutions for teacher training go back to the establishment of Darülmuallimin (Teacher Training School) in 1848. After this date, it is seen that various training schools have been established in order to meet the teacher shortage, and many innovation and development policies have been implemented in order to increase the qualification of teachers.

Objective

The aim of this research is to examine the developments in teacher training systems within the historical process, and the philosophy of changes in training programs as a result of these developments. This research, more specifically, aims to demonstrate the impacts of political, socioeconomic, and cultural changes that have taken place in Turkey on the teacher training programs. After putting forward the results, it presents certain suggestions for the practitioners of the field.

Method

This study is designed as document analysis, one of the qualitative research methods. In this study, scientific research, thesis, journal articles and relevant literature on training programs are carefully reviewed. With the data obtained, it presents a useful chronology of teacher training schools, and evaluates the changes in curriculum implemented in these programs. After these analyses, the contents of programs are examined in detail and philosophical foundations of these programs were evaluated.

Results

History of teacher's training schools in Turkey began with the establishment of Darülmuallimin in 1848. After secondary education training, Darülmuallimin-i Sıbyan (School for Primary Education, 1868), Teacher Training Schools in İstanbul (1924), Village Teacher Schools (1937), Village Institutes (1940), Education Institutes (1946), Higher Teacher Education Schools (1951), and after 1980 with the establishment of Council of Higher Education, Faculties of Education have been main institutions for training teachers.

Curricula and their contents implemented in teacher training schools were subjected to a similar change and development process in parallel with the transition of the structure of schools. It could be seen that there were three major components of curriculum applied in Darülmuallimin as courses on professional, liberal, and pedagogical teaching knowledge (Akyüz, 2010, p. 185; Darülmuallimîn Nizamnamesi, 1851). The period of study in this school was three years. Method of Expression and Teaching (Usul-i İfade ve Talim), Persian, Arithmetic, Geometry, Planimetry, Astronomy, and Geography were the main courses taught in this school (Darülmuallimîn Nizamnamesi, 1851). In an attempt to train primary school (İptidai) teachers, Darülmuallimin-i Sıbyan was founded on 15 October 1868 (Taşdemirci, 1999). Study of education, at the very beginning, was one year in this school and its curriculum contained Religious Sciences, Knowledge of Proper Pronunciation and Reading (İlm-i Mahariç ve Tecvid), Calculation, History, Geography, Dictation and Formal Writing, Calligraphy, Turkish Grammar, and Spelling with New Method (Akyüz, 2010, p.181).

In 1870, with the purpose of training female teachers for primary and secondary schools for girls, a Darülmuallimat (Training School for Girls) was established with primary and secondary education divisions. The period of study for primary education division was two years, and three for the secondary education. For the former, it was projected that a course called Method of Teaching and certain courses just for girls such as Home Economics, Needlecraft, and Tailoring. In the first year of the study, the course on the teaching method was two hours while it was just one hour in a week with hands-on training in the last year (Binbaşıoğlu, 1995, p. 25).

Higher Teacher's School, called Darülmuallimin of Istanbul, established in 1874, including primary, secondary, and high school education (Altın, 2008). The period of study for the primary education department was two years and it was three for secondary and high school education departments. It is surprising to find that there were no courses on the profession of teaching in secondary and high school education levels while there was Method of Teaching in primary education (Akyüz, 2010, p. 185). Okçabol states that Higher Training School, established to train teachers for high school, was closed after one year and reformed as Higher Training School for Men in 1891. Higher Teacher School consists of Primary, Secondary and High school education and its curriculum involves Teaching Method and Pedagogy classes (Taşdemirci, 1999).

After the proclamation of the Second Constitution, the Primary department of Istanbul Darülmuallimin became an independent school and its period of study was increased to three years (Akyüz, 2010, p. 279). In the provinces, on the other hand, the period of study in primary education programs was reduced to two years with the Constitution, and then it was increased up to four years but due to continuous wars it was not possible to be completed (Ergün, 1996, p. 430-434). During this period, outside of Istanbul, there were four training schools for primary education in Konya, Ankara, Diyarbakır, and Kosovo. Period of study in these schools was three years: those who graduated from madrasah were able to enter the first year without examination, to enter the second year directly they were required to graduate from a five-year High school, and seven-year High school graduates could enter directly to third year. In these schools, there was only one course on teaching and profession called as İlm-i Terbiye ve İdare-i Mekatib (Knowledge of Education and Management of School). Darülmuallimin-i Rüşdiye that was established as the first training school was closed down with primary education schools (Ergün, 1996: 435,436).

The Higher Teacher's School, closed in the constitutional era, was reopened in 1910 and renamed as Darülmuallimin-i İdadi (Training School for High School Education). Graduates from seven-year high schools and those who could document that they had equivalent qualifications were able to enroll in this school. The objective of this school was to train teachers for secondary education and teacher's schools in the provinces (Ergün, 1996, p. 437). Students of the Higher Teacher School, in this period, began attending the Darulfünun (University) in order to take some -and after 1914 all- of their classes within their curriculum prepared as high school science lessons. After 1914, on the other hand, they began taking all their classes in Darülfünun (Okçabol, 2005, p. 40).

Darülmuallimat, in this period, remained as the unique training school in its own kind. As a part of this school, Darülameliyat-i Aliye was brought in 1913 in order to train teachers for high school education. It was consisted of three departments as Primary, Secondary and High School. İptidai was to train teachers for primary schools; İhzari was to primary education professors and inspectors. The last one, Ali, had three sub departments as Literature, Science and Mathematics, and its graduates might become teachers for secondary and high schools (Akyüz, 2010: 282). Besides, as a division, Ana Muallime Okulu (Kindergarten) was established

to train kindergarten teachers. Darülmuallimat thus became a school that trained girls as teachers in all fields. The Kindergarten Teacher's School was closed four years after starting its education and was re-opened in 1827-1928 (Okçabol, 2005: 40).

With the Republican Period, 1 September 1924, Darülmuallim schools were renamed as Training School for Boys, and Darülmuallimat as Training School for Girls (Yüksel, 2011, p. 36; Karslı & Güven, 2011, p. 62). In the early years of the Republic, primary schools, therefore, training schools for primary education had priority since the majority of society was illiterate. Taking into account that the majority resided in the country, training schools for primary education were divided into two parts as teachers for primary and village schools. In addition to these efforts, they added one Pedagogy class in 1926-1927 academic year and two classes next year into secondary education curriculum to train teachers (Akyüz, 2010: 381).

In 1926, first Secondary Teacher's School was established in Konya with a two-year period of study in order to train teachers for secondary schools, primary training schools and practice schools, and inspectors for primary education (Küçükoğlu, 2004). This school was moved to Ankara in the 1927-1928 academic year. After one year with the establishment Pedagogy department it was renamed as Gazi Orta Öğretmen Okulu ve Eğitim Enstitüsü (Secondary Teacher's School of Gazi and Education Institute) (Binbaşıoğlu, 1995, p. 140; Akyüz, 2010, p. 386).

After the alphabet reform of 1928, to find a quick solution for the problem of illiteracy, recruited young soldiers were taught how to read and write and when they went back to their villages they taught children and younger boys how to read and write with this new alphabet. Those who became literate in their military services later attended a short education about seven to eight months in Eskişehir-Çifteler Educator Training School to be sent to three-year village schools (Taşdemirci, 1999). Positive results of Eskişehir-Çifteler Educator School gave way to re-open the Village Teacher's Schools in 1937. In Eskişehir-Çifteler and İzmir Kızılçullu, a five-year Village Teacher's School was established to train teachers for primary education. These schools were the early basis of Village Institutes that would be formed in 1940 (Binbaşıoğlu, 1995, p. 140).

By the law of Village Institutes, Village Teacher's Schools took the name of Village Institute and their period of study was determined as five years after five-year primary education. While there were just ten new Village Institutes in 1940, their number was doubled in 1944. There was no specified stable curriculum of Village Institutes during their Trial period (1937-1943). Every institute was free to determine their own curriculum according to their objectives and carried it out after having respective ministry approval (Aydın, 2007: 84). Flexible curricula changing from institution to institution were considered necessary both due to the settlement of related problems and student-oriented issues, especially in the early beginnings (Bahadır, 1994). With the regulation in 1943, a certain curriculum was standardized for all institutions. Their curriculum again faced some changes in parallel with the new developments in politics (Akyüz, 2010, p. 394-395).

Village Institutes that were formed both in an attempt to provide teachers for village schools, and train teachers with necessary knowledge and experiences in social, cultural and economic life of a village to improve life conditions. Accordingly they increased the villagers' level of education and power of production, removed with a series of legislative regulations, firstly in the 1952-1953 academic year when they were combined with teacher's school and secondly in 1954 they were included into the Primary Education Training Schools and were discarded (Binbaşıoğlu, 1995, p. 20). Two kinds of Primary Education Teacher's School were added after 1954, one of them had three-year period of study after secondary education and

established mostly in cities, and the other was transformed from village institutes having six-year period of study after primary education (Sağlam, 2011: 165).

As a part of Hasanoğlan Village Institute, in 1942-1943 academic year, a Higher Village Institute was formed to train teachers who would give lectures on pedagogy classes taught in Village Institutes. Graduates from Izmir Kızılçullu and Eskişehir Çifteler first voluntarily entered this school in 1942 (Toprak, 2008).

Courses of Gazi Training Institute were reorganized with new curriculum in 1941 and added a class in Education and Psychology of Problem Children. In addition to this, courses on Educational Organization and Inspection were separated, two-hour Education Organization in a week taught in the first semester and two-hour Inspection in second semester. The philosophy class was replaced with courses on logic, method, and philosophy. In the very beginning of 1944-45 academic year, Necati Education Institute was opened and it has only the departments of Science and Education. Later, Istanbul Education Institute followed it (Binbaşıoğlu, 1995, p. 143).

Higher Teacher's School of Istanbul, closed in the beginning of 1949-1950, was reopened in 1951, and Higher Teacher's School of Ankara was opened. In the 1959-1960 academic year, Teacher's Technical School of Istanbul and Higher Islamic Institute of Istanbul were established; the latter had an intention of training teachers for Imam-Hatip high schools. Its curriculum, however, did not include any course on teaching profession (Okçabol, 2005, p. 58).

In the 1963-1964 academic year, Girl's Institutes had a department of Child Development and Care, and its graduates become teachers in kindergartens. By the 1960s, new education institutes were introduced in order to meet the increasing need for teachers, and as result their number reached eighteen. In education institutes, surely different form each other; there were a total of twelve major fields in which teachers were trained. Some of them had three-year periods of study and some had two. After the 1967-1968 academic years, the period of study was fixed as three years for all majors (Sağlam, 2011, p. 169).

Primary school teachers were trained in Primary Education Teacher's Schools like three-year high schools until the 1970-1971 academic year. Their period of study was increased according to former graduation: four years after secondary education and seven years after primary education (Binbaşıoğlu, 1995: 350). Prospective teachers were required to graduate from a higher education institution regardless of training level by a regulation issued on 14 June 1973 as the Fundamental Law of National Education (Okçabol, 2005, p. 68). Two-year Education Institutes were formed within the scope of Primary Education Teacher's Schools to train classroom teachers for primary schools in 1974-1975 (YÖK, 2007a). Other Primary Education Teacher's Schools that have no education institute were reorganized as Teacher's High Schools (Akyüz, 2010, p. 383).

The department of Child Development and Education, which encompassed four years of study in the Higher Technical Teacher's School for Girls, was the only institution that trained teachers for preschool education. Preschool training associate degree programs were introduced to meet the needs of preschool teachers (Sağlam, 2011, p. 160).

The number of Education Institutes was reduced to ten from eighteen and their names were changed to Higher Teacher's School with a decision by Ministry of Education in 1978-79 academic year. The period of study in these schools was four years and they continued to function until the 1981-82 academic year (YÖK, 2007a).

In 1982-83 academic year, there were four-year study of Higher Teacher's Schools (10) that were continuation of three-year study Institutes, the School of Foreign Languages (16), and

two-year Education Institutes training classroom teachers (YÖK, 2007a). It is an important and positive development that the responsibility of teacher training was transferred from the Ministry of Education to Universities according to Higher Education Law number 2547, initially in the sense of making certain and sufficient criteria for teacher training, and reducing the political influences on the objectives of training policies. It can be considered as "Universal Reform of Teaching" that transfer of all teacher training responsibility to universities with the Basic Law of National Education numbered 1739 issued in 1973 reads as follows: "Prospective teachers, no matter which level they will study, are required to attend higher education" (Çoban, 1996). A series of transformations took place in the training system: from Higher Teacher's Schools to Faculties of Education, Higher Teacher's School of Technical Training for industrial education to Education Faculties for Technical Training, two-year Institutes to Higher Institutes of Education, and Higher Islamic Institutes to Faculties of Theologies (Okçabol, 2005, p. 75). Higher Schools for Education were again replaced with Faculties of Education or the departments of Classroom Teacher's and Preschool Education. Thus, after this complicated process training schools had a new statue (Binbaşıoğlu, 1995, p. 425).

YÖK (Council of Higher Education) decided to issue fundamental regulations for curricula implemented in these schools as a result of serious reactions to the teacher training system (Yüksel, 2011: 59). The teacher training system aimed to reorganize the education professionals as "technicians of education" with the functioning of this new model since 1997. At the heart of the restructured model was that the education technicians would carry out teaching in specific areas (Üstüner, 2004).

Departments of education faculties are reconstructed as primary, secondary, arts and sciences, foreign languages, fine arts education, and computer and training technologies. YÖK determines the curricula of education faculties, course titles and contents, obliging all faculties to apply the same curriculum. Weights of field study and applied courses in the curriculum were increased. A non-thesis Master's degree was introduced to train teachers for secondary education. In this program two similar models were applied: 3.5 (major area courses) + 1.5 (courses on professional teaching knowledge), and especially for faculties of arts and sciences 4 (undergraduate courses) + 1.5 (courses of professional teaching knowledge) (Yüksel, 2011, p. 60-61).

YÖK received serious criticism for its restructuring of the training system and started up a new work on the faculties of education. Special work groups were convened. One of these groups, "work group on professional teaching knowledge" prepared a report projecting some novelties about courses of professional knowledge in education faculty curriculums, sent their suggestions to education faculties and collected feedback. Finally in 2006, curricula of education faculties were updated and changes have been implemented starting with the 2016-2007 academic year (Yüksel, 2011, p.62).

With these updates a more flexible curriculum was developed and made faculties free to determine new courses about thirty percent of curriculum (Yüksel, 2011, p. 64). The method of 3.5+1.5 in teacher training for secondary education was ended. Prospective teachers have begun to attend the field and professional teaching knowledge courses in a five-year program With decreasing the credits of courses in 4+1.5 method, study of Master's in Education was reduced to one year. The non-thesis Master's Degree program was abrogated as from 2010-2011 academic year, and it was decided to replace it with two-semester pedagogical formation (Özoğlu, 2010).

Discussion, Conclusion & Implementation

Considering the history of the teachers training programs in Turkey, it can be seen that many philosophical movements have influenced the training programs. One of the main characteristics that distinguish education processes of Turkey from other systems is, perhaps, the cultural and intellectual dynamics. It is hard to say, however, that today's education policies and applications include more thoughts and practices (Küçükoğlu & Bay, 2007).

In the Ottoman Empire, teachers had been trained in madrassas entirely based on religious methods until the Tanzimat Era. In her last phase, the Empire fell into instability in every field, and a variety of political thoughts emerged to overcome this great problem. Modernization and integration into the West were seen as the ultimate solution to save the state from growing political crisis. Therefore, western-style education schools were introduced. More school opened up, more teachers were required to meet the necessity (Yüksel, 2011, p. 36). They directly adopted the western-style education system in teacher's schools. With the influence of Turkish scholars by French positivists, in this period, they began to refer to positive scientific facts rather than divine, but never broke down from their religious backgrounds; there was an attempt to harmonize western-style education with a religious one. It can be seen that there is a similar education system applied in these western-style schools with classical madrasas. During the Second Constitutional Era, there was an effort to make teaching a profession. In this period, some thoughts emerged in teacher training with different practices to educate villagers (Sönmez, 2014, p.168).

With the establishment of Turkish Republic, state actors adopted specific policies to erase the traces of the past, and concordantly made changes in the education system. As opposed to Ottoman society, which was constructed on religious foundations, Republican Turkey aimed to create a new society based on national culture and unity, and in addition to this, the education system also underwent the nationalization process. Almost one year after the proclamation of Republic, 1 September 1924, Darülmuallim schools renamed as Teacher's School for Boys, and Darülmuallimat as Teacher's School for Girls. Using "teacher" (öğretmen) instead of "master"(mualllim) can be read one of the vivid examples of nationalization attempt in education.

The education policy of Republican Turkey has been influenced by many factors namely economic, political, and social, as well by the impact of the Western world, developments in science and technology (Sönmez, 2014, p. 170). Teaching has been approved as a profession with decision of unification of education. With the alphabet reform later on caused almost absolute illiteracy in society, and the newly established Republic started a literacy campaign, regarding also the views of education specialists invited from abroad. Teacher's Schools, naturally, draw all attention for training teachers to increase literacy rate. The economic reality of education was grounded in this period in the influence of John Dewey's progressivism thought. Progressivism, the application of pragmatism in education, proposes that education must properly change in terms of reality. This thought, thus, justifies job training; in other word, compliance and productivity of education economic processes (Bal, 1991, cite in Kocabaş, 2008).

John Dewey, professor at Columbia University, was one of the pioneers of progressivist thought and made pragmatism a philosophy of life, and Turkey invited him in that period. After John Dewey, the Government invited Dr. Kühne to work through Turkish education system. Kühne examined the training schools of Istanbul, Ankara, Izmir, and Eskişehir. For him what needs to be done for development now is to educate people more compared to before

(Sulubulut, 2014). Akyüz (2010, p. 410) states that inspections of Dewey and Kühne influenced the attempt of training village teachers started in 1927.

They tried to apply different teacher training systems in villages and cities for maximum benefit, and Village Institutes were introduced, bringing a lot of discussion in its wake. It can be argued that the teacher training system, during this period with the establishment of Village Institute, allowing villagers who were educated to a certain degree to be teachers in their villages, had a great impact on society. In his speech in the First National Education Council held in July 1939, Hasan Ali Yücel pointed out the negative effects of regulating rural education compared to urban standards without regarding the unique characteristics of it. He then continues to state, "We have decided as a matter of principle to train village teachers, choosing among young boys those who were born, grown up, and accustomed to the village life, in the Teacher's Schools in which they will experienced in the first hand" (MEB, 1939). Considering the curriculum applied in Village Institutes, it can be understood that it included certain courses on related village works and attempted to train teachers as masters in the village.

The Democrat Party government removed dual training system for rural and urban schools and embraced a monotype-training program. In 1950s, it considered that education and teaching were interrelated. It was aimed to train teachers those who enhanced their knowledge and experiences as citizens as well. Learning model by doing and experiencing (humanism) of early 1940s replaced with classical models (lectures and examinations) after 1948s as a conservative reaction to the threat of Communism (Gümüş & Gürbüz, 2011, p. 41). It is possible to trace the attempts for adopting new reform into society over the changes in teaching schools and their curricula.

In accordance with the developments occurring in political life during period, teacher training systems and their curricula went through some changes. The Program of Teacher's Schools and Village Institutes issued by Ministry of National Education in 1953 brought new regulations to curricula such as the Psychology course which was replaced with Introduction to Psychology, Pedagogy with Education Psychology, Sociology with Education Sociology, and General and Special Teaching Methods with Teaching Method and Applied Course. Curriculum changes in those years caused continuing debates. There were a lot of criticisms on the removal of Pedagogy classes on the ground that it tries to make children charter-wise and so prospective teachers have to know the essences of education, but Education History course still was removed from curriculum. As a response to criticisms against curriculum changes, a teacher of the Gazi Training Institute, Mithat Enç explained the philosophy underlying new teacher training policies: "Education and teaching are not different things. Teaching children is to educate them as good citizens. This new program present here are combining these two jobs, its teacher-oriented character aims to bring teachers new skills necessitated in this issue." (Binbaşıoğlu, 1995, p. 312-315).

After the military coup of 1960, in parallel with the increase of nationalism and impacts of revelation in the society, similar effects can be found in Training Schools. In addition to this, different sources were searched to meet the increasing demand for new teachers. Qualifications of a teacher and expected behaviors of teachers were determined in the 7th National Education Council held in 1962. A History of the Turkish Revolution course was added to teacher training curricula in an attempt to infuse republican reforms of the new Turkey into society. In this period, it is possible to realize that political government changed by military coup and this had influence on the changes of teacher training curricula. Such applications as inclusion of a course on the History of the Turkish Revolution were concrete indications of the

impacts of political and social goals on teacher training curricula rather than educational needs.

Following the hard efforts of 1970s to upgrade teacher-training system to higher education, Universities have taken the task of teacher training with the establishment of YÖK in 1982. After this process, more centralization standardization in teacher training could be observed. Çoban (1996, p. 2) clearly states that "In the practices towards teacher training until 1982, both in terms of its policies and objectives, and the system itself have faced with continuous changes; for a long time, it was in priority to meet the need for teachers in quantity rather than quality. However, it is explicit that the problem in teacher training was a matter of quality, not just quantity.

Along with the political and economic integration to Europe in 1990s, based on the necessities of the time, there have been significant updates in accordance with the European Union teacher training programs. National Education Council that gathered in 1996 decided on the uniformity of curricula of the faculties of education, and readjustment of programs in tune with primary education (MEB, 1996). Since then, National Education Council decisions have played a major role in readjustment and standardization of educational programs and curricula.

The teacher education program until 1996 was based on raising teachers who were supposed to be "all knowing" figures -in accordance with the social and political needs of the time- rather than being specialized professionals with respect to specific areas of study. Since 1923, teachers were expected to be the pioneering leaders and the driving force of social development. They were supposed to be providing support to economic, political, legal, sanitary, nutritional and psychological needs of both their students and their surrounding neighborhood. Such expectation indubitably stems from the role given to education in Turkish society. Teachers were the "all knowing" figures. Curricula carried on in the teacher training institutions always aimed to raise such skilled teachers. Any enquiry on curricula implemented (until 1997) in teachers colleges, village institutes, colleges and faculties of education would manifest the background rationale (Üstüner, 2004). There emerged a paradigm shift in 1997 however, with respect to the policies of teacher training program. From then on, professional teachers took the place of "all knowing" tutors.

As a result of law amendment in 2006, teachers then were expected to be "environment providers", "directives" and "facilitators" instead of "tutors" (Education Reform Initiative, 2005). Owing to the decisions made at the 17th National Education Council in 2006, awareness of the native culture and value system, capability of adapting to localities and flexibility in intercultural communication became the central requirements of the profession. They were also expected to have a deep insight about our history of education and be equipped with consciousness of national history (MEB, 2006). Teachers were to be capable of accommodating themselves to the necessities of the information age. At the 18th National Education Council in 2010, teachers' personal rights and wages were ameliorated as incentive to continue their vocation and to increase the reputation of the profession (MEB, 2010).

Throughout 150 years, parallel to political, socio-economic and cultural developments, there have been numerous changes and modifications in teacher training system of Turkey. Global trends also played a major role on teacher training policies as national needs and necessities (Karslı & Güven, 2011: 53). Any policy change inevitably affected the philosophy behind teacher training programs. Due to incessant policy changes however, generating a holistic and consistent education system could not be possible as it has been to generate philosophical continuity. Any education system devoid of philosophical consistency cannot

realize the expected outcomes. Graduates of such fragmental system would inevitably be incapable of adapting to contemporary global trends.

Generating a coherent and holistic perspective on national education -beginning with teacher training programs- is highly critical for the bright future of a nation. Our teacher training system in this sense urgently needs a comprehensive and responsive readjustment in tune with contemporary necessities. All changes should meet the requirements of our society. Policy makers should develop efficient alternative ways not on the basis of changes in political concerns and demands of the ruling governments, but on the basis of changes in contemporary necessities and global trends on education system.

References

Akyüz, Y. (2006). Türkiye'de öğretmen yetiştirmenin 160. yılında darülmuallimîn'in ilk yıllarına toplu ve yeni bir bakış. *Ankara Üniversitesi Osmanlı Tarihi Araştırma ve Uygulama Merkezi Dergisi*, 20, 17-58.

Akyüz, Y. (2010). *Türk eğitim tarihi M.Ö. 1000-M.S. 2010.* Ankara: Pegem Akademi.

Altın, H. (2008). 1869 Maarif-i umumiye nizamnamesi ve öğretmen yetiştirme tarihimizdeki yeri. *Fırat Üniversitesi İlahiyat Fakültesi Dergisi, 13* (1), 271–283.

Bal, A. P. (2008). Yeni ilköğretim matematik öğretim programının öğretmen görüşleri açısından değerlendirilmesi. *Ç.Ü. Sosyal Bilimler Enstitüsü Dergisi, 17 (1), 53-68.*

Binbaşıoğlu, C. (1995). *Öğretmen Yetiştirme Açısından Türkiye'de Eğitim Bilimleri Tarihi.* İstanbul: Milli Eğitim Basımevi.

Çoban, A. (1996). Eğitim Fakülteleri ile Eğitim Yüksekokullarının Programlar Açısından Bütünleştirilmesi. Yayınlanmamış Doktora Tezi, Ankara: Ankara Üniversitesi Sosyal Bilimler Enstitüsü.

Eğitim Reformu Girişimi. (2005). "Yeni öğretim programlarını inceleme ve değerlendirme raporu", *http://www.erg.sabanciuniv.edu/, 9.05.2006*.

Ergün, M. (1996). *İkinci meşrûtiyet devrinde eğitim hareketleri (1908-1914).* Ankara: Ocak Yayınları.

Gümüş, A. & Gürbüz, C. (2011). *Türkiye'de öğretmen yetiştirme*. (Ed. Songül Aynal Kilimci). Ankara: Pegem Akademi.

Karslı, M. D. & Güven, S. (2011). *Türkiye'de öğretmen yetiştirme*. S. A. Kilimci (Ed.). Ankara: Pegem Akademi.

Kocabaş, A. (2008). Türk eğitim sisteminin felsefi temelleri, Dewey, Mustafa Necati, ve İsmail Hakkı Tonguç. *Toplum ve Demokrasi*, *2*(3), 203-212.

Küçükoğlu, A. (2004). Türkiye'nin öğretmen yetiştirme serüveninde eğitim enstitüleri ve bir model olarak Kâzim Karabekir Eğitim Enstitüsü. *XIII. Ulusal Eğitim Bilimleri Kurultayı*, 6-9 Temmuz 2004 İnönü Üniversitesi, Malatya.

Küçükoğlu, A. & Bay, E. (2007). *Eğitimin felsefi temelleri* (Ed. D. Ekiz & H. Durukan). İstanbul: Lisans yayıncılık.

MEB (1939). Birinci Milli Eğitim Şurası.

MEB (1962). Yedinci Milli Eğitim Şurası.

MEB (1973). Milli Eğitim Temel Kanunu. Kanun Numarası: 1739, Kabul Tarihi: 14/6/1973, Yayımlandığı R. Gazete: Tarih: 24/6/1973 Sayı: 14574, Yayımlandığı Düstur: Tertip: *5(*12), 2342.

MEB (1982). Onbirinci Milli Eğitim Şurası.

MEB (1988). Onikinci Milli Eğitim Şurası.

MEB (1996). Onbeşinci Milli Eğitim Şurası.

MEB. (2005). *Temel eğitim destek programı öğretim programlarının değerlendirme raporu.* Ankara: MEB-EARGED.

MEB (2006). Onyedinci Milli Eğitim Şurası.

MEB (2010). Onsekizinci Milli Eğitim Şurası.

Okçabol, R. (2005). *Öğretmen yetiştirme sistemimiz*. Ankara: Ütopya Yayınevi.

Osmanlı Devleti Darülmuallimîn Nizamnâmesi (1851).

Özoğlu, M. (2010). Türkiye'de öğretmen yetiştirme sisteminin sorunlari. Seta Analiz. 17.

Sağlam, M. (2011). *Türkiye'de öğretmen yetiştirme*. S. A. Kilimci (Ed.). Ankara: Pegem Akademi.

Sönmez, V. (2014). *Eğitim felsefesi*. Ankara: Anı Yayıncılık.

Sulubulut, M. (2014). Eğitim alaninda Türkiye'ye davet edilen yabancı uzmanlar (1923-1960). Yayımlanmamış Yüksek Lisans Tezi, Kırşehir.

Taşdemirci, E. (1999). Yüzyılımızın başından günümüze kadar Türkiye'de öğretmen yetiştirme sisteminde çağdaş pedagoji akımları. *Sosyal Bilimler Enstitüsü Dergisi, 8,* 155-180.

Üstüner, M. (2004). Geçmişten Günümüze Türk Eğitim Sisteminde Öğretmen Yetiştirme ve Günümüz Sorunları. *İnönü Üniversitesi, Eğitim Fakültesi Dergisi*.

YÖK (1998). Eğitim fakültesi öğretmen yetiştirme lisans programları

YÖK (2007a). Eğitim fakültesi öğretmen yetiştirme lisans programları

YÖK (2007b). Öğretmen Yetiştirme ve Eğitim Fakülteleri (1982-2007).

Yüksel, S. (2011). *Türk üniversitelerinde eğitim fakülteleri ve öğretmen yetiştirme.* Ankara: Pegem Akademi.

Yüksel, İ. & Sağlam, M. (2014). *Eğitimde program değerlendirme*. Ankara: Pegem Akademi.

The opinions of Turkish and Spanish academic staff about Erasmus teaching staff mobility program

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Abstract

Erasmus is a European Union education program, which encourages higher education institutions to co-operate with each other. One of the sub-mobilities of the Erasmus program is Teaching Staff Mobility. An academic person at Higher Education Institution which holds Erasmus University Charter (EUC) gives teaching assignments at another Higher Education Institution which holds an EUC. This study aims at revealing the problems, demonstrating expectation and satisfaction levels and program outcomes of the teaching staff, who benefited from Erasmus Teaching Staff Mobility Program, both in Spain and Turkey. In addition, it will help ongoing monitoring of national program objectives, to be revised and evaluated to find out possible deficiencies and support program development studies. The sample group of the study consisted of academic staff who participated Erasmus Teaching Staff Mobility at Uludağ and Castilla-La Mancha Universities. Data was collected through "Erasmus Teaching Staff Mobility Survey". Academic staff were asked to fill in the online survey attached to their e-mails and submit their responses online. The data was analyzed using SPSS (13.0) and p-value of .05 was considered statistically significant. Percentage and frequency distributions were obtained from the responses given to survey. According to findings, both Turkish and Spanish academic staff were found to be satisfied with the Erasmus Teaching Staff Mobility. Most of the problems faced by the participants were associated with living standards of the countries they visited. The results of survey also show that Erasmus Program reached mostly cultural objectives, however academic objectives of the program need to be developed.

Keywords: European Union, Erasmus, Teaching Staff Mobility, Turkey, Spain.

Introduction

Erasmus is one of the four education programs of European Union (EU) (Comenius, Leonardo da Vinci, Grundtvig, Erasmus) under the framework of ''Lifelong Learning''. Through the activities within the scope of programs, offers the opportunity to work with people coming from different culture and lifestyles, find solutions to problems together and share their unique experiences as the most important one. Thus EU ensures varied nations to create strong ties between each other (UA, 2008). 1987-1990 was Erasmus first phase and second phase took place between 1990-1995 (Hackl, 2001). Between 1995-2000, Erasmus activities were held under one of the subprograms of Socrates Education Program and it included Bologna Process in 1998 (Süngü ve Bayrakçı, 2010). Erasmus program converted into Lifelong Learning Program (LLP) in 2007 and Erasmus became one of the subprograms of LLP. Erasmus Program will continue under ERASMUS+ between 2014-2020.

After recognised as a full EU candidate in 1999, Turkey, has obtained full participation right to Education and Youth Programs as of 1 April 2004 (Hasdemir & Çalıkoğlu, 2011). Turkey participates Community Programs of Socrates, Erasmus, Leonardo da Vinci as a full member since 2004 (EC, 2005). Erasmus program is mainly related with of student and staff mobility. Although many studies have been conducted about student mobility in Turkey (Çetin, 2013; Sancak, 2009; Özdem, 2013) and in other countries (Sigalas, 2010; Teichler, 1996), there is only one published study (Topçu, 2011) about teaching staff mobility, which is very important with regards to improvement of the academic staff development. The sample group of the study, which has been done in Turkey, consists of 14 teaching staff and the study has the feature of

qualitative study. As specified in Topçu's study (2011), generally the reason why academic staff participate in Erasmus programs, have the same cultural and academic motives, which matches the main goals of the program. That study is also important for being one of the very firsts, which is its area, and being a larger representative power by giantness of its sample. Evaluating the program by its participants is vital considering the large amount of grants and time to Erasmus Teaching Staff Mobility Program, which has been running since 1997.

Spain is the 2nd country, who has the most changing count of Erasmus Teaching Staff Mobility Program. Considering the similarities in the field of geography, politics, religion and etc. between Turkey and Spain, Spain has been chosen as the country, which would compare to Turkey. The reason why Castilla-La Mancha University (UCLM) in Spain has been chosen is it's a state university just like Uludağ University and it has similar student and academic staff numbers. Also UCLM's not being a capital city university just like Uludağ University, increased the chance to be chosen for the study. Because of these reasons, Turkey's Uludağ University and Spain's UCLM academic staff were studied in the survey.

Purpose of the Study

The main objective of this study is defining the problems experienced during the mobility, demonstrating expectation and satisfaction levels and program outcomes of the teaching staff, who benefited from Erasmus Teaching Staff Mobility Program since 2004 both in Spain and Turkey. While Spain is taking second place of the most participating countries of Europe, Turkey is becoming an emerging country in terms of mobility numbers since its participation.

Method

Research Design

The study was conducted using the descriptive design. Teaching staff, who took place in the restricted work group, teaching staff opinions were detected by survey that sent by e-mail.

Participants

Between 2004-2011 the teaching staff from Uludağ University, Turkey and UCLM, Spain, who participated in Teaching Staff Mobility, were reached by e-mail. The survey was sent to 121 academic staff and 63 of them replied the e-mail in Uludağ University. In UCLM 106 of 185 academic staff completed the survey. The survey was applied to 169 academic personal totally. The return rates were %61 for Turkey and %83 for Spain. Castilla-La Mancha is a state university like Uludağ University and their academic staff and student numbers are considerably similar to each other.

Instrument

The survey form was developed by the researcher who, in the preparation of the survey form, benefitted from surveys designed for students and teaching staff report form of National Agency. For defining the suitability, length, clarity and sufficiency of assessment tool, two teaching staff's opinions were received from each university and the necessary editing was done. Before applying the survey, the essential editing was made in the direction of the data that was taken from both University's International Relations Office.

Data Analysis

In the EU, 186546 academic staff benefited from the mobility between the years of 1997-2011. A work group of this study was consisted of the teaching staff, who benefitted Erasmus Program, from Uludağ and Castilla-La Mancha Universities. Data was collected through "Erasmus Teaching Staff Mobility Survey". Academic staff were asked to fill in the online survey attached to their e-mails and submitted their responses online. The data was analyzed using SPSS (13.0) and p-value of .05 was considered statistically significant. Percentage and frequency distributions were obtained from the responses given to survey.

Results

In the first section of the study, information about gender, age and countries that academic staff preferred for mobility program of participants is given. After that, these articles about academic staff, who joined Erasmus Teaching Staff Mobility Program, are examined: the problems that academic staff faced, the factors that made them apply program, the components that affect their host university choices, their satisfaction level for universities where they are continuing Erasmus program, the outcomes of Erasmus program.

It's been seen that, Turkish male participants (57.14%) are getting more benefit from the program than the female participants (42.86%). But Spanish male (50.94%) and female (49.06%) are almost equally getting benefit from Erasmus Teaching Staff Mobility Program.

Spanish teaching staff prefer mostly Italy (19.8%). Turkish teaching staff are preferring Germany (14.3%) and Poland (14.3%) the most. When both countries were analyzed, it was seen that the most preferred countries for the program are Italy, Germany and Poland. The countries not preferred by the Turkish teaching staff are France, Iceland, Latvia, Portugal and Romania. Spanish teaching staff didn't prefer Austria for the program.

Academic Staff, who want to participate in Erasmus Teaching Staff Mobility activity, need to make an application to a competent authority in their university. The reasons why Spanish academic staff choose Erasmus are as follows: ''internationalization'' (89.6%), ''career opportunities'' (78.3%) and ''representing his country'' (62.2%). The reasons why Turkish academic staff choose Erasmus are listed: ''representing his country'' (87.3%), ''internationalization'' (80.9%), ''having new experiences in a foreign country'' (77.8%) and ''meeting new people and culture'' (74.6%). Traveling and learning a language are not effective for Spanish academic staff. Learning a language, career opportunities and traveling are not effective for Turkish academic staff.

Erasmus Teaching Staff Mobility allows academic staff to benefit Erasmus program within the existing bilateral agreements between institutions. The choice of the university that they want to go, which has the existing bilateral agreements, is under the initiative of the staff only. Specifications that effects Spanish academicians choices are ''academic opportunities'' (80.1%), ''cultural richness'' (51.8%) and ''appeal of the country that is visited'' (49.9%) mostly. The order of these specifications for Turkish academic staff are ''academic opportunities'' (42.7%), ''cultural richness'' (34.9%) and ''socializing'' (33.3%). The less effective specifications for Spanish academicians are ''weather conditions'' (7.5%) and ''inexpensive life conditions'' (13.1%), for Turkish Academic staff ''improve language'' (9.4%) and ''weather conditions'' (15.8%).

The problems that Spanish academic staff faced mostly are ''weather conditions'' (70.7%), ''accommodation'' (69.8%) and ''financial difficulties'' (68.0%). The problems that Turkish academic staff faced mostly are ''weather conditions'' (60.3%), ''financial difficulties'' (50.8%)

and ''food'' (42.8%). Spanish academic staff indicated that they have never faced discrimination about sex, religion and race. Similarly, Turkish academic staff told they never faced discrimination about sex, religion and health.

When the satisfaction levels of participants were analyzed, subjects that Turkish academic staff were most pleased with, are; relevance of department and institutional coordinators (85.7%), academic staff's being benevolence and impartiality to Turkish Erasmus students in class (73.0%), institution's willingness of resolving problems (71.4%). Subjects that Spanish academic staff are pleased with consist of; academic staff's benevolence and impartiality to Spanish Erasmus students in class (89.6%), institution's willingness of resolving problems (85.8%), sufficiency of technological facilities in an academic environment (Computer, internet etc.) (TR 71.7%, ES 27.4%) and appealing of taste buds (TR 38.1%, ES 32.1%).

When the outcomes of program are evaluated generally, it was stated that 85.9% of Spanish academic staff and 69.8% of Turkish academic staff expressed that they have gained in ''Academic'' area, 80.9% of Turkish academic staff and 85.9% of Spanish academic staff have gained in ''Cultural'' area and 80.9% of Turkish academic staff and 78.3% of Spanish academic staff have gained in ''Social'' area.

To develop the program, the most important part of the study is the gains. Top gains of Spanish academic staff are; self-confidence of speaking foreign language (80.2%), believing the importance of Erasmus teaching staff mobility program (79.2%), improving themselves academically (78.3%). Top gains of Turkish academic staff are; being indulged to different cultures (87.3%), believing the importance of Erasmus teaching staff mobility program (81.0%), understanding the standard of judgments and the course of actions of different cultures (80.9%).

A common recommendation of 51% of Turkish and Spanish academic staff, who benefit and support this program until today, is all academic staff should benefit this program at least one time, if it is possible more is strongly advised. 17% of Turkish and mostly Spanish academic staff both point out the significance of language in the mobility. They recommend academic staff, who want to benefit the program, should troubleshoot about language and should improve their language skills if it is possible. 15% of Turkish and Spanish academic staff, who have presented opinion, there is a giant responsibility over academic staff that benefit the program. It is recommended that, they need to introduce the country correctly, nice, accurately and most importantly without exaggerating. Also, they remarked recognizing different cultures and educational environments can open up their horizons.

10% of Turkish and Spanish academic staff, that benefit the program, stated that they have heard about the program from their colleagues so there is a lack of information of Erasmus offices about announcement. To compose more awareness, they recommend to do something about it by using various communication tools.

9% of Spanish and mostly Turkish academic staff, who benefit the program, think that sometimes there are no objective and fact-based assessments in the selecting stage of Erasmus Teaching Staff Mobility Program and they recommend that a platform, in which they would be able to send their positive and negative feedbacks, should be created.

Discussion, Conclusion & Implementation

This study is made to designate the views about ERASMUS Teaching Staff Mobility Program, which has been running since 1997 and which Turkey has joined in 2004, and also designate if

there is a difference of opinion between Spain, member of EU and Turkey, candidate member of EU.

When analyzing the findings of the survey about Erasmus Teaching Staff Mobility Program, the common thought is men are more interested in the program than women because of the number of male participants in both countries. When it's evaluated on the basis of country, men are more interested in the program in Turkey. In Spain, men and women attendance rate are almost equal, but men are a little more interested there, too. According to the information, that has been gathered from higher education statistics from ÖSYM 2007-2008 academic year, there are 99.105 active teaching staff in Turkey. 39.629 of them are women and 56.476 of them are men. That supports the study findings because Turkey's educational area is male-dominant. These results were evaluated as consistent demographic data with the study.

Spanish teaching staff mostly preferred Italy (%19.8), but Turkish teaching staff mostly preferred Germany (%14.3) and Poland (%14.3). Germany might have been preferred because of crowded Turkish population there and Poland might have been preferred because it has suitable financial possibilities. Italy choice of Spanish academic staff might take its source from the short distance and similar culture. In addition to that, bilateral agreements of universities in aforementioned countries are more than the others, so that might lead to increase the chance to be preferred by teaching staff, who has been there before.

The most important specification for Turkish academic staff, who put in for Erasmus mobility, is ''representing my country''. It is ''internationalization'' for Spanish academicians. One of the misfortunes of Turkey is having the wrong information about a country in foreign countries. To remove that thought, all the academic staff, who went abroad by Erasmus program, became liable to represent and tell about their countries correctly. For Spanish academic staff, it's concluded that they just desired to become more internationalized. It is seen that the biggest difference between both countries at appealing stage is ''career possibilities'' clause. ''Career possibilities'' clause is an important position for Spanish academic staff, but Turkish academic staff don't see that clause as important as Spanish academic staff. The reason for that might be that they don't believe they can improve their career in a short period of time like a week and they think they wouldn't be able to keep it going. Besides, it is not about a flight ticket only for a Turkish academic staff, so that situation might strengthen their negative thoughts.

In the survey, one of the questions asked to teaching staff is how they had selected the university they went to, what else had affected their choice. Turkish and Spanish academic staff's answers were very similar. The most important criterion is ''academic possibilities'' for both Turkish and Spanish academic staff. Shortly, academic area, which is one of the fundamental objectives of Erasmus program, fits for purpose with the work results, and the program has accomplished one of its objectives. After ''academic possibilities'', specifications to choose the university they are going to go for Turkish academic staff in order are; ''cultural richness, social environment''. Same order for Spanish academic staff are; ''cultural richness, the appeal of the country they have gone to''. According to this information, it is clear that Erasmus is not just an academic activity, it is also a cultural and social platform, which allows countries to engage each other.

Generally, Turkish academic staff stated they have faced less problems than Spanish academic staff. This situation leads to thinking that, as an EU member country, Spain's teaching staff were not as satisfied as Turkish teaching staff, because, not being a member of EU Turkey's academic staff are finding it luxurious to have a chance to go to an EU member country. When an academic person from Spain goes to a foreign country, he/she just needs a

flight ticket, but when it comes to Erasmus program, he/she sees the process as a problem. For Turkish academic staff, Erasmus program is an easier way to go abroad than normal process, because of that Turkish academic staff sees the process within Erasmus as convenience more than a problem. Particularly, not having faced any sex, race, religious or cultural discrimination is hopeful news in the name of humanity and peace. It might be revalued that, academic staff of the universities from both countries went, have agreements between them, so that might help not to face any discrimination.

The thing that Turkish teaching staff were most pleased with is ''approach of the department and institution coordinator''. It is clear the program is helpful to make close friendships and sincere relations for Turkish participants. Spanish teaching staff's most favorite gain is ''academic personnel being objective and helpful''. That result can show us as an EU member Spain place a great emphasis on equality, and objectivity. Generally, it shows up both Spanish and Turkish teaching staff are mostly pleased with Erasmus office, academic possibilities, technologies and the good manners that has been showed to them. That result shows consistency with research of Topçu (2011).

Also, Turkish teaching staff said they had gains at ''cultural and social'' areas. Other shareholder Spain remarked they had gains mostly at ''academic and cultural'' areas. Considering the main goals of Erasmus are education and culture, we can say Erasmus has accomplished its objective. But in Turkey, cultural part is ahead of educational part, so that second part might need to be improved.

In this study, program's objectives and academicians' gains show consistency to a certain level. Turkish academic staff state that ''showing tolerance to other cultures'' is one of the first gains of them, and this is also a main goal of Erasmus. Spanish academic staff state that they gained more confidence in ''speaking foreign languages''. Participants from both countries remark that they believe the importance of Erasmus program and they discourse every academic staff should experience Erasmus at least one time. They said Erasmus is not important for only students, it is very important for academic staff, too.

One of the recommendations that the academic staff direct to their colleagues is ''representing the country correctly''. The reason why they make that recommendation is the behaviors of students, who have been there before, or the attitudes of academic staff who have been there before might have effected the impression about the country. Academic staff told their colleagues that they had to improve language skills and train lessons that would be lectured. Those recommendations make us think the possibility that some of the participants uses Erasmus program as a traveling tool or they underestimate it. Academic staff would also like to reach National Agency directly. That request associates with some corporations might move away from transparency by mistake. Erasmus program is run by universities own executive councils. Considering the flexibility of Erasmus, that action strengthens the possibility of personal privilege. Academic staff also made some recommendations to Erasmus offices in their universities. One of those recommendations is they should make more info days about the program. The probable reason of deficiency in notifications is that, there aren't enough number of academic staff to handle the work load of Erasmus offices.

References

E. Yağcı, S. Çetin & B. Turhan (2013). Challenges Faced By The Students Who Came to Turkey Via Erasmus Programme. *H. Ü. Eğitim Fakültesi Dergisi*, *44*, 341-350.

EC. (2005). *Civil Society Dialogue between the EU and Candidate Countries*. Brussel: Commission of the European Communities. COM.

Hackl, E. (2001). The intrusion and expansion of community policies in higher education. *Higher Education Management*, *13* (3), 99–117.

Hasdemir, F. Çalıkoğlu, M. R. (2011). Avrupa Birliği Eğitim Programları ve Değişim. *Yükseköğretim ve Bilim Dergisi*, *1* (2), 66-68.

Özdem, G. (2013). Yükseköğretim Kurumlarında ERASMUS Programının Değerlendirilmesi (Giresun Üniversitesi Örneği). *Kuram ve Uygulamada Eğitim Yönetimi Dergisi*, *19* (1), 61-98.

Sancak, A. (2009). *Kültürlerarası Diyalog Açısından Öğrenci Değişim Programları -ERASMUS Örneği-*. Yayımlanmamış Yüksek Lisans Tezi, Sakarya Üniversitesi Sosyal Bilimler Enstitüsü, Sakarya.

Sigalas, E. (2010). The role of personal benefits in public support for the EU: Learning from the Erasmus students. *West Europan Politics*, *33* (6), 1341-1361.

Süngü, H. & Bayrakçı, M. (2010). Bolonya Süreci Sonrası Yükseköğretimde Akreditasyon Çalışmaları. *Türk Eğitim Bilimleri Dergisi*, *8* (4), 895-912.

Teichler, U. (1996). Student Mobility in the Framework of ERASMUS: Findings of an Evaluation Study. *European Journal of Education*, *31* (2), 153-179.

Topçu, İ. (2011). Avrupa Birliği eğitim programlarından Erasmus programına katılan akademisyenlerin izlenimleri. *CÜ Sosyal Bilimler Dergisi*, *35*(1), 8-17.

Ulusal Ajans [UA]. (2008). *2007-2008 Hayatboyu öğrenme programı ERASMUS el kitabı*. AB Eğitim ve Gençlik Programları."

Yayan, M. (2003) AB eğitim programları ve Türkiye'nin yararlanma kabiliyeti. *Milli Eğitim Dergisi*, *158*.

The identification of high-school teachers' perceptions about the master of arts (ma) programs of education faculties on their self-efficacy: A case study

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Abstract

This study aims to explain teachers' perceptions of self-efficacy and discusses possible factors that might be affecting teachers' perceptions. Teachers' self-esteem and belief of success relates directly with self-efficacy. McLaughlin (1986) identifies the teacher as the most important resource in the schools, yet little is done to promote the continued learning and improvement for those in the profession (as cited in Henson, 2001). This piece of work mainly intends to examine teachers' self-efficacy between the ones who teach English and the ones who teach in different fields of teaching. In this regard, the question whether having an MA degree and/or having different branches of teaching is considered effective in teachers' perception of their self-efficacy or not will be reviewed, and personal differences, namely age and gender affecting their perception will be examined. Before turning into the discussion of the survey that tries to uncover teachers' perceptions and differences affecting the perception of self-efficacy, an overview of the importance of self-efficacy will be provided in order to get a better understanding of the overall topic.

Keywords: Self-efficacy, M.A programs, English teachers.

Introduction

No one is perfect. We all have weak sides. We come to world to fix these weak sides all through our lives. One of these weak sides might be related to our anxiety or self-confidence level. If we are teachers, then, transforming our anxiety or low-level self-confidence into high level of self-efficacy becomes even more of an important goal. Moreover, teachers' ability of carrying the efficacies and qualifications of teaching is strongly connected, not only with having a good education, but also teachers' internal belief of self-efficacy (Yılmaz, et al., 2004). Therefore, some of the teachers having graduated from the education faculties prefer to work towards getting MA degrees since Master studies primarily focus on comprehensive examinations and research preparation and defense. At this point self-efficacy becomes a key concept in social learning theory (Bandura, 1986) and described as the self-decision of an individual in organizing actions in order to be successful in a certain field (Zimmerman 1995; Bandura 1986).

Aston (1984) asserts that self-efficacy is the teachers' ability that affects students' performances and self-confidence (as cited in Ekici, 2004). This is one reason for teachers to improve their skills in order to follow the rapid changes in the world. In short, being a teacher requires more and more qualifications than yesterday (Yılmaz, 2004).

Researches on self-efficacy of teachers also describe that teachers and student's self-efficacy are parallel to each other. The more teachers' self-efficacy increases, the more students' self-efficacy increases. In addition to that, the concept of self-efficacy has been taking place in many institutions as a tool of professional development especially for the last decades, and it has almost become a standard feature to check the reflections of teachers for many institutions (Fernandez-Chung, 2009). The primary motivation is the drive to raise teaching quality via the development and sharing of good practice as well as to support

continuing professional development, as stated by Fernandez-Chung (2009). Lomas and Kinchin (2006) agree, too, that more recently, the debate has moved towards a quality enhancement tool rather than a quality assurance mechanism. According to Lomas and Kinchin (2006, p. 205), "the main objectives are to help academics examine their teaching for the purpose of self-improvement and to establish good practice as a means to enhancing student learning."

However, as Henson (2001) claims, although the study of teacher efficacy has been fruitful, it is the subject of current debate concerning its meaning. Accordingly, teacher efficacy is "ready to either move forward or fall to the wayside as a good idea that ultimately had little substance". As Tschannen-Moran and Woolfolk-Hoy (2001) noted:

> This appealing idea, that teachers' beliefs about their own capacities as teachers somehow matter, enjoyed a celebrated childhood, producing compelling findings in almost every study, but it has also struggled through the difficult, if inevitable, identity crisis of adolescence. . . teacher efficacy [now] stands on the verge of maturity. . . (p. 202).

Considering the fact that teachers' career resembles to human life, as suggested above, we can see how important it is for a teacher to evaluate themselves on the grounds that are related to their professional development as a teacher. For these reasons, this case study was conducted in order to discuss how teachers who currently teach in Turkey assess themselves and their capacities in terms of their self-efficacy and the impact of MA degree offered by Education Faculties. It was also aimed to investigate if different branches of teaching, gender and age play an important role on their perceptions of their self-efficacy. Before going on with the survey study in detail, the concept of self-efficacy should be introduced, though in order to get a better understanding of the issue.

Literature Review

Concept of Self-Efficacy

Self-efficacy, as defined by Albert Bandura (1986), is "people's judgment of their capabilities to organize and execute courses of action required attaining designated types of performance" (p.391). Bandura clarifies that self-efficacy "is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses" (1986, p. 391). "Teacher" is the most important subject in education, and serves as the key for the success of education system in the world. Therefore, teachers are supposed to lead the society's strategic power not only in the world but also in their own countries. Teachers have roles like class management, providing learning, etc. because of which, a teacher has to lead a class well, present the context affectively, provide learning, assess objectively, and has to have know-how, be a consultant, follow the ethical rules of his job and be reliable (Saracoglu, et al., 2009). As it has been agreed, being a teacher requires ability, qualification and efficacies. Teachers' ability of carrying the efficacies and qualifications of teaching is strongly connected, not only with having a good education, but also teachers' internal belief of self-efficacy (Yılmaz, et al., 2004).

Self-efficacy is a key concept in social learning theory (Bandura, 1986) and described as the self-decision of an individual in organizing actions in order to be successful in a certain field (Zimmerman 1995; Bandura 1986). There are four kinds of self-efficacy according to Bandura. These are experiences like being successful or unsuccessful, emotional and physical conditions like fear, excitement, observing others' experiences, and witnessing the success and verbal convictions of family, friends and colleagues (Woolfolk & Hoy, 2000). Self-efficacy belief feeds

on these sources and affects the performance, endeavor and the struggle of the individual (Ekici 2006; Küçükyılmaz & Duban, 2006 as cited in Saracoglu, et al., 2009).

Discussion of Self-Efficacy of Teachers from Different Fields of Study

Tschannen-Moran and Woolfolk-Hoy (2001) claim that the self-efficacy is the teachers' ability to make every single students learn. Working as a teacher requires more and more responsibility than before so a teacher has to be a good organizer of teaching and learning process, good observer of learning environment. To match with the requirements of a teacher, one needs to have a good education besides having a strong belief in himself about being successful, and in learning and teaching process.

The behaviors and the practices of the teachers in the classroom are connected with the self-efficacy of the teacher (Aston, Webb, Doda, 1983, cited in Woolfolk-Hoy). Many studies have shown that the self-efficacy belief is also connected with the students' success (Brophy & Good, 1984; Aston & Webb, 1986; Alinder, 1994; Ross, 1994; Goddard, as cited in Woolfolk-Hoy, 2000). Therefore, it can be claimed that once the perception of self-efficacy improves, responsibility of the teacher improves as well. Self-efficient teachers are not narrow-minded people because they are tended to use new strategies and methods in classroom environment. They feel desirous about their students and teaching (Gibson & Dembo, 1984; Bandura, 1997; Pajares, 1997; Stein & Wang, 1998; Cousins & Walker, 2000, as cited in Tschannen-Moran et al., 2001).

Moreover, it can be said that increase in the self-efficacy of the teacher also affects students' success positively. There are several studies both in our country and abroad about the teachers' perception of self-efficacy:

According to what was reported in one of the studies, Tschannen-Moran et al. (2001), investigated the variables on teachers' perception of self-efficacy. 225 teachers had participated to the questionnaire and a scale of the self-efficacy belief was used in study. Low-level relationships were observed between teachers' seniority and their perception of self-efficacy. High-level relations were found between the schools' tool and equipment, and the support of administrators to the teachers and the teachers' perception of self-efficacy. Similarly, it was observed that for the primary school teachers, perception of self-efficacy is significantly higher than secondary school and high school teachers. (Saracoglu, et al., 2009)

Özkan, Tekkaya and Çakıroglu (2002) investigated the science preservice teachers' insights of science concepts, their attitudes toward science teaching and their self-efficacy beliefs. The study was carried out with 229 science pre-service teachers. The data were gathered by the science comprehension test developed by researchers, the Scale of Self-efficacy Belief in Science Teaching developed by Enochs and Riggs (1990), and the Scale of Attitude in Science Teaching developed by Thompson and Shringley (1986). It was observed that pre-service teachers developed positive self-efficacy beliefs and attitudes. Contrary to this, they have some misconceptions in science subjects. In addition, it was found that teachers with high self-efficacy beliefs had positive attitudes toward science teaching. Yaman, Cansüngü-Koray and Altunçekiç (2004) used the scale of self-efficacy belief on different levels of students in the science-teaching department in the 2002-2003 summer semester and found that the more the seniority of the students increases, the more science self-efficacy beliefs increase. Moreover, according to this study, teachers' perception of self-efficacy does not differentiate in respect to school type and gender.

Altunçekiç, Yaman and Koray (2005) studied the relationship between the students' level of self-efficacy beliefs and their problem solving ability in Kastamonu Education Faculty, Primary

School Department of Science, Mathematics and Primary School Teachers Branches, in 2003-2004. The participants were 240 students. “The Scale of Self-Efficacy”, translated by Kaptan and Korkmaz (2001), and “The Scale of Problem Solving Abilities”, developed by Yaman were both used as tools for data gathering. According to the findings, it was observed that the self-efficacy beliefs of pre-service teachers in the Science Teaching Department were the highest, while those in the Primary School Teaching Department were the lowest. Also, the self-efficacy beliefs of students in the first year were significantly low related to the other years. It was found that the self-efficacy of the students did not differ according to school type and gender and there was a high level, positive and significant relationship between the students’ self-efficacy and their problem solving ability.

Önen and Öztuna (2005) investigated how the self-efficacy of Mathematics teachers in primary schools changes related to their seniority. In the study, they used “Science Teaching Inventory of Self-efficacy”, developed by Riggs and Enochs. Although prepared for science teachers, this inventory was revised for mathematics teachers and applied to 32 science teachers and 24 mathematics teachers in Bahçelievler and Kadıköy in Istanbul. According to the results, it was found that science and mathematics teachers have self-efficacy. In the study, self-efficacy of the teachers was observed to change related to seniority. Akbas and Çelikkaleli (2006) investigated whether the self-efficacy of primary school teachers differed related to gender and graduation from university. The participants are from Dokuz Eylül University (n=129), Balıkesir University (n=46), Cumhuriyet University (n=131), Mersin University (n=57), Ankara University (n=40) and Van Yüzüncü Yıl University (n=88), in total n=491 students. In the study, “the Scale of Self-efficacy Beliefs” developed by Riggs and Enochs (1990) and translated by Bıkmaz (2002) was used to investigate the pre-service teachers’ attitude toward science teaching. According to the results, pre-service teachers’ self-efficacy beliefs and outcome expectations toward science teaching did not differ in respect to gender. But according to their education types, although the self-efficacy of the pre-service teachers did not change, their outcome expectations changed. Also, primary school pre-services teachers’ self-efficacy beliefs and outcome expectations toward science teaching differed related to their university. Ekici (2006) investigated the vocational high school teachers’ self-efficacy beliefs according to some variables such as gender, seniority, and branches. The participants of the study were 240 teachers from 7 vocational high schools in Ankara. The scale, developed by Schmitz and Schwarzer (2000) and translated by Yılmaz et al., (2004) was applied to the teachers. At the end of the study, it was observed that vocational high school teachers’ self-efficacy beliefs were above the medium level. The self-efficacy beliefs of the teachers changed related to their gender and branches, also female teachers and culture lesson teachers had a significantly high level of self-efficacy beliefs. Another finding was that self-efficacy beliefs of the teachers did not change related to their seniority. (Saracoglu, et al., 2009, p. 3-5)

Kahyaoglu and Yangın (2007) investigated pre-service teachers’ self-efficacy beliefs according to their gender, department, education, seniority, and high school (as cited in Saracoglu, et al., 2009). The participants were pre-service teachers (n=330) in Dicle University, Siirt Education Faculty Primary School Teaching Department in 2005-2006. The data were gathered by the “Vocational Self-efficacy Questionnaire” developed by the researchers and had 0,89 reliability. In the study, it was found that science pre-service teachers felt more confident than the pre-service teachers in primary school and mathematics teaching departments. In addition, the students in special students department had higher marks than the others. The self-efficacy marks of the pre-service teachers did not differ according to gender, seniority and graduated high school.

Factors Affecting Self-Efficacy

There are many advantages of knowing the factors of a specific teacher so that the class, workbook and course book planning can be done beforehand. By using the knowledge of factors affecting teachers' self-efficacy, teachers' self-efficacy can be improved throughout the years in preparatory classes. Bandura (1986) identified two dimensions of self-efficacy: personal self-efficacy and outcome expectancy. Personal self-efficacy is the "belief in one's capabilities to organize and execute the courses of action required producing given attainments, whereas outcome expectancy is a judgment of the likely consequence such performances will produce" (Bandura, 1986, p. 3).

Personal self-efficacy is a future-oriented belief about the level of competence a person expects to display in a given situation. When applied to teaching, this self-efficacy factor is generally known as Personal Teaching Efficacy (PTE). Teachers with a high level of PTE have confidence that they have adequate training or experience to develop strategies for overcoming obstacles to student learning. Such teachers will expend great effort to reach goals, will persist longer in the face of adversity, and rebound from temporary setbacks to a greater degree than teachers with low PTE (Bandura, 1986). Bandura's second factor, outcome expectancy, is the notion that an intention to undertake some action is based on the expected success of that action. When applied to teaching, this factor is most often called General Teaching Efficacy (GTE), and it extends beyond an individual teacher's view of his or her own capabilities to a view of teachers in general (Cantrell, Young & Moore 2003).

Bandura (1986) discussed four factors of self-efficacy that may contribute to teacher efficacy: mastery experiences, physiological and emotional arousal, vicarious experience, and social persuasion. Mastery experiences are the most powerful source of efficacy information according to Tschannen-Moran et al. (2001). The level of these sources can highly affect the students' success. Social Persuasion is another important issue on the teachers' self-efficacy in terms of giving encouragement and strategies for problem solving besides giving specific feedback on a teachers' performance.

Moreover, an analysis of survey data from substantial intra-teacher variation and revealed that a teacher tends to feel most efficacious when teaching high-track students. This effect is most pronounced for math and science teachers and disappears when the level of students' engagement is controlled. A teacher's level of preparation analysis of intra-teacher variation revealed that teachers who exercise control over key working conditions and work in highly collaborative environments have elevated self-efficacy (Raudenbush, et al., 1992).

Another factor that influences teachers' self-efficacy is professional development. Guskey (2000, p.16 as cited in Yılmaz, 2004) defines professional development as the "process and activities designed to enhance the professional knowledge, skills, and attitude of educators so that they might, in turn, improve the learning of students". This subject needs a specific goal.

Self-Efficacy in Terms of Different Theories and Strategies

As stated above, Bandura (1986) describes four sources of personal efficacy: performance accomplishments; vicarious experiences; verbal persuasions; and, emotional arousals. Performance accomplishments have the biggest portion on affecting self-efficacy because it directly involves in success and completion of task of students. Vicarious experiences influence one when he observes an individual completing a task with success. Verbal persuasion as you can guess deals with the verbal expressions of someone about the beliefs of another individual's abilities to overcome problems. If the task is not successfully completed, the

individual's self-efficacy will be further influenced in a negative manner (Bandura, 1986). This proves evidence for the emotional arousals.

An American psychologist, William James believed that "introspective observation is what we have to rely on first and foremost and always" (p. 185). James was among the first psychologists to address "self-esteem," defining it as a feeling about one's self and what one thinks of personal accomplishments in relation to other members of society (as cited in Pajares, 2002).

On the other hand, while behavioral psychologists such as Pavlov and Skinner dominated the 1920s through 1940s with attention to stimuli and response, the idea of "self" lost interest. Education, closely following psychological theory, disregarded a focus on "self" and was not focused on within the schools at this time (Lewandowski, 2005).

The humanistic movement led to a new enthusiasm for studying self-constructs and self-beliefs during the 1960s and 1970s. Social cognitivist, Albert Bandura (1986) identified in his publication, Self-efficacy: Toward a Unifying Theory of Behavioral Change, what he believed was an instrumental aspect missing from all theories of the day, including his own social learning theory 17 – "self-efficacy." Describing individuals as having a perception of their capabilities that impact and help to determine choices of activities and persistence in reaching a goal, Bandura referred to these self-perceptions as self-efficacy (Lewandowski, 2005).

In the literature, change in teachers' way of teaching is important in terms of defining teacher development. For a teacher to change can be only possible when the teacher knows his/her weak and strong sides through needs analysis. Only then s/he can know if s/he is an efficient teacher or needs more improvement on certain issues. Therefore, this study tries to investigate the perceptions of teachers' self-efficacy in order to identify how teachers see themselves and tend what to improve in terms of their teaching by having a Master's degree. Moreover, the study also tries to explore the background issues, if any, in order to understand to what extent they should be considered important while defining "efficient teachers". For this reason, research questions of this study had to include the following:

1. What are the perceptions of high school teachers about the MA degree on their self-efficacy?
2. How do factors such as age, gender and experience affect teachers' perceptions of their self-efficacy?

The purpose of this research paper is, therefore, to identify such factors and see how effective they are on different perceptions of self-efficacy. Considering the positive and negative perceptions teachers are supposed to have according to the literature provided above, this study will try to come to a conclusion about the following hypotheses:

It was hypothesized that:

- Teachers working in different fields rate their self-efficacy higher than ELT teachers.
- As age increases the instructors rate their self-efficacy higher.
- Male and female teachers perceive self-efficacy differently.

Method

Overview

This research was conducted in order to see if high school teachers with MA and teachers of different branches differ from each other in terms of their perception of self-efficacy, as was suggested in the hypotheses of the study. Based on the findings, the effect of different branches, gender and age on instructors' perceptions of self-efficacy are also expected to be seen. The view of Turkish instructors was tried to be obtained in line with this topic. Specifically, instructors from both public and private institutions were selected to make up the convenience sample out of an accessible population of ELT instructors in Istanbul and of teachers of different branches. Selected participants answered a survey questionnaire structured in a 5-point Likert format (See Appendix). Data gathered from this research instrument were then computed for interpretation. Along with primary data, secondary resources in the form of published articles and literatures were also used to support the survey results.

Branch of the teachers was the independent variable of the study. Some controlling variables such as age and gender are also included to increase the internal validity of the research. Furthermore, in order to increase the content validity of the research, operationalization was provided to make sure that all possible dimensions of the research have been covered.

Overall Design of the Study

Since the purpose of this study was to investigate the perceptions of high school teachers with MA on their self-efficacy, the research method had to be sensitive to the meanings that participating teachers were constructing as they experienced self-efficacy. For this reason, the research relied on a quantitative design, which tried to examine the relations between teachers' perceptions and their branches and, if any, gender and age. In short, the rationale for the quantitative design was to clarify the extent to which the participants perceived their self-efficacy to be an effective form of their teaching.

A descriptive research method was employed in this study to identify factors such as gender and age affecting the perception of teachers during the time of research and to find out different perceptions related to importance of self-efficacy among the participant teachers. The primary data were derived from the answers the participants gave during the survey process. With the use of the survey questionnaire and published literatures, this study took on the combined quantitative and qualitative approach of research. By means of employing this combined approach, it was possible to obtain the advantages of both quantitative and qualitative approaches and overcome their limitations.

A survey design involving a questionnaire was used to collect data on teachers' believes about their self-efficacy. The questionnaires were distributed to instructors and the data collected were analyzed descriptively to understand the general trends as well as differences among the instructors.

Sampling procedure

The participants were chosen by means of convenience sampling out of an accessible population of high school teachers in Istanbul. The reason why this sampling method is conducted is that it was readily available and convenient to the researchers working on the project.

Participants

The participants in this study included English language teachers studying M.A. courses at a private university in Istanbul and teachers working in different branches such as Maths and Science in a public school in Istanbul. In order to understand if perception of self-efficacy changes when factors such as branches, gender and age vary, certain inclusion criteria were imposed. To achieve pertinent information and to be able to compare the effect of the branch, a total of 41 instructors were asked to participate, the forty-one (41) participants of this study had started working as a teacher at high-school upon graduation and decided to earn MA degree after five or six years of teaching. Of these 41 participants, 21 of which were from different branches, and 20 of which were English teachers. There were 4 Science teachers, 3 Turkish teachers, 4 Mathematics teachers, 8 Classroom teachers and 2 Social Sciences teachers composing group of teachers from different teachers. Except from three teachers - Social Science, Classroom and Turkish teachers, none of those teachers of different branches have been abroad according to what they reported. On the other hand, almost all the English teachers reported that they had been abroad in order to attend a language school (See Table 1 for further details).

Instruments

A survey questionnaire was used as the main data-gathering instrument for this study (See Appendix). In order to increase the reliability of the research, the questionnaire that was used in this study was replicated from a previously used questionnaire of Ministry of Education. (See http://otmg.meb.gov.tr/yayin.html)

The questionnaire was divided into two main sections: a profile and the survey. The profile contained socio-demographic characteristics of the respondents such as their age, gender and branches. Some factors such as participants' being abroad and type of schools they attended were also included in the first section to provide a better profile of the participants. The questionnaire that was used as the basic research instrument included 126 items in total that measured different believes of teachers regarding self-efficacy. There were 6 parts under the survey section:

1. Personal development (24 items),
2. Communication with students (31 items),
3. Teaching-learning process (35 items),
4. Observation-evaluation (25 items),
5. Family-society relationships (5 items), and
6. Curriculum (6 items).

Participants rated these items using a five-point Likert scale, which enabled the respondents to answer the survey easily. The choices represented the degree of agreement each respondent had on the given question. Space for explanation was also allowed for.

Measures

Since the focus is on the relationship between the dependent variable of perception of self-efficacy and independent variables (age, gender and mainly branches), regression analysis was used to understand how the typical value of the self-efficacy changes when age, gender or branches are varied. Regression analysis was also used to understand which among the independent variables of this research are related to the dependent variable, and to explore the forms of these relationships.

Data Analysis

The data collected via questionnaire were processed using a statistical package for social sciences (SPSS) version 19.0 to analyze descriptive statistics, reliability estimates, correlational, regression, inferential and factor analysis. The qualitative data were gathered via semi-structured interviews with the twenty four participants. The qualitative data were analyzed via NVIVO 19. The reliability coefficients for 126 items in the questionnaire were at highly acceptable levels (α = ,818) . Descriptive analyses were made for all responses to close-ended items, and entered for computer analysis. The percentages, means and frequencies of the data were calculated. Inferential analyses were also conducted to test the potential differences between teachers' self-appraisal and their background variables namely branches, age and gender.

Results

Demographic Background of the Sample

The questionnaires were given to 50 teachers and a total of 41 questionnaires were returned providing a 82% return rate. The demographic characteristics of the respondents are shown in Table 1 below. As for the branches teachers are working in, there are 20 ELT teachers participating in our survey (48,8%). The rest of the teachers (N=21) are from different branches such as Turkish, Mathematics, Social Sciences, Classroom Teaching and Science constructing 51,2% of the teachers participating in the survey.

As for gender, 22 teachers are female (53,7%) and 19 teachers are male (46,3%), which can be considered as a balanced distribution of gender. Most of the teachers (N=24) are aged between 26-35 (58,5%) and there are only three teachers who are aged between 36-45 (7,3%). There are no teachers aged more than 46 or more participating in the survey.

In our sample, 19 teachers (46,3%) reported that they have been abroad. The most frequent reason for being abroad is business trips, then travels, and finally attending a language course. 16 of these teachers are High school teachers, and only three of them are teachers from different branches. On the other hand 53,7% of the teachers (N=22) have not been abroad yet, according to their statement. This group consists of only four High school teachers and the rest of them are from different branches.

As can be seen from the table below there is almost an even distribution of teachers according to their branches as well as their gender. On the other hand age is mainly gathered around the age of 26-35 as the table indicates.

Table 1

Descriptive Statistics: Distribution of Teachers According to Independent/ Controlling Variables

		Frequency	Percent
Branches	EFL	20	48.8
	Other	21	51.2
Gender	Male	19	46.3
	Female	22	53.7
Age	21-25	14	34.1
	26-35	24	58.5
	36-45	3	7.3
Been abroad	Yes	19	46.3
	No	22	53.7

Believes of Teachers on Their Self -Efficacy

The aim of this study is to explore believes of self-efficacy of high school teachers with an MA degree. In order to identify teachers' beliefs on their self-efficacy, teachers were asked 126 questions summed up under six different sections. Teachers' responses to the statements in this second section of the questionnaire provided data on their preferences (see Appendix). As seen in Table 2, teachers feel efficient about all the sections being discussed here.

According descriptive statistics conducted, teachers believe that they are most efficient in their communication with their students as this item received a mean of 4,0. This is followed by teaching- learning process with a mean of 3,9, and personal development with a mean of 3,8. Items related to observation-evaluation and curriculum, too, received a mean of 3,8 meaning that teachers find themselves efficient to a certain degree. On the other hand, as for family- society relationships, items related to this group received the lowest ratings (minimum score of 1,0) causing the mean to decrease, which means that teachers feel in between. As well as feeling that they need to improve themselves, they also think that they are efficient in their relationships with families and society with a mean of 3,50. Components of the sections will be discussed below.

Table 2

Section-Based Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Communication with students	41	4.0	0.4	3.3	4.7
Teaching- learning process	40	3.9	0.5	2.9	4.5
Personal development	40	3.8	0.6	1.7	4.7
Observation-evaluation	39	3.8	0.6	2.1	4.8
Curriculum	41	3.8	0.8	1.0	5.0
Family-society relations	41	3.5	1.0	1.0	5.0

Personal development

When the components of the personal development are examined (see Table 3), it can be seen that item number 10 "using information and communication technologies in learning process" is given higher scores by 80,5 % of the teachers (N=33) who believe to be efficient or very efficient on the issue for their personal development with a mean score of 4,10. In addition, it should also be noted that teachers think that they are efficient user of their mother tongue Turkish for their personal development as item 3 was rated "efficient" or "very efficient" by ¾ of the teachers with a mean score of 4,05 (N=30 out of 41). It is also important to note that 35 teachers believe that they are "efficiently" or "very efficiently" using higher level of thinking skills in order to develop personally better with a mean score of 4,02.

On the other hand, as shown in Table 3, teachers do not think that they efficiently cooperate with non-governmental organizations or local governments as this item received a mean score of 3,46. Also, as item 14 indicates, 39 % of the teachers (N=16) feel that they should improve themselves in terms self-efficacy as it received a mean score of 3,54. In addition, the 3rd item from the bottom of the list of personal development items is item 16. This item receives a mean score of 3,59 and rated positively by 25 of the teachers. 16 teachers believe that they are not efficiently "using action research in order to solve the problems in their schools". When taking into the consideration of the fact that English teachers have their

M.A degrees, the effect of M.A on their self-efficacy perception can be moderate. Item 11 seems to support this view; teachers think they are not efficiently "participating in academic studies, training and seminars to improve their professional competencies." Item 8 similarly shows that teachers think they are not efficient in academic research.

Table 3

Descriptive Statistics for Components of Personal Development

	Mean	Median	Mode	Std. Deviation	Skewness	Kurtosis
Making use of information and communication technologies during teaching process	4.10	4.00	4.00	.92	-1.22	2.11
Using Turkish appropriately and intelligibly	4.05	4.00	4.00	.84	-.36	-.78
Using high order thinking skills (critical thinking. reflective thinking)	4.02	4.00	4.00	.88	-1.44	3.08
Using the data obtained from self-evaluation for personal and academic development	4.02	4.00	4.00	.91	-1.10	1.89
Being open to new ideas and change	4.00	4.00	4.00	.84	-1.08	2.69
Making use of information and communication technologies for sharing information (online journals. professional blogs)	3.98	4.00	5.00	1.06	-1.01	1.00
Having technological literacy (concepts of technology and skills of application)	3.93	4.00	4.00	.96	-.56	-.55
Attending training. seminars and conferences . inclining to M.A to develop professional knowledge. skill and efficancy	3.93	4.00	4.00	.91	-1.13	1.89
Encouraging students to take part in developing school	3.93	4.00	4.00	.88	-.79	.30
Making use of teacher opinions	3.93	4.00	4.00	.93	-.82	1.01
Analyzing in-class and out class studies critically and use them for self-evaluation	3.88	4.00	4.00	.98	-1.25	2.11
Following the developments in information and communication technologies	3.83	4.00	4.00	.80	.02	-.81
Attending cultural. and art events to improve personal and professional sensitivity	3.80	4.00	4.00	.84	-.40	-.23
Knowing how to deal with stress and using them	3.78	4.00	4.00	.82	-.13	-.52
Asking for help in personal and professional issues (academics. specialist) when needed	3.78	4.00	4.00	.82	-.13	-.52
Having the ability to conduct scientific research	3.78	4.00	4.00	.99	-1.01	1.44

Making use of student remarks	3.78	4.00	4.00	.94	-1.27	2.37
Making use of parent remarks	3.76	4.00	4.00	.97	-.69	.42
Following academic publications for professional development	3.73	4.00	4.00	.90	-.97	1.31
Making use of administrator remarks	3.73	4.00	4.00	.90	-.53	-.28
Supporting and taking part in learning school studies	3.63	4.00	4.00	.84	-.28	-.33
Conducting and implementing action research to solve school problems	3.59	4.00	4.00	1.05	-.72	.23
Using peripheral facilities to develop and ameliorate school conditions	3.54	4.00	4.00	.98	-.61	-.07
Collaborating with NGO and local authorities	3.46	4.00	4.00	.92	-.49	.11

When we look at the overall perception of self-efficacy of the teachers in terms of personal development by taking the average of all these 24 items (see Chart1), we can see that 53,6% of the teachers believe that they are below the level of “efficiently” using the personal development items in terms of their self- efficacy (N=22). As shown in Table 4, the lowest rate being 1,71, the mean score for the personal development practice is 3,80 with a standard deviation of 0.56. The mode for overall perception of personal development for self-efficacy is 3,79 and the median is 3,90. It should be noted that less than half of the teachers (N=19) believe that they are efficiently using personal development techniques in terms of self-efficacy. Furthermore, the scores teachers gave to personal development practice gathered around the mean score caused a normal distribution of the scores (see Chart 1). The reason why the distribution is skewed neither negatively nor positively might be lying under the fact that teachers perceive their performance for their own development neither positively nor negatively. Otherwise, there would not be a normal distribution of the scores. Factors affecting the perception of teachers of their self-efficacy on personal development might be causing results as such; therefore, they should be worked on closely.

Table 4

Descriptive Statistics for Personal Development

Personal development	**Mean**	**Median**	**Mode**	**Std. Deviation**	**Minimum**	**Maximum**
	3.84	3.90	3.79	.56	1.71	4.71

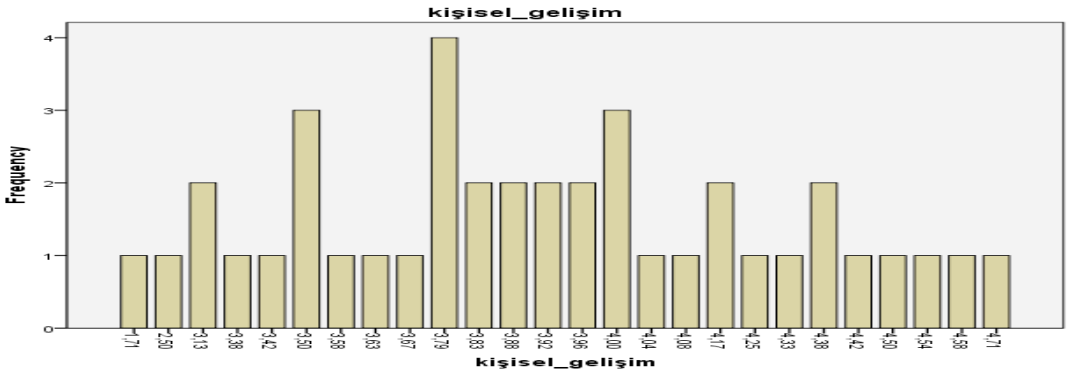

Figure 1. Distribution of personal development

Communication with students

Having worked through the components of communication with students (see Table 5), it can be observed that teachers rated item number 13, namely "informing students about different ways of learning and succeeding", with the highest scores. This item receives a mean score of 4,24, which means that teachers feel more than "efficient" in terms of their communication with students. Item 17, which is about "behaving according to human rights", receives the second higher scores from the teachers with a mean score of 4,20. Teachers (N=36) believe to behave "efficiently or "very efficiently" according to human rights and only 12,2% of the teachers participating feel that their behaviors are at acceptable levels. As for item 5, it is worth noting that 82,9% of the teachers (N=34) think that they are efficient in "listening to the students in an effective way" as this item received a mean score of 4,17. There are only 7 teachers who think that they are at a moderate level about the way they listen to their students efficiently or not.

On the other hand, when we look as Table 5, we can see that item 27 "sharing the student's personal development with his/her family" and item 26 "cooperation with the school's counselor throughout the process of student's job decision" receive the lowest ratings from the teachers as the mean score for both of them is 3.73. It can be said that 32.7% of the teachers believe they need to improve their skills of cooperation with family and/or school counselors. Item 25 "conducting a counseling plan including the student's developmental traits" is also placed 3rd in the bottom of the list receiving a mean score of 3.76. Teachers who think that they need to improve themselves on this issue constitutes the 31.8% of the overall sample participating in the survey.

Table 5

Descriptive Statistics for Components of Communication with Students

	Mean	Median	Mode	Std. Deviation	Skewness	Kurtosis
Informing students about different ways of learning and succeeding	4.24	4.00	4.00	.70	-.38	-.85
Behaving in accordance with human rights	4.20	4.00	4.00	.64	-.19	-.54
Listening students effectively	4.17	4.00	4.00	.70	-.25	-.89
Calling students by name	4.17	4.00	5.00	.86	-.59	-.75
Planning homework and out-class activities in accordance with students' needs and environmental feasibility	4.17	4.00	4.00	.59	-.04	-.13
Including studies that encourage the awareness of individual and cultural differences	4.12	4.00	4.00	.71	-.18	-.96
Giving opportunities for students to express themselves	4.10	4.00	4.00	.62	-.07	-.31
Sharing the data about student development with them	4.10	4.00	4.00	.70	-.14	-.87
Confirming confidentiality on student records	4.07	4.00	4.00	.79	-.13	-1.35
Creating an atmosphere that will help students to develop relations based on love and respect	4.07	4.00	4.00	.72	-.53	.48

Modeling students for respecting other peoples 'opinions and products	4.05	4.00	4.00	.59	-.01	.08
Encouraging efforts of learning for students at different stages of learning	4.05	4.00	4.00	.84	-1.45	3.80
Attending training. meeting and seminars to improve professional knowledge and efficacy	4.02	4.00	4.00	.72	-.45	.31
Creating opportunities to make students aware of their weakness and strengths	4.02	4.00	4.00	.65	-.59	1.53
Taking measures to motivate inefficient-demotivated learners	4.00	4.00	4.00	.74	-.39	.03
Guiding students to improve skill of self-control	3.98	4.00	4.00	.61	.01	-.14
Collaborating with experts in accordance with students' interests and needs.	3.95	4.00	4.00	.74	-.31	-.07
Guiding students to develop the skills of inter personal problem solving	3.93	4.00	4.00	.93	-.63	-.31
Designing a variety of activities in lesson plans that will answer students' needs	3.90	4.00	4.00	.74	-.64	.84
Analyzing factors that impedes learning and regulating in accordance with students' needs	3.90	4.00	4.00	.70	-.32	.29
Bringing awareness of legal and moral responsibilities regarding information and communication technologies	3.90	4.00	3.00	.86	-.05	-1.13
Creating an argumentative environment	3.88	4.00	4.00	.84	-.81	1.92
While implementing studies. taking students one step further from already gained status	3.88	4.00	4.00	.75	-.17	-.30
Knowing developmental stages and areas (cognitive. affective. and social) of students	3.88	4.00	4.00	.71	-.25	.06
Taking into consideration of development features of students in in-class and out-class practices	3.88	4.00	4.00	.71	.18	-.96
Making changes during teaching-learning process in accordance with students' needs and interests	3.85	4.00	4.00	.79	-.68	.53
Recording and analyzing personal development of students when needed	3.80	4.00	4.00	.95	-1.04	1.06
Identifying development stages. and individual differences by observation. interview. and individual and group projects	3.76	4.00	4.00	.94	-.42	-.59
Making a counseling plan that involves students' developmental features (interest-need. strengths-weaknesses)	3.76	4.00	4.00	.86	-.49	-.16
Collaborating with counselors in the process of students' career plans	3.73	4.00	4.00	.67	-.15	.07
Sharing students' personal development with parents	3.73	4.00	4.00	1.05	-.93	.69

As for the overall perception of self-efficacy of the teachers in terms of communications with students by taking the average of 31 items (see Table 6), it can be seen that 56,1% of the teachers believe that they are efficiently communicating with their students (N=23). As Table 6 shows, the lowest score is 3,26 which means that teachers see themselves at acceptable levels

in terms of their self-efficacy, not very efficient though. The mean score for the communication with students practice is 3.98 with a standard deviation of 0.4. The mode and the median for overall perception of communication with students for self-efficacy is 4.03, therefore, it can be said that teachers are predominantly consider themselves as efficient in the situations stated in the survey. Furthermore, when we look at Chart 2, we can see that although slight, there is a negatively skewed distribution of scores because the scores teachers gave to the practice gathered above the mean score of 3,98, and the median and the mode is higher than the mean. The reason for a result as such might be that more teachers see their performance "efficient" when it comes to communication with their students when compared to the ones who think they need improvement.

Table 6

Descriptive Statistics for Communication with students

	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
Communication with students	3.98	4.03	4.03	0.4	3.26	4.74

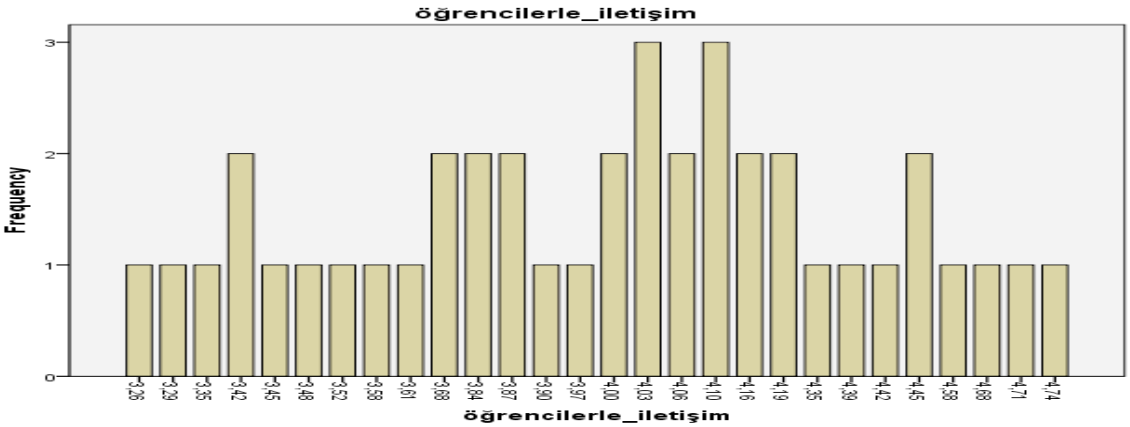

Figure 2. Distribution of communication with students

Teaching-learning process

When it comes to teaching- learning process, Table 7 reveals that teachers find themselves most efficient for item 18, which is about "deciding what the objectives and gains in the lesson plans will be". This item receives a mean score of 4,15 with a standard deviation of 0,65. This item is followed by item 26, which is about "using the technological devices efficiently." This statement has a mean score of 4,10 as 36 of the teachers believed that they efficiently used technology in their classes. Teachers in our sample also rated item 35 which is about "guiding students for their using time efficiently in and out of lessons" higher than the other items with a mean score of 4,08. Only 8 teachers out of 41 believed that they need to improve themselves on this subject.

When we look at the items ranked at the bottom of the list, we can see that item 3 which is about "taking students' socio-cultural traits into consideration while planning activities receives the lowest scores from the teachers with a mean score of 3,41. 39% of the teachers (N=16) believe that they need to take notice of socio-cultural traits of the students in their plans there are only three teachers who claim that they include such traits very efficiently in

their plans. In addition to this, item number 2 is also rated below the other items by 43,9 % of the teachers with a mean score of 3,52. Teachers (N=18) think that for their self-efficacy they must work on "planning the lessons by taking care of the needs of special students". However, this item is ranked above item 3 as there are 6 teachers claiming that they apply what is suggested in the statement in their lesson plan. Item 1 about "making personal learning plans" receives better scores with a mean score of 3,66 when compared to the last two items. Teachers (N=15) who constitute 36,6% of the sample believe that they should be working on this issue more.

Table 7

Descriptive Statistics for Components of Teaching-Learning Process

	Mean	Median	Mode	Std. Deviation	Skewness	Kurtosis
Identifying aims and gains in lesson plan	4.15	4.00	4.00	.65	-.72	1.88
Including the use of technology effectively	4.10	4.00	4.00	.58	.00	.08
Guiding students for effective use of time in the class and outside the class	4.08	4.00	4.00	.76	-.49	-.03
Stating activities for observation and evaluation	4.05	4.00	4.00	.74	-.47	.16
Applying behavior management principles by considering individual differences	4.02	4.00	4.00	.99	-1.36	2.50
Encouraging students to behave in accordance with laws and regulations	4.00	4.00	4.00	1.05	-1.23	1.56
Designing lesson plan by focusing on students	4.00	4.00	5.00	.95	-.55	-.66
Including appropriate methods and approaches in lesson plan	3.98	4.00	4.00	.96	-.66	-.43
Choosing sources and materials to be used in the classroom in the light of scientific data	3.98	4.00	4.00	.85	-.98	2.22
Creating an atmosphere in which students feel safe	3.98	4.00	4.00	.91	-1.21	2.13
Using time effectively in teaching-learning process	3.98	4.00	4.00	.79	-.28	-.53
Considering environmental features and differences in making lesson plan	3.95	4.00	4.00	.77	.09	-1.29
Designing fit for purpose activities	3.93	4.00	4.00	.93	-.82	1.01
Developing practical and economic materials	3.93	4.00	4.00	.79	-.51	.20
Detecting students' different needs to design learning activities	3.90	4.00	4.00	.80	-.74	.65
Using student focused techniques and means by considering students' different needs	3.90	4.00	4.00	.66	-.97	2.27
Keeping the maintenance of teaching equipment	3.90	4.00	4.00	.92	-.41	-.63
Designing learning environment that will positively effects students aesthetic touch	3.90	4.00	4.00	.89	-.70	.06
Giving constructive, explanatory and improving feedback	3.88	4.00	4.00	1.00	-.99	.71
Considering students' ideas in designing materials for teaching	3.88	4.00	4.00	.84	-1.08	2.44

learning process						
Making a time efficient lesson plan	3.88	4.00	4.00	.93	-.34	-.77
Knowing disciplinary regulation	3.85	4.00	5.00	1.06	-.62	-.23
Collaborating with other teachers and making interdisciplinary associations in planning lesson	3.85	4.00	4.00	.88	-1.08	1.92
Making use of environmental facilities in developing materials	3.85	4.00	4.00	.91	-.95	1.41
Regulating learning environment in accordance with activity type (individual, collaborative)	3.85	4.00	4.00	.94	-.84	.98
Taking measures to use equipment safely.	3.83	4.00	4.00	.83	-.21	-.53
Guiding students to control their feelings	3.80	4.00	4.00	.81	-.50	.08
Presenting students appropriate models for self-motivation	3.78	4.00	4.00	.96	-.60	.37
Developing materials for in-class and out-class activities	3.78	4.00	4.00	.72	-.05	-.27
Considering students views while setting up class rules	3.76	4.00	4.00	1.02	-.67	.06
Creating an appropriate setting for students with different experiences, characteristics, and skills	3.71	4.00	4.00	.98	-.70	.29
Solving behavior problems in a constructive manner with appropriate techniques (modeling, demonstration, drama)	3.71	4.00	4.00	.96	-.63	.41
Planning for individual learning	3.66	4.00	4.00	.94	-.39	-.62
Planning by considering students with special needs	3.51	4.00	4.00	.93	-1.03	1.20
Considering social and cultural characteristics of students while planning activities	3.41	4.00	4.00	1.14	-.58	-.38

When it comes to overall perception of self-efficacy of the teachers in terms of teaching-learning process by taking the average of 35 items (see Chart 2), we can see that 50,5% of the teachers (N=20)believe that they are efficient in what they apply in their teaching-learning process. As Table 7 shows, the average of minimum scores is 2.89 which means that 21 teachers out of 41 see themselves at acceptable levels in terms of their self-efficacy. The mean score for the teaching-learning process is 3,87 with a standard deviation of 0.46. The mode and the median for teaching-learning process are 3,97. What is more, Chart 3 reveals that there is a slight negatively skewed distribution of scores as the median and the mode is higher than the mean. In addition, scores are above the mean score of 3.87 showing that teachers tend to assess their self-efficacy with regards to teaching-learning process as “efficient”.

Table 8

Descriptive Statistics for teaching-learning process

Teaching-learning process	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
	3.87	3.97	3.97	.46	2.89	4.51

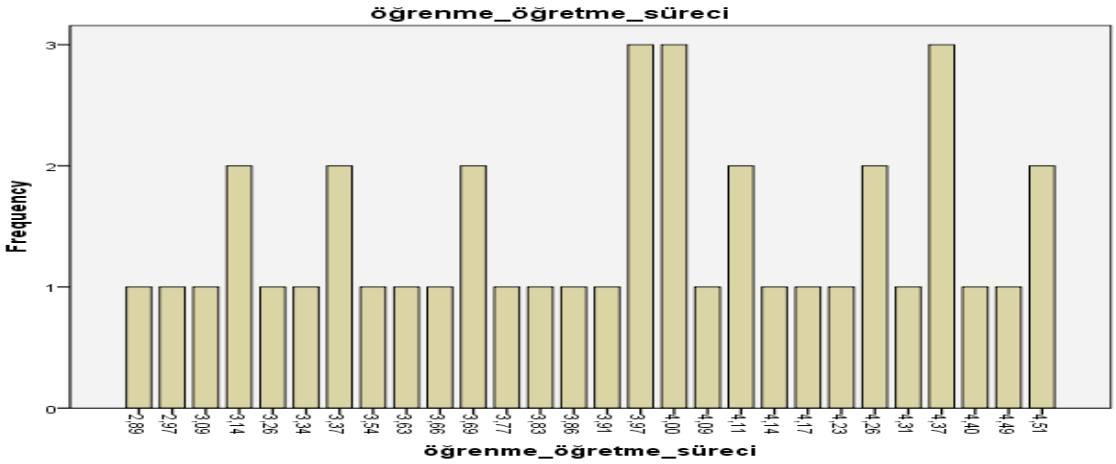

Figure 3. Distribution of teaching-learning process

Observation-evaluation

Results of the components of observation-evaluation section seem to be almost the same when compared to the other sections. When put in a rank, first three items receive mean scores around 4,00. Item 23 that is about "checking students' projects, homework, etc. and sharing the results with them" receive the highest scores from the teachers with a mean score of 4,10. Also, 37 teachers out of 41 believe that they efficiently check the works done by the students and share the results with them. In addition to this, they claim that they efficiently "follow the ethical rules while sharing the test results", therefore the item 24 has a mean score of 4,08. Similarly, 31 teacher evaluated themselves as efficient in "turning the tests results into understandable results. The mean score for this item is 4,00 and only 10 teachers think that they need to improve themselves with regards to observation-evaluation processes.

When we look at the bottom three items of the list, item number 10 receives the lowest scores from the teachers with a mean of 3,53. Teachers (N=16) do not find themselves efficient in "developing testing tools regarding needs". Similarly, as for item 9, we can say that 17 teachers think that they need to improve themselves in "developing an achievement test" and the mean score for this item is 3,54. Also, as item 11 indicates, teachers do not feel efficient in "testing the validity and reliability of testing tools" as the mean score is 3,59. The scores of these items seem to indicate that teachers' M.A degrees play a role in their assessment procedures. Interestingly, teachers (N=24) who constitute 56,6% of the sample believe that they can efficiently test the validity and reliability of their testing tools.

Table 9

Descriptive Statistics for Components of Observation-Evaluation

	Mean	Median	Mode	Std. Deviation	Skewness	Kurtosis
Checking student work and sharing the outcomes	4.10	4.00	4.00	.74	-1.74	7.02
Considering ethical principles while sharing measurement results	4.08	4.00	4.00	.94	-1.69	4.04
Transforming measurement results into meaningful format	4.00	4.00	5.00	1.10	-1.20	1.12
Referring constructive manner for negative behaviors	3.98	4.00	4.00	.82	-1.38	3.66

Rewarding success and positive behaviors	3.95	4.00	4.00	.84	-1.53	3.74
Sharing the results of measurement with administration and colleagues using information and communication technologies	3.95	4.00	4.00	1.00	-1.32	2.18
Considering students' reactions about measurement results	3.90	4.00	4.00	.80	-1.36	3.72
Using complementary measurement techniques for versatile evaluation	3.88	4.00	4.00	.84	-.29	-.51
Providing feedback for measurement results	3.88	4.00	4.00	.87	-1.18	2.28
Revising teaching strategies. approaches. and techniques	3.88	4.00	4.00	.75	-1.30	4.44
Including reliable and valid measurement tools	3.83	4.00	4.00	.77	-.03	-.58
Revising measurement tools in accordance with needs	3.80	4.00	4.00	.95	-1.22	2.16
Keeping records to monitor student development	3.78	4.00	4.00	.91	-.80	1.08
Developing alternative materials. strategies. and activities when needed	3.78	4.00	4.00	.91	-.17	-.80
Transforming measurement results into tables. graphics and visuals	3.76	4.00	4.00	1.07	-.91	.58
Rearranging learning environment in accordance with needs	3.76	4.00	4.00	.86	-.74	1.44
Sharing the results of evaluation results with parents using information and communication technologies	3.76	4.00	4.00	1.07	-1.17	1.39
Choosing / Preparing scales measuring higher cognitive skills (analyzing. problem solving)	3.73	4.00	4.00	1.00	-.37	-.85
Choosing / Preparing scales measuring affective domains (attitude towards the course. value. and beliefs)	3.71	4.00	4.00	.87	-.32	-.42
Using appropriate statistics while reporting measurement results	3.66	4.00	4.00	1.13	-.91	.37
Identifying fit for purpose measurement tools in planning	3.63	4.00	4.00	.83	-.04	-.48
Choosing / developing tools for measuring motor skills	3.61	4.00	4.00	.92	-.34	-.61
Testing reliability and validity of the measurement tools	3.59	4.00	4.00	1.18	-.74	-.23
Developing appropriate achievement test	3.54	4.00	4.00	1.05	-.44	-.52
Developing fit for purpose scales (creating an appropriate answer key for objective scoring)	3.53	4.00	4.00	1.20	-.49	-.80

Concerning overall ratings observation-evaluation section receives, we can say that there is a normal distribution of the scores as seen in Chart 4. The mean score for observation and evaluation is 3,81 and the standard deviation is 0,59. The mean is between the median and the mode and the minimum score is 2,08. The scores given to the statements in this section indicate that teachers evaluate themselves as at acceptable levels and even efficient in performing the observational assignments and evaluations. 20 teachers rated the statements below the score of 4,00 (efficient) and they believe the importance of improving themselves on this subject.

Table 10

Descriptive Statistics for Observation-Evaluation

	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
Observation-evaluation	3.81	3.92	3.44	.59	2.08	4.80

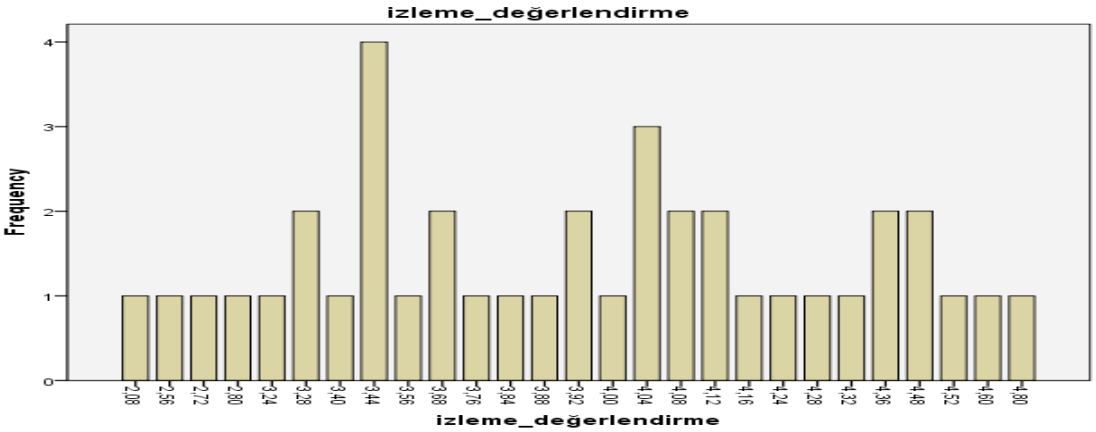

Figure 4. Distribution of observation-evaluation

Family-society relationships

When statistical analyses are conducted to see how the components of family-society relationships were rated by the teachers in terms of their evaluation of self-efficacy (see Table 11), we see that overall picture is indicating that teachers feel the necessity of improving themselves on this issue. Interestingly enough, none of the issues are rated higher than 4,00 "efficient". At the top of the list, we see item 4 which is about "guiding the families in order to solve students' problems" with a mean score of 3,68. However, at the bottom of the list is seen item 2 that is about "doing some activities in order to learn about the families with a mean score of 3,39. 17 teachers, constituting the 41,5 % of the teachers needs to improve themselves on carrying out different activities with the families of the students in order to learn more about them.

Table 11

Descriptive Statistics for Components of Family-society relationships

	Mean	Median	Mode	Std. Deviation	Skewness	Kurtosis
Guiding parents for solving students' problems	3.68	4.00	4.00	1.13	-.87	-.01
Informing parents about developments in legal rights and responsibilities regarding education	3.61	4.00	4.00	1.12	-.63	-.21
Conducting studies to ensure parent involvement and collaboration	3.54	4.00	4.00	1.12	-.54	-.39
Knowing parents' social-economic and cultural characteristics	3.51	4.00	4.00	1.08	-.67	.37
Carrying out activities to know the parents (meetings. interviews. and home visits)	3.39	4.00	4.00	1.12	-.51	-.70

The overall perception of teachers' self-efficacy on family-society relationships is is around the mean of 3,55 as seen in Table 12. When we look at the distribution of the scores in chart 5, we can see that it is a negatively skewed distribution meaning that the mode being 4,00 and

the median being 3,80 is higher than the mean score. 23 teachers out of 41 rated this section below 4,00, for this reason we can say that teachers tend to feel that they need to improve themselves on the issue of family-society relationships.

Table 12

Descriptive Statistics for Family-Society Relationships

	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
Family-society relationships	3.55	3.80	4.00	.96	1.00	5.00

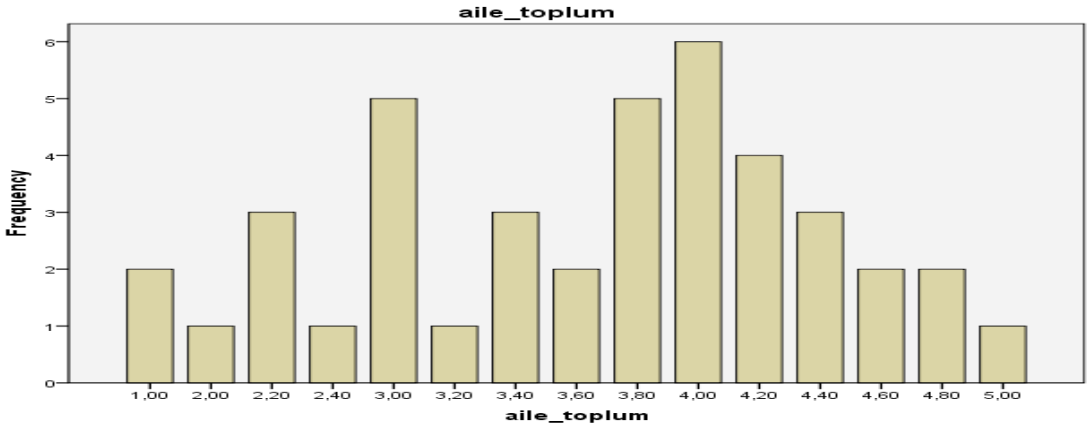

Figure 5. Distribution of family-society relationships

Curriculum

The section about curriculum is another section that receives the lowest scores from the teachers in terms of their evaluation of their self-efficacy. None of the components of this section was above the level of "efficiency with a mean score of 4,00. The item 2 which is about "ordering the content according to features of the topics" receives the highest scores from the teachers with a mean score of 3,88. The mean scores of other items are close to each other, and besides the item ranked at the bottom of the list is still between the range of 3,50 and 4,00 with a mean score of 3,61. 19 teachers constituting the 46,2% of all teachers in our sample think that they need to improve themselves on "applying the principles and approaches of special field teaching program".

Table 13

Descriptive Statistics for Components of Curriculum

	Mean	Median	Mode	Std. Deviation	Skewness	Kurtosis
Grading the content in a hierarchic manner	3.88	4.00	4.00	1.00	-0.83	0.46
Being able to interpret curriculum designed within the context of content area	3.88	4.00	4.00	0.98	-1.09	1.07
Arranging / Applying teaching process considering the distribution of content area in grades and levels	3.80	4.00	4.00	0.90	-1.11	1.64
Helping the process of curriculum design in content area	3.80	4.00	4.00	1.01	-0.83	0.39
Identifying the importance of learnt data in the curriculum	3.73	4.00	4.00	0.98	-0.95	0.62
Applying principles and approaches of content area	3.61	4.00	3.00	1.02	-0.31	-0.33

When we get the average score for the curriculum out of these 6 items we get a mean score of 3,78 (see Table 14) which states, as was claimed above, 17 out of 41 teachers do not assess themselves as efficient teachers on the issue. In addition, as seen in Chart 6, the distribution of the scores is negatively skewed, with a mean lower than the mode and the median (4,00). Although almost half of the teachers need improvement on this subject, there are still many teachers gather higher than the mean score. The minimum score being 1,00 probably manipulates the overall results for this section and brings about this kind of distribution rather than a normal distribution.

Table 14

Descriptive Statistics for Curriculum

Curriculum	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
	3.78	4.00	4.00	.80	1.00	5.00

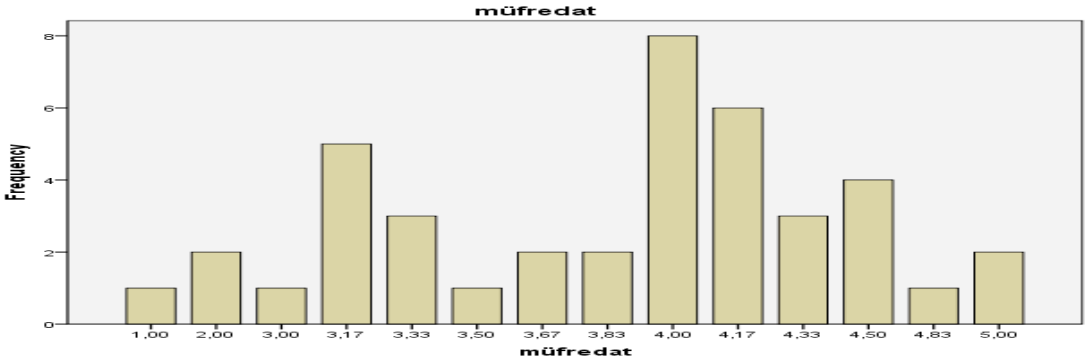

Figure 6. Distribution of curriculum

Analysis of Independent Variable: Field of teaching

After looking into the components of the questionnaire section by section, it is time to investigate the differences between teachers in terms of branches they are teaching, as the field of teaching is the independent variable of the study. In order to be able to answer the research question asking if there are any differences among teachers in their perception of self-efficacy regarding their branches, we need to examine the group statistics first.

The most striking difference between the means of the dependent variables in terms of field of teaching is in family-society relationships and curriculum (see Table 15). When One-way ANOVA analysis is conducted, it can be seen that the teachers of ELT and teachers of different fields significantly differ from each other in terms of their self-efficacy in family-society relationships at the significance level ,002. This is followed by curriculum, where ELT teachers assess themselves significantly different from teachers teaching in different branches at a significance level ,017. Apart from these results, we can see no important differences between these groups of teachers in terms of their self-efficacy for the items in the survey. However it should be noted that out of 6 component of the concept of self-efficacy, only two of them are the ones that the group of teachers differ from each other. Therefore, we need to look at the concept as a whole again.

Table 15

Group Statistics and ANOVA Results

	Field of teaching	Mean	Std. Deviation	Std. Error Mean	Mean Square	Sig.
Personal development	English	3.7304	.75218	.18243	.525	.200
	Other fields	3.9464	.35798	.07812	.308	
Communication with students	English	4.0538	.48822	.11507	.176	.301
	Other fields	3.9124	.32994	.07200	.160	
Teaching-learning process	English	3.9302	.43840	.10333	.115	.466
	Other fields	3.8157	.47317	.10580	.212	
Observation evaluation	English	3.6400	.77369	.18765	.837	.125
	Other fields	3.9500	.35727	.07989	.340	
Family-society relationships	English	3.0222	1.10802	.26116	7.779	***.002****
	Other fields	3.9714	.53399	.11653	.742	
Curriculum	English	3.4815	1.03987	.24510	3.543	***.017****
	Other fields	4.0714	.41690	.09098	.566	

When we group six dependent variables which are actually the six sections of the survey into one in order to see the overall ratings of the teachers' self-efficacy, the results support the previously conducted analysis. Another One-way ANOVA test is conducted to see if field of branches is significant in terms of teachers' self-efficacy. As Table 16 indicates, there is not a significant difference between the ELT teachers and teachers from other fields in terms of self-efficacy. Significance level being ,161 tells us that teachers rate themselves almost at the same levels regardless of the branches they are teaching.

Table 16

One way ANOVA results for Self-Efficacy

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.425	1	.425	2.051	.161
Within Groups	7.260	35	.207		
Total	7.685	36			

Controlling Variables

In addition to effects of independent variable, which is the different branches of teachers on the teachers' perceptions of self-efficacy, some controlling variables such as gender and age are also investigated to see if they are affecting the perceptions of teachers.

Gender

Gender is one of the independent variables that should be investigated for its possible effects on the perception of self-efficacy. When the mean scores for male (=3,7758) and female (=3,8623) teachers are compared (see Table 17), it is seen that female teachers rate themselves higher in terms of self-efficacy. Although male teachers rated themselves lower than the females, the mean difference is a minor one an as a result we can conclude that the difference between male and female teachers is not significant. Female teachers think that they are sufficient in applying what is suggested in the survey and slightly think of improving their weak sides as the mean score indicates. For this reason, it cannot be actually said that gender plays a significant role on the perception of self-efficacy, as all the teachers, regardless of their gender, think positively about the practice.

Table 17

Descriptive Statistics by Gender

Gender	Mean	N	Std. Deviation
Female	3.8623	20	.46115
Male	3.7758	17	.47276
Total	3.8226	37	.46204

Age

As for the effect of age on the perception of self-efficacy, we can say that overall perception of teachers is positive with a mean of 3,8226. As seen in Table 18, although slight, teachers (N=3) aged between 36-45 are the ones who rated their self-efficacy higher than other teachers with a mean score of 3,9477. Second highest rate come from the first group of teachers aged between 21-25 with an average of 3,9373. The group of teachers (N=21) aged between 26-35 have a lower score in terms of self-efficacy with a mean score of 3,7337. It can be said that there is first a gradual decrease in terms of assessments of the teachers as the age increases, which creates a negative correlation. Then as the age continues to increase, we observe an increase in the ratings of the teachers especially after the age of 35. However, when a regression analysis is conducted, it is revealed that the significance of this increase is not very meaningful. In brief, it can be said that there is a negative correlation between age and perception of self-efficacy at first, but then as the age increases around 30s, the scores increase too creating a positive correlation between the age of the teachers and their self-efficacy.

Table 18

Descriptive Statistics by Age

Age	Mean	N	Std. Deviation
21-25	3.9373	13	.42261
26-35	3.7337	21	.50640
36-45	3.9477	3	.12091
Total	3.8226	37	.46204

Results

In order to control the effects of each variable, a Regression Analysis was conducted to see the factors affecting the perception of self-efficacy altogether. As Table 19 indicates, gender (p=0,508) or age (p=0,478) are not effective factors on perception of teachers self-efficacy at all. Although it is not significant, field of teaching is very close to be considered as significant with a p level of 0,128. We can see the reason why the results for field of teaching is very close to significance level when compared to gender and age when we check the variables individually. However, it is through regression analysis that we see the effects of the variables better. Thus, we can say that age and gender affect the perception of self-efficacy less than the branches of the teachers participating in the survey. As a result, it can be concluded that as the hypothesis of the study indicates, the field of teaching is the most important factor affecting teachers' perception of self-efficacy among all the independent variables even though it is found to be insignificant by the statistical analyses .

Table 19

Regression Analysis for all Variables

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	3.770	.354		10.652	.000
	field of teaching	.240	.154	.263	1.561	.128
	gender	-.104	.155	-.113	-.669	.508
	age	-.092	.128	-.121	-.717	.478

Dependent Variable: self-efficacy

When we look at the overall results for self-efficacy by adding all the results of its components that were investigated as different parts and taking their average, we can see that the mean score for self-efficacy is 3,82. Interestingly enough, mode for the self-efficacy is very low being 2,52. Since the mean is between the median and the mode, we can say that there was a normal distribution of the results. We can conclude that teachers tend to see themselves as efficient teachers and they slightly think that they need some improvement as the results is a little bit below 4.00.

Table 20

Descriptive Statistics for Self-efficacy

self_efficacy	**Mean**	**Median**	**Mode**	**Std. Deviation**	**Skewness**	**Kurtosis**
	3.82	3.95	2.52	.46	-.75	.45

Discussion, Conclusion & Implementation

The purpose of this research paper was to investigate teachers' perceptions about MA programs on their self-efficacy and to identify factors such as age and gender that are supposed to be affecting perceptions of self-efficacy. First of all, when we consider the positive and negative perceptions of teachers according to the literature, we can say that not only ELT teachers but also teachers from different branches assess themselves around moderate level as a result of this study. They believe that they are efficient teachers considering their personal development, communication with students, teaching-learning process, family society relationships observation-evaluation and curriculum. As Woolfolk and Hoy (2000) suggest, these are experiences conditions, observing others' experiences, and witnessing the success and verbal convictions of family, friends and colleagues. The instructors in this study believe that communication with students is the area that they feel most successful and confident. On the other hand, it is also important to note that despite what is claimed in the literature, teachers do not think that they have a good relationship with the families of their students and feel the necessity of improving themselves.

Apart from the overall perceptions of self-efficacy, this study also looked for some factors that could be effective in teachers' perceptions of self-efficacy. Therefore, as a further step in the study it was investigated why teachers do not predominantly feel "very efficient". As was suggested in the hypotheses of the study, certain factors such as field of teaching age and gender could be effective in teachers' overall perceptions of their efficacy. When we analyze the reflections of teachers, we can see that the independent variable of the study, being the different branches of teachers does not play an important role in the perception of self-efficacy. For this reason, the hypothesis suggesting that teachers working in different fields rate their self-efficacy higher than ELT teachers should be rejected. The difference between High school teachers and teachers from different branches is only significant in terms of family-society relationships and curriculum development. Besides, considering the effects of – age and gender on this variable, the results show that the independent variable of the study is proved insignificant.

Some controlling variables namely, age and gender were also investigated to see if they affect the perceptions of teachers. Gender being one of the most important factors investigated was found to be insignificant alone. Likewise, after eliminating the effects of other variables, it still seems to be unimportant for perceptions of the teachers. Hypothesis supporting the idea that gender differences might be effective in teachers' perception of self-efficacy and the idea that male and female teachers perceive self-efficacy differently must be rejected here because it is obvious that both female and male teachers see evaluate themselves as efficient teachers with means very close to each other. A further study investigating the relationship between the personality traits of teachers and characteristics of self-efficacy process would reveal why this is the case.

As for age, which is the second controlling variable of the study, we can say that as age increases the instructors feel efficient however, they feel they need improvement when they are around their 30s. The hypothesis that might claim that as age increases, the perception of teachers' self-efficacy increases must be rejected as well, since there is both a decrease at first then an increase considering the results. Although not significant, there is a negative correlation between the age of the teachers and perception of self-efficacy, at first. According to the study, as age increases, instructors have feelings that are more negative towards their own success. However, after the age of 36, they start to feel surer of their efficiency as the correlation between their efficacy and age becomes positive. This could be due to the fact that

as teachers have more experience, , they start to fall into the same category with the novice teachers in terms of regarding themselves as efficient teachers.

Consequently, the field of teaching which is the independent variable of the study, seems insignificant in terms of teachers' perception of their self-efficacy. In addition to the findings related to the field of teaching, the controlling variables gender and age do not seem to be making much difference on the perception of teachers of their self-efficacy, either. Similarly, the overall results show that teachers believe they feel efficient in their way of teaching. They report that they are competent in the situations stated in the questionnaire, and they little need improvement. Family-society relationships and curriculum development are the subject matters that teachers felt the need of improvement compared to the other components of self-efficacy.

Implementation

Based on the major findings of the study, some suggestions can be offered regarding teachers' self-efficacy. The degree to which teachers evaluate their own teaching differs from each other according to the mean scores, however, these differences are not significant when regression analyses are conducted. Nevertheless, we might need further investigation on the background factors like field of teaching, age and gender in order to see their influence better. Also, the degree to which self-development is fulfilled and the impediments to growth could be investigated as a further research. For example, exploring what kinds of problems teachers face throughout their professional development, analyzing their needs to improve them when they assess themselves, and defining the ways that would be helpful for the improvement of teaching skills could be beneficial not only for the teachers but also for administrators and teacher trainers, and more realistic INSET practices would take place in the institutions. In addition, by collecting data from the administrators, teacher trainers and even students about teachers' efficacy through observations, surveys, and interviews, how much teachers give importance to these activities and to what degree they use these practices to improve themselves and their capacities as teachers could be investigated for a better analysis and wider picture of the issue. Some more suggestions may be made as below:

1) Seminars, in- service training for the self-development of teachers should be prepared by The Ministry of Education.
2) Teachers who have low-motivation and satisfaction in terms of his branch should be channeled to their interests and desires.
3) Providing teaching equipment for school may help to improve the self-efficacy of teacher.
4) Self-efficacy beliefs of teachers can be investigated for different aspects of effects and factors.
5) More researches can be carried out to find the self-efficacy beliefs of teachers from other specific braches such as: math, physics, ELT instructors

It can also be said that this study could contribute to future directions in research and practice in the field, especially in Turkey. The results of the study may provide an insight to teacher development in Turkey by helping the teachers and teacher trainers. Not only the administrators but also the staff developers and teacher trainers then, try to take steps for teachers who think they need to improve some parts of their teaching as a result of their self-efficiency evaluations. Although we can see no important differences between the groups of teachers in terms of their self-efficacy for the items in the survey, it should be noted that out of 6 component of the concept of self-efficacy, two of them (family-society relationships, and curriculum) are the ones that the group of teachers differ from each other. For this reason, this

perspective of the study may help teachers become aware of their preferences of their professional development and dwell more into the depths of life-long process of learning- as well as teaching.

Considering the positive and negative perceptions of teachers according to the literature, we can say that not only ELT teachers but also teachers from different branches assess themselves around moderate level as a result of this study. They believe that they are efficient teachers considering their personal development, communication with students, teaching-learning process, family society relationships observation-evaluation and curriculum. It was also seen that teachers' self-efficacy level was closely related to their field of teaching. As for the impact of MA program on their self-efficacy seems to be dependent on their instrumental motivation. The teachers believe that they are efficient in teaching yet need to improve their family-society relationships and curriculum development components of self-efficacy. They do however state that the MA program they are studying at do not fully provide the opportunity for them to improve themselves. The curriculum of Master of Arts programs of education faculties should be designed to fulfill the needs of their students. Therefore, curriculum evaluation especially to identify the perception of their students could be done to identify the perception of these students and further analyze the aim of the program.

To conclude, we believe we should keep in mind what Bandura says. As he claims "What people think, believe, and feel affects how they behave. The natural and extrinsic effects of their actions, in turn, partly determine their thought patterns and affective reactions" (1986, p. 25). Therefore, we are what we believe, we are how we evaluate ourselves and we are what we have in our "brains".

Limitations

One of the limitations of the study is that only one type of data source, namely a questionnaire, was used to collect the data for this study. A better study could have been conducted using multiple date sources such as interviews, getting expert or student feedback or even observations as the name of the practice indicates. The limitations of the questionnaire were tried to be decreased by a comment section. However, the number of answers for this part of the questionnaire was no sufficient. Therefore, the study would have been strengthened by the inclusion of interviews carried out with every instructor in the institution; however, this was not possible considering the amount of time instructors would spend for the interview.

Another limitation is the convenience sampling method that was applied in order to collect the data. In order to avoid sampling bias and not to decrease the external validity of the research, it should be noted that the results of the survey is limited to the responses of a sample population of 41 teachers. Hence, neither can it be generalized beyond all teachers in Istanbul or Turkey.

References

Bandura, A. (1986). The explanatory and predictive scope of self-efficacy theory. *Journal of Social and Clinical Psychology, 4*(3), 359-373.

Cantrell, P., Young, S., Moore, A. (2003). Factors affecting science teaching efficacy of preservice elementary teachers. *Journal of Science Teacher Education*, 14 (3), 177-192.

Ekici, G. (2006). Meslek lisesi öğretmenlerinin öğretmen öz yeterlik inançları üzerine bir araştırma. *Eğitim Araştırmaları,* 6 (24), 87-96.

Fernandez-Chung, R.M. (2009). Peer observation as a mechanism to identify and promote quality teaching in higher education. Retrieved on July 11, 2011 from http://www.oecd.org/dataoecd/5/10/43977398.pdf

Gibbs, C. (2002). Effective teaching: exercise self-efficacy and thought control of action. Paper presented at the Annual Conference of the British Educational Research Association, University of Exeter, England, 12-14 September 2002

Henson, Robin K., (2001). Teacher self-efficacy: substantive implications and measurements dilemmas. Paper presented at the Annual Meeting of the Educational Research Exchange (College Station, TX, January 26, 2001).

Lewandowski, K. H. L., (2005). A Study of the relationship of teachers' self-efficacy and the impact of leadership and professional development. Indiana University of Pennsylvania, Master's Thesis, May 2005

Lomas, L. & I. Kinchin (2006) Developing a Peer Observation Program with University Teachers, *International Journal of Teaching and Learning in Higher Education, 18*(3), 204-214.

Saracoglu, A., Yenice, N. (2009). Investigating the self-efficacy beliefs of science and elementary teachers with respect to some variables. *Journal of Theory and Practice in Education*.

Raudenbush, Stephen W., Rowan, B., Cheong, Yuk F. (1992). Contextual effects on the self-perceived efficacy of high school teachers. *Sociology of Education, 65*(2), 150-167.

Tschannen-Moran, M. ve Woolfolk-Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*(7), 783-805.

Telef, B. B. (2011). The Study of teachers' self-efficacy, job satisfaction, life satisfaction and burnout, *Elementary Education Online*, *10*(1), 91-108.

Woolfolk-Hoy, A. (2000). Changes in teacher efficacy during the early years of teaching. Paper presented at the American Educational Research Association. New Orleans: LA.

Yılmaz, K. & Çokluk-Bökeoğlu, Ö. (2004). İlköğretim okulu öğretmenlerinin yeterlik inançları. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, 41*(2), 143-167.

Zimmerman, B.J. (1995). Development of self-regulated learning: Which are the key processes? *Contemporary Educational Psychology, 16*, 307-313.

The relationship between pre-service teachers' constructivist, problem-based and collaborative learning skills, reading habits and metacognitive awareness levels

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Abstract

As of 2004 the centralized curriculum implemented in primary education in Turkey is based on constructivist approach. There are differing and at times contrasting views about the description of constructivism. The discussions seem to center around whether the learners create or discover knew knowledge and whether the focus should be on the individual learner and cognitive processes associated with the construction or on how human knowledge is constructed and thus the instructional approach to be utilized. It is essential to investigate whether learners are furnished with necessary skills to construct their own knowledge. Because, the construction of knowledge can only be achieved via high level of metacognitive awareness which requires intensive critical reading skills. Therefore, this study focused on the relationship between pre-service teachers' constructivist, problem based and collaborative learning skills, reading habits and metacognitive awareness levels. The study was designed as a descriptive study. Relational screening model was used to describe the situation as the purpose of the study. It consists of 311 pre-service teachers from 3 different education faculties. The data were collected through multiple choice tests. The data were analyzed by using SPSS 20 (Statistical Package for Social Sciences) for regression analysis. The results showed that pre-service teachers' reading habits was significantly related to collaborative learning skills. Also their reading habits was significantly related to constructivist learning. Metacognitive awareness was strong predictor of reading habits. The resultss revealed that the most important predictor of metacognitive awareness was collaborative learning skills.

Keywords: Metacognitive awareness, reading habits, collaborative learning skills, problem-based learning skills, constructivist learning.

Introduction

The rapid developments in education changed the nature of teaching and learning. The focus of instruction shifted from teacher to student. Contrary to the past, present–day instruction requires students to be active learners in their own learning. According to Gaskins and Gaskins (1997) students cannot be seen as passive receivers of information and empty vessels to be filled with ideas. In new learning environments, students should participate actively in learning activities and construct their own knowledge while being guided by the teacher. Therefore, the focus of this study is on constructivist, problem based and collaborative learning climates. Constructivism is described as learners constructing their own knowledge via relating the new knowledge with the previous one (Ayas et. al, 2007). The learnes hence synthesizes knowledge rather than pure acceptance without questioning it (Şaşan, 2002). The accomplishment of learning is via learners making use of their previous knowledge as they are inquiring real-life problems and seeking for solutions (Wang et. al, 2008). Problem based learning (PBL) is based on constructivism and it aims to enhance students' critical thinking skills. Learning occurs in PBL by solving real world problems in small groups (Ram, Ram & Sprague, 2005). Collaborative learning on the other hand means learning occurs in small groups and students encourage each others learning process (Açıkgöz, 1992). The ultimate aims of all the constructivist learning approaches are to hold learners accountable of their own learning via creating the necessary learning environment for them to construct their own knowledge and improve their metacognitive skills.

There are many studies focusing on the impact of constructivist learning environments on learners' academic success. However it is essential to investigate whether learners are furnished with necessary skills to construct their own knowledge. Because, the construction of knowledge can only be achieved via high level of metacognitive awareness which requires intensive critical reading skills. Several studies have showed that there was positive relationship between the metacognitive awareness and reading skills. Çakıroğlu (2007) stated that learners who use metacognitive approach would be more successful than others in reading of materials. Brown, Armbruster and Baker (1986) claimed that metacognition played major role in reading. Due to these reasons, this study focused on the relationship between pre-service teachers' constructivist, problem based and collaborative learning skills, reading habits and metacognitive awareness levels.

Research Questions

This study has the following research questions:

1. Do pre-service teachers' constructivist, problem-based and collaborative learning skills predict their reading habits?
2. Do pre-service teachers' constructivist, problem-based and collaborative learning skills predict their metacognitive awareness?

Method

Research Design

This study designed as a descriptive study. Relational screening model was used to describe the situation as the purpose of the study. Karasar (2009) defined relational screening model as a type of model which aims to find out the reciprocal situation of two or more variables.

Participants

The study consists of 311 pre-service teachers from 3 different education faculties. 18.6% of the participants were male and 81.4% were female.

Measures

The data were collected via "Constructivist Learning Skills Scale","Problem-Based Learning Skills Scale"," Collaborative Learning Skills Scale","Metacognitive Awareness Inventory" and "Reading Habits Inventory".

Data Analysis

The data were analyzed by using SPSS.20 (Statistical Package for Social Sciences) for regression analysis.

Results

In this section, findings and interpretations takes place about sub-questions of the research.

Results about the first sub-question of the research

The first sub-question of the research was stated as "Do pre-service teachers' constructivist, problem-based, collaborative learning skills and metacognitive awareness levels predict their reading habits?"

Table 1

Prediction of Reading Habits With Constructivist, Problem-Based, Collaborative Learning Skills and Metacognitive Awareness Levels

	β	*T*	*p*	*R2*	*F*	*p*
Constant	20,520	1,512	0,132			
Constructivist learning skills	0,267	5,296	0,000			
Problem-based learning skills	0,094	2,022	0,044	0,374	45,636	0,000
Collaborative learning skills	0,204	3,459	0,001			
Metacognitive Awareness	0,318	5,739	0,000			

The results showed that pre-service teachers' reading habits was significantly related to constructivist learning, collaborative learning skills and metacognitive awareness ($p < 0,01$), whereas there was no statistically significant difference between reading habits and problem-based learning skills. On the basis of this finding, problem-based learning skills had not significant effect on reading habits. Also, it was found that the metacognitive awareness was strong predictor of reading habits.

Results about the second sub-question of the research

The second sub-question of the research was stated as "Do pre-service teachers' constructivist, problem-based and collaborative learning skills predict their metacognitive awareness?"

Table 2

Prediction of Metacognitive Awareness With Constructivist, Problem-Based, Collaborative Learning Skills And Reading Habits

	β	*T*	*p*	*R2*	*F*	*p*
Constant	7,064	0,942	0,347			
Constructivist learning skills	-0,004	-0,071	0,944			
Problem-based learning skills	0,004	0,090	0,928	0,400	50,977	0,000
Collaborative learning skills	0,429	8,030	0,000			
Reading habits	0,305	5,739	0,000			

Table 2 showed that metacognitive awareness was significantly related to collaborative learning skills and reading habits ($p < 0,01$), whereas there was no statistically significant difference between metacognitive awareness and constructivist learning skills, problem-based learning skills. Based on these findings it can be said that constructivist learning skills and problem-based learning skills did not make a meaningful contribution to metacognitive awareness. On the other hand, it was found that the most important predictor of metacognitive awareness was collaborative learning skills, followed by reading habits.

Discussion, Conclusion & Implementation

In this study, the relationship between pre-service teachers' constructivist, problem-based, collaborative learning skills, reading habits and metacognitive awareness levels were analyzed.

Data showed that pre-service teachers' reading habits was significantly related to constructivist learning (Table 1). Within the framework of constructivisim, students organize their thoughts and share ideas through reading the texts, books etc. Therefore, there is strong connection between reading and constructivism. Anderson and Freebody (1983) indicated that reading is a skill which based on broad vocabulary knowledge. Learners who have extensive vocabulary knowledge tend to high performance in reflecting their ideas.

The results shown in Table 1 indicate that pre-service teachers' reading habits was significantly related to collaborative learning skills. The literature shows that there is a strong link between reading and collaborative learning (Jacobs, 2000; Seetape, 2003; Vichadee, 2005). Combining reading with collaborative learning enhance students' reading motivation. Wilcox (2008) found that collaborative learning positively affect students' reading attitudes. Walberg and Tsai (1983, 1985) indicated that learners' reading achievement were positively related to their positive attitude toward reading. Vichadee (2005) examined the effectiveness of collaborative learning in small groups on reading skills of university students. The results of the study showed that collaborative learning had increased students' reading skill.

Based on findings (Table 1), metacognitive awareness was strong predictor of reading habits. Metacognitive strategies help learners to become strong readers by allowing them to control their own learning (Yaylı, 2010). Rand Study Group (2002) indicated that good readers possess positive habits towards reading and they understand what they are reading and critically analyse the meaning of the text. Paris and Winograd (1990) reported that "students can enhance their learning by becoming aware of their own thinking as they read" (p.15).

The findings revealed that the most important predictor of metacognitive awareness was collaborative learning skills (Table 2). Bilgin and Geban (2006) indicated that colllaborative learning improve students' critical thinking, reasoning, and problem-solving skills that means "metacognitive awareness". Stevens and Slavin (1995) indicated that peer interaction in collaborative learning environments plays important role in enhancing students' cognitive understanding. According to Jayabraba (2013), a learner who has metacognitive awareness monitor own learning process and plan cognitive activities.

There are some limitations of this study. First, the results of this study based on students' responds of multiple choice type format of likert scale. So, participants' motivation is important to measure the true attitudes of respondents. Students might get bored while answering the measures. Long statements in scales might reduce students' motivation.

The results of this study is hoped to provide insights into the improvement of the existing curriculum.

Based on the findings of the study, teachers are encouraged to promote the use of collaborative learning among students. Because the results of the study showed that collaborative learning skills are predictor of both reading skills and metacognitive awareness. Therefore, educators should recognize the value of collaborative learning.

References

Açıkgöz, K. (1992). *İşbirlikli öğrenme, Kuram, Araştırma, Uygulama*. Malatya: Uğurel Matbaası.

Anderson, R.C. & Freebody, P. (1983). *Reading comprehension and the assessment and acquisition of word knowledge.* In J.T. Guthrie (Ed.), Comprehension & teaching: Research reviews. Newark, DE: International Reading Association.

Ayas, A., Çepni, S., Akdeniz, A., Özmen, H., Yiğit, N., & Ayvacı, H.Ş. (2007*) Science and technology teaching from theory to application.* PegemA Yayıncılık, 6. Baskı, Ankara.

Bilgin, I., & Geban, O. (2006). *The effect of cooperative learning approach based on conceptual change condition on students' understanding of chemical equilibrium concepts.* Journal of Science Education and Technology, 15(1), 31-46.

Brown, A.L, Armbruster, B. B & Baker, L. (1986). *The role of metacognition in reading and studying.* In: Orasanu J (Ed.), Reading Comprehension: From Research to Practice.Hillsdale, NJ: Lawrence Erlbaum pp. 49-75.

Brown, K. W., & Ryan, R. M. (2003). *The benefits of being present: Mindfulness and its role in psychological well-being.* Journal of Personality and Social Psychology, 84, 822-848.

Bruffee, K. A. (1999). *Collaborative learning: Higher education, interdependence, and the authority of knowledge* (2nd ed.). Baltimore: John Hopkins University Press.

Cambourne, B. (2002) *Holistic, integrated approaches to reading and language arts instruction: The constructivist framework of an instructional theory.* In Farstrup, A. and Samuels, S.J. (Eds.) What Research Has to Say About Reading Instruction, 3rd edition. Newark, DE: IRA, pp. 25-47

Çakıroğlu A (2007). *Üstbilişsel strateji kullaniminin okuduğunu anlama düzeyi düşük öğrencilerde erişi artirimina etkisi.* Doktora tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Dooly, M. (2008). *Constructing knowledge together (21-45). Extract from telecollaborative language learning. A guidebook to moderating intercultural collaboration online*. M. Dooly (ed.). Bern: Peter Lang.

Finkle, S. L. & Torp, L. L. (1995*). "Introductory documents".* Illinois Math And Science Academy.

Gaskins, R.W & Gaskins, I.W. (1997*). Creating readers who read for meaning and love to read: The Benchmark school reading program.* In S. Stahl & D. Hayes (Eds.), Instructional models in reading (pp. 131–159). Mahwah, NJ: Erlbaum.

Hmelo-Silver, C. (2004). *Problem-based learning: What and how do students learn? Education Psychology Review*, *16*(3), 235–266.

Jacobs, G. M. (2000). *Reading alone together: enhancing extensive reading via student-student cooperation in second language instruction.* Paper presented at the Malaysian International Conference on English Language Teaching. (Malacca, Malaysia, May, 2000).

Jayapraba. G. (2013) *Metacogive instruction and cooperative learning- strategies for promoting insightful learning in science. International journal on New Trends in education and their Implications, 4*(1), 165-172.

Karasar, N. (2009). *Bilimsel araştırma yöntemi*. Ankara: Nobel Yayınevi.

Paris, S. G., & Winograd, P. (1990). *How metacognition can promote academic learning and instruction*. In B. J. Jones & L. Idol (Eds.), Dimensions of thinking and cognitive instruction (pp. 15–51). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Ram, P., Ram, A., & Sprague, C. (2005, June). From student learner to professional learner: training for lifelong learning through online PBL. International Conference on Problem-Based Learning, Lahti, Finland. Retrieved from http://www.cc.gatech.edu/faculty/ashwin/papers/er-05- 03.pdf

RAND Reading Study Group (2002). *Reading for understanding: Toward an R & D program in reading comprehension*. Santa Monica, CA: RAND.

Stevens, R., & Slavin, R. (1995). *The cooperative elementary school: Effects on students' achievement, attitudes and social relations*. American Education Research Journal, 32(2), 321-351.

Şaşan, H. H. (2002*). Yapılandırmacı öğrenme. Yaşadıkça Eğitim*, 74-75, 49-52.

Walberg, H. J. & Tsai, S. (1985). *Correlates of reading achievement and attitude: A national assessment study. Journal of Educational Resear*ch, *78*, 159-167.

Walberg, H. J. & Tsai, S. (1983*). Reading achievement and attitude productivity among 17-year olds. Journal of Reading Behavior*, 15, 41-53.

Wang EE, Quinones J, Fitch MT, Dooley-Hash S, Griswold-Theodorson S, Medzon R, Korley F, Laack T, Robinett A & Clay L. (2008). Developing technical expertise in emergency medicine--the role of simulation in procedural skill acquisition. *Acad Emerg Med, 15(*11), 1046-57.

Wilcox, V. (2008). *Collaborative learning with adolescents brings about social change for at-risk freshmen* (Doctoral dissertation). Walden University. Ann Arbor, United States. Retrieved from ProQuest Digital Dissertations database. (AAT 3320685)

Wichadee, S. (2005). *The Effects of cooperative learning on english reading skills and attitudes of the first-year students.* BU Academic Review. (4) 2, July-December.

A comparative study of candidate teachers' mental perceptions about the concepts of school and teacher

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Abstract

The aim of this study is to comparatively examine candidate teachers' metaphors about the concept of teacher and their mental perceptions about the concept of school. As a result, determining the similar and different aspects of candidate teachers' perceptions about the concepts of teacher and school, negative and positive aspects of these perceptions will be determined.The study has been designed in accordance with Phenomenology, which is one of the qualitative research methods. The sample of the study consists of 143 candidate teachers who study during 2014-2015 academic year in the education faculty of a university which was founded after 2006. The participants of the sample have been selected via random sampling method.As the data gathering tool, a form has been used which features statements such as "the teacher is like….." and "school is like a …… because……" Candidate teachers, who study various departments in education faculty and were informed about how the metaphor is created, have been wanted to fill this form in an hour. These filled forms have consisted the data of the study. Content analysis has been applied to the data gathered. While analyzing the data, candidate teachers' metaphors about the concept of teacher have been evaluated under 8 conceptual categories and these categories have been evaluated as regards with candidate teachers' mental images about the concept of school.The study shows that candidate teachers' perceptions about the concept of school are more negative than their perceptions about the concept of teacher.

Keywords: Metaphor, mental image, school metaphor, teacher metaphor.

Introduction

Rapid changes (advancement in technology, globalisation etc.) experienced recently in the World have also occurred in the education system of Turkey and this process of change has led to a shift in the mental perceptions of the concepts of school and teacher. Perceptions of the concepts of school and teacher, which have a great part in the development of the societies, indirectly show the level of development belonging to that society. Thus, it is of high importance for the Turkish Education System to carry out a comparative study on the prospective teachers' perceptions' of the concepts of school and teacher. Being an important means in revealing mental perceptions, metaphors include many meanings and help us perceive the World. Metaphors have a shaping effect on one's ability of self-expression, utilizing language and thinking style (Morgan, 1980).

There are many studies revealing the metaphors about the concepts of school and teacher in the literature (Baker, 1991; Radman, 1997; Bromme & Stahl, 1999; Bredeson, 1988; Cerit, 2006; Ocak & Gündüz, 2006; Botha, 2009; Eaglestone, 2009; Güven & Güven, 2009; Oflaz, 2011; Özan & Demir, 2011). These studies generally aim at detecting the teachers' and students' perceptions of these concepts. According to the Saban's (2011) study aiming at revealing the metaphors about the concept of school, teachers' and candidate teachers' mental perceptions of the concept of school can be organized under ten categories. According to the findings of the study, most of the participants perceive the school as a place of culturing and shaping. According to Özan and Demir (2011), teachers and students most frequently likened school to the family. According to Özdemir's study (2012), while describing school, participants used the metaphor of prison many times. According to Kalyoncu (2012), teacher metaphors can be evaluated under 8 categories. Some of these categories can be expression

of love, part of life, educator, guide, artist, expression of difference, healer, reflection of life, expression of desperateness.

When evaluated generally, participants' perceptions of the concepts of teacher and school are positive in the surveys carried out among teachers and students (Cerit, 2006; Saban, 2008; Tuncay & Özçınar, 2009; Özdemir, 2012; Kalyoncu, 2012; Doğan, 2014). According to Doğan's study (2014), the percentage of students having negative perceptions towards school is 24 %. Given the necessity that every student should benefit from the education ultimately, this ratio, in fact, is very high. Thus, revealing the negative perceptions towards the teacher and the school, and providing solutions by detecting the reasons underlying these negative perceptions are of high importance.

The most important aspect of this study that differentiates from the others is the comparative examination of a candidate teacher's perception of the concept of teacher with his/her perception of the concept of school. So, negative and positive perceptions about the concept of teacher will be evaluated as regards with the negative and positive perceptions about the concept of school.

Method

Participants

The sample of the study consists of 154 candidate teachers chosen via simple accidental sampling method from the candidate teachers studying at the faculty of education during the 2014-2015 academic year in a state university founded after 2006.

Data Gathering

In order to detect the metaphors within the minds of candidate teachers studying at the faculty of education towards the concepts of teacher and school, a form was delivered to the participating including expressions such as "teacher is like a ……. because ……", "school is like a …… because ……..." . The participants were asked to complete the form in an hour as they feel. These forms constituted the data resource of the study.

Research Design

Analysis of the metaphors created by the candidate teachers was performed under 3 stages. During the analysis of the data, Saban's (2008) work on metaphors was taken as a reference.

1- **Stage of Code-building and filtering***:* At this stage, the metaphors created by the candidate teachers were ordered, as a result, a temporary list was obtained with which we could perform a profound analysis. This list was created considering the metaphor interpretations of the candidate teachers. At this stage, while building codes on the one hand, the metaphors accepted as irrelevant (n=9) due to reasons such as creating more than one metaphors, discrepancy between the metaphor and its explanation etc. were filtered and discarded from the data on the other hand. Thus, determining the real metaphors that are the objective of the stage of code-building and filtering, coding was performed and the first step of the study was completed.
2- **The stage of bringing metaphors together with the explanations:** At this stage of the study, the metaphors developed by the candidate teachers were examined and 81 valid metaphors were obtained. In order to detect the best metaphor explanations representing the relevant metaphors, the raw data was examined once more. The justifications of the metaphors in this list were conveyed protecting the style and words of the participants in

order to provide the reliability of the study. At this stage, the expressions best representing the 81 metaphors were listed and the sample metaphor list was created.

3- **The stage of category-building**: At this stage, whose main objective is to examine the developed metaphors in terms of similarities, the metaphors developed by candidate teachers were analysed as regards with their topics and resources. As the result of these analyses, the metaphor images about the concept of teacher were associated with their interpretations (i.e. teacher as a person processing and shaping) and 8 different conceptual categories were created. The metaphors under these categories were examined in terms of mental perceptions of the concept of school. 8 conceptual categories determined for the concept of teacher and the features of these categories are presented in Table 1.

Table 1

8 Conceptual categories fort he metaphor of teacher and features of these categories (Summary)

Who Shares Miseries
- He/She is the person who solves the students' problems. (Math. M. 21)
- The teacher shows the attention, compassion and affection the student wants. (Sos. Bil. F. 19)
- Teacher is the person with whom we share our problems. (Ing. M. 19) - Teacher is the person whop listens to you like a friend. (Sci.M. 22) - He/She is like our parents who always direct us to the good. (Sos. Bil. F. 20) - He/Sheis a person who is happy with his/her students' happiness and sorry with their sorrows. (Math. M. 19) - He/She is the student's resource of peace and serenity. (Ing. M. 21) - He/She is always with us during our most difficult times. (Math. F. 20) - I ask for his/her help when I am in trouble, they don't let me feel alone. (Soc. Sci. F.23)
Who Guides
- If the teacher doesn't do his/her job, the rods turn out to be impossible to follow. (Ing.F.21) - He/She is what the student needs in order to be sufficient. (Sci.M. 22) - The teacher introduces choices before the students and guides them for how to proceed through these choices. (Math. F. 19) - He/She is a consultant who helps students discover their potentials. - He/She is the person whop shows the life's way. (Sci. F. 23) - We find the right path thanks to them. (Ing. F. 23)
Who Administrates
- The teacher is dominant on the classroom and administrates who are in the class. (Soc. Sci. F.22) - He/She is the person who has the ability to keep the students within the classroom. (Sci. F. 19) - Teacher is the person who controls the student and leads him/her. (Math. M. 24) - Teacher is the person who controls the classroom. (Soc. Sci. M.20) - Teacher is the person who orders depending on their experiences. (Ing. F. 21)
Who Gives Information
- He/she is the center of knowledge.(Ing. F. 20) - Teacher is the person who constantly gives information like a computer. (Sos. Bil. F. 21) - He/she is the person who teaches what is right and what is wrong. (Ing. M. 25) - He/she is the person who always innovates themselves. - He/she is the person who teaches what is good, right and beautiful and who educates. (Soc. Sci. M.19) - Teacher provides students with the education that they can't get at home. - Teacher provides students with ready knowledge. (Sci. M. 23)
Who Processes and Shapes
- Teacher is the person who lays the foundation of the posterity. (Sci. F. 20) - Teacher is the person who beautifies the reading and writing abilities and shapes these abilities. (Soc. Sci. M.21) - Teacher is the person who shapes the students and maket hem mature. (Ing. M. 24). - Teacher is the person who processes the students like an artist and shapes them. (Sci. F. 22)

Who Enlightens and Opens up Horizon - Teacher is model with their behaviours, thoughts, life styles, appearances. They influence students with all these aspects. (Sci.F. 24) - Teacher radiates with the knowledge they convey, enlightens our environment. (Ing. M. 22) - Teachers shed light upon the future like the sun. (Soc. Sci. M. 23) - Teachers contribute to the realisation of the goals about the future. (Ing. F. 21)
Who Is Part of Life - Teacher teaches students the life. (Ing. F. 21). - Teacher is the person who helps students gain particular habits. (Math. F. 24) - Teacher is the person who beautifies the society. (Math. F. 21) - He/she is the factor which guides. (Ing. F. 20) - Teacher is the person who relaxes a person. (Soc. Sci. F. 20) - We see the teachers more often than the others. - Teacher is our goal of existence. (Sci. M.21) - Teacher is the person who shows that the life is not bad and parts constitute the whole with their personalities or others' examples. (Ing. F. 19)
Dictator - Teacher is the person who plans for the subject to be in accordance with the plan and to be compeleted in time. (Soc. Sci. F. 21) - Teacher is the person who gives big punishments for a very little mistake. (Sci. F.22) - Teacher is the person who teaches us everything except for what we need. (Ing. F. 24) - Teacher is the person who orders and gives homework; students obey them like soldiers. (Math. M. 20) - Teacher gives a chance to just a single student, others exploit. (Ing. M. 22) - They herd the students and think that students don't know anything. They are unaware of things such as art, sociality, entertainment. (Ing. M. 20) - They are life-ruining.(Math. F. 20) - They were grown up deprived of quality education, afraid of going beyond their boundaries and making mistakes, new things always scare them. (Soc. Sci. F. 23) - He/she has to come to the class and earn Money. (Math.F. 20) - Teacher is the person who prepares plans for people who have a higher position than them and who tries to account for their actions to the inspectors. (Soc. Sci. F. 21) - Teacher is the person who receives his/her salary every month and overbears the students. (Sci.M. 22) - Teacher is the person who forgets the past and tries to conform the students to what is there in his/her minds. (Ing. F. 23) - Teacher is the person who always take the responsibility of warning and monitoring. (Soc. Sci. F. 20) - Teacher is the person who teaches by force. (Soc. Sci. M. 24) - Teacher is the person who always interrogates and gives orders. (Sci. F. 20) - Teacher is the person who teaches us to be afraid, respect and be quiet. (Soc. Sci. F. 24.)

Validity and Reliability

Reliability in qualitative researches, in which participants present their experiences and interpretations directly and allow others to be aware of this, is like the internal validity in quantitative studies (Thomas & Magilvy, 2011). In order to provide the validity of this study, the process of analysis was explained in a detailed, transparent and comprehensible way. Besides, while creating the sample metaphor list, the best interpretation best representing the relevant metaphor was presented protecting the style and words of the participant.

Reliability of the study was carried out by consulting the experts in educational sciences whether the metaphors represent the 8 conceptual categories sufficiently. An expert in qualitative research techniques was given two lists one of which includes raw metaphor images and the other includes 8 conceptual categories. The expert was asked to match the metaphors with the conceptual categories, then the matching of the researcher and the expert was compared. As the result of the comparison, only one disagreement on the matching of the items was detected and it was understood that the expert evaluated the metaphor of traffic sign under a different category than the researcher. At this stage, in order to provide the

reliability of the study, Miles' and Huberman's formulae (1994, p. 64), which states that the conformity reliability between the researcher and the expert should be over 90 % and more, was used [(Reliability = agreement / agreement + disagreement x 100)]. According to this formulae, the reliability coefficient of this study [Reliability = 70 / (70+1) x 100 = 98.5) was calculated as 98 %. So, it was understood that the study reached the desired reliability.

Results

Examination of the candidate teachers' metaphors about the concepts of school and teacher as regards with 8 conceptual categories

Candidate teachers' metaphors about the concept of teacher were gathered under 8 conceptual categories. In table 2, metaphor created for the concept of teacher was examined in terms of the mental perceptions of the concept of school. According to table 2, 26 % of the candidate teachers (f=26) consider the teacher as a friend to share miseries, parents and family. 20 of the candidate teachers who consider the teacher as a person sharing their miseries, solving their problems and listening to them integrated the concept of school with the concept of teacher and described the school with the following metaphors: family f(9), home f(4), house(7). Six of the candidate teachers described the school as a discomforting place (prison f(2), suffering, cage, tension, bound).

The percentage of the candidate teachers who perceive the teacher as a guide is 16 % (f= 25). According to them, teacher is a guide who shows the students how to advance towards the future by discovering the potential the students have and also who introduces the students' new alternatives. In this context, candidate teachers described the teacher with the following metaphors: (guide f(8), idol f(5), handbook, role-model, example, master, translator, pathfinder f(2), leader, who makes the dreams come true, map f(2), traffic sign. 20 of the candidate teachers who described the teacher as a pathfinder-model perceived the concept of school positively while 5 of them perceived negatively (animal, zoo, bottomless pit, concrete, nightmare).

Percentage of the candidate teachers who consider the teacher as a person who administrates is 5,8 % (f=9). All of the candidate teachers who perceived the teacher as an administrator and leader (public relations director, director (f=5), state administrator (f=2), minister) perceive the school as a place or institution which is administrated (municipal building, factory (f=2), company, holding, work, home, world, parliament).

The percentage of the candidate teachers who perceive the teacher as a person who gives information and teach is9 % (f= 14). 3 of the participants who consider the teacher as a person who conveys knowledge to his/her students (question bank, who teaches, home of knowledge, data bank, library f(2), monument of knowledge, knowledge, resource, information box, book f(2), computer, internet) perceive the concept of school similar to the concept of teacher (learning place, library, archive). Only one of the candidate teachers who perceive the concept of teacher positively perceived the concept of school negatively by describing it as a trouble-some place.

Percentage of the candidate teachers who perceive the teacher as a person who processes and shapes is 12,9 % (f=20). 3 of the candidate teachers who perceive the teacher as a person who changes the students' behaviours, matures them and formats them once more likened the school to prison, four walls and mouse-trap.

Percentage of the teachers who perceive the teacher as part of the life is 14,9% (f=23). The candidate teachers who consider the teacher as an important element which maintains the life

(tree, sky, part of life (f=2), bee, water, tree (f=3), wind (f=5), flower, rose garden, queen bee, rose f(2), sugar, being steeped, money, everything) perceive the concept of school as an important element which beautifies life (life f(2), philosophy of life f(2), play house, soil, spider f(2), water f(2), home of knowledge, bread, breath, addiction, bee hive, soil, field, tea, samovar (tea-urn) f(2), coin bank, home f(2).

Percentage of the candidate teachers who perceive the teacher as a person who enlightens with his/her knowledge is 7,7 % f(12). The candidate teachers who described the teacher as a person who enlightens with his/her knowledge used the metaphors such as sun f(5), light f(2), clock, torch, jewellery box, lighthouse, candle while 3 of them evaluated the concept of school with negative metaphors such as a place visited compulsorily, prison camp, horror movie.

Percentage of the candidate teachers who evaluated the concept of teacher negatively as a dictator is 7,1 % f(11). While candidate teachers who evaluated the concept of teacher as a person who is dictator and domineers students by establishing rules constantly used the metaphors such as guardian, slave, who has to come, conceited, authority, compulsory server, enemy, annoying; they also evaluated the concept of school negatively by using metaphors such as prison f(3), experience, where the unemployed are trained, which is visited compulsorily, monotonous place, pessimist atmosphere, four walls, orphanage, time-loss, hell. Only one candidate teacher who evaluated the concept of teacher negatively perceived the concept of school positively by likening it to a place which trains the unemployed.

Table 2

Distribution of the 8 conceptual categories for the concept of teacher by metaphors

	Teacher	**f**	**%**	**School**
Who shares miseries	Parents	34	22	Family F(9), House F(7), Home F(4), Life F(4), Suffering, World, Prison, Resource Of Light, Food, Bread, Cage, See, World, Rehabilitation
	Family	1	0.6	Tension
	Friend	5	3.2	Entertainment, Computer, Prison, Bound, Family
Who guides	Guide	8	5.1	Machine, Home For Knowledge, Center For Development, Home, House, Bridge, Future, Sea
	Idol F(5) Handbook Role-Model Example Master Translator Pathfinder F(2) Leader Who Makes Dreams Come True Map F(2) Traffic Sign	17	11	Animal, Zoo, Bottomless Pit, World, Family, Country Theatre Social Facility Industry Library Father, Concrete System Nightmare Meeting Hall Preparation For Life
Leader	Public Relations Director Director F(5) State Administrator F(2) Minister	9	5.8	Municipal Building Factory (2), Company, Holding, Work, World, Home Parliament

Who gives information	Question Bank Who Teaches Home For Knowledge Data Bank Library(2) Monument Of Knowledge Knowledge Resource Information Box Book F(2) Computer Internet	14	9	Solar System Place Of Teaching Trouble-Some Place Archive Home ,Person Place For Social Activity Home Life Guarantee House World ,Library Family World
Who Processes and Shapes	Craftsman Trainer Engineer, Baker Trainer, Goldsmith, Mannequin Artist F(2) Master Trainer Gardener Farmer Construction Worker Coach, Refree Screwdriver Millstone Means Control Panel	20	12.9	Prison Mouse Trap Factory F(2) Clock, Art Studio Industry Out Of Life, Factory Flower Garden Super Market Home Life Factory Tree, Football Pitch Mill Book Factory Four Walls
Part of Life	Tree, Sky Part Of Life F(2), Bee Water Tree F(3) Wind F(5) Flower Rose Garden Queen Bee Rose f(2) Sugar, Being Steeped Money, Everything	23	14.9	Life F(2) Philosophy Of Life F(2) Play House Soil Spider F(2) Field, Water F(2), Home For Knowledge, Bread, Breath, Addiction Bee Hive Soil, Soil F(2) Samovar F(2) Home f(2)
Who Enlightens	Sun F(5) Light F(2) Clock Torch Jewellery Box Lighthouse Candle	12	7.7	Home(F5) World, Family Factory Place Compulsorily Visited Prison Camp Horror Movie House
Dictator	Guardian f(3) Slave Who Has To Come Conceited Authority Monster Compulsory Server Enemy Annoying	11	7.1	Prison F(3) Which Trains The Unemployed Compulsorily Visited Place A Monotonous Place Pessimistic Atmosphere Four Walls Orphanage Time Loss Hell
		154		

Examination of candidate teachers' negative perceptions about the concept of school in terms of their mental perceptions of the concept of teacher

Table 3 indicates the examination of candidate teachers' negative perceptions about the concept of school in terms of their mental perceptions of the concept of teacher.

Table 3

Examination of negative perceptions towards school in terms of teacher metaphors

School	f	%	Teacher
Torture	1	0.6	Tree
Compulsorily Visited Place	2	1.2	Torch, Who Has To Come
Suffering	1	0.6	Father
Hell	1	0.6	Annoying
Prison	8	5.1	Commander, Guardian(3), Time, Craftsman, Mother, Friend
Bottomless Pit	1	0.6	Idol
Animal, Zoo	2	1.2	Idol F(2)
Mouse Trap	1	0.6	Trainer
Four Walls	1	0.6	Control Panel
Time Loss	1	0.6	Enemy
Prison Camp	1	0.6	Jewellery Box
Pessimistic Atmosphere	1	0.6	Authority
Tension	1	0.6	Family
Cage	1	0.6	Mother
Horror Movie	1	0.6	Lighthouse
A Monotonous Place	1	0.6	Conceited
Nightmare	1	0.6	Who Makes Dreams Come True
Orphanage	1	0.6	Compulsory Server
Concrete	1	0.6	Guide
Trouble-Some Place	1	0.6	Home For Knowledge
Out Of Life	1	0.6	Artist
Total	**30**	**%19.4**	**9 Negatives**

According to table 3, 20 % of the candidate teachers (f=31) perceive the school negatively. 21 candidate teachers who perceive the school negatively perceive the concept of teacher positively while 9 candidate teachers perceive both the concept of school and teacher negatively with the following metaphors: Compulsory server, authority, conceited, enemy, annoying, guardian (3), who has to come. As a result, it is understood that candidate teachers' perceptions of the concept of school is more negative than their perceptions of the concept of teacher.

Discussion, Conclusion & Implementation

Candidate teachers' mental perception about the concepts of school and teacher is generally positive. But in terms of candidate teachers' negative points of view, it is obvious that their negative perception about school is more. Negativities towards school stem from the structure of the school and the lack of a free atmosphere at schools. Some of the candidate teachers who perceive the school negatively perceive the teacher as an idol, guide, family, pathfinder and a person who loves. Just one of the 11 participants who evaluated the concept of teacher negatively perceives the school positively (a place which trains the unemployed). It can be said that the negative perceptions towards the concept of teacher stem from the negative behaviours of the teachers.

Results of the study indicate that candidate teachers' perceptions about school and teacher are generally positive in a way supporting the relevant literature. In this study, negative perceptions about the concepts of school and teacher are touched upon. For, candidate

teachers who will educate posterity shouldn't have negative perceptions towards school and teacher. Reasons of the negative perceptions towards school and teacher must be examined profoundly and exterminated.

References

Baker, P. J. (1991). Mindful engagement: metaphorsfor school improvoment. *TheEducation Digest*, 32-35.

Bredeson, P. (1988). Perspectives on schools: Metaphorsandmanagement in education. *Journal of Educational Administration*, (26)3, 293-310.

Bromme, R. & Stahl, E. (1999). Spatial metaphors and writing hypertexts: Study within schools. *European Journal of Psychology of Education*(14) 2, 267-281.

Botha, E. (2009). Why metaphor matters in education. *South African Journal of Education*, 29, 431-444.

Cerit, Y. (2006). School metaphors: theviews of the students, teachers and administors. *Eğitim Bilimleri:Teori ve Uygulama*, 6(3), 3-13.

Doğan D. (2014). Öğretmen adaylarının perspektifinden okul kavramının metaforlarla analizi. *Journal of Theoretical Educational Science*, 7(3), 361-382

Eaglestone, R. (2009). *Metaphors and Figures of Speech* (Volume 1). Canada: Taylor&Francis.

Güven, S.& Güven, B. (2009). İlköğretim öğrencilerinin sosyal bilgiler dersinde metafor oluşturma becerilerine ilişkin nicel bir araştırma. *Kastamonu Eğitim Dergisi*. (17) 2, 503-512.

Kalyoncu, R. (2012). Görsel Sanatlar Öğretmeni Adaylarının "Öğretmenlik" Kavramına İlişkin Metaforları. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *9*(20).

Morgan, G. (1980). Paradigms, metaphors, and puzzle solving in organizational analysis. *Administrative Science Quarterly*, (25)4. 605-622.

Ocak, G.& Gündüz, M. (2006). Eğitim fakültelerini kazanan öğretmen adaylarının öğretmenlik mesleğine giriş dersini almadan önce ve aldıktan sonra öğretmenlik mesleği hakkındaki metaforlarının karşılaştırılması. *Sosyal Bilimler Dergisi*, 293-310.

Oflaz, G. (2011). *İlköğretim öğrencilerinin "matematik" ve "matematik öğretmeni" kavramlarına ilişkin metaforik algıları.* Ankara: Siyasal Kitapevi.

Özan, M. B. & Demir, C. (2011). Farklı okul türüne göre okul kültürü metaforuna ilişkin algı düzeyleri. *Fırat Üniversitesi Sosyal Bilimler Dergisi.* (21)2. 106-126.

Özdemir, M. (2012). Lise öğrencilerinin metaforik okul algılarının çeşitli değişkenler açısından incelenmesi. *Eğitim ve Bilim*. (37) 113, 213-224.

Radman, Z. (1997). *Metaphors: Figures of theminds.* Netherlands: KluwerAkademic.

Saban, A. (2008). Okula ilişkin metaforlar. *Kuram ve Uygulamada Eğitim Yönetimi*,(55)459-496.

Thomas, E. &Magilvy, J. K. (2011). Scientific inquiry qualitative rigoror research validity in qualitative research. *Journal forSpecialists in PediatricNursing*. (16)2 , 151-155.

Tuncay, N. & Özçınar, Z. (2009). Distance education students' "metaphors". *Procedia Social and Behavioral Sciences*. (1)1, 1883-2888.

A comparative analysis of Biology teacher education programs in Turkey and Canada

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Abstract

The purpose of this research, Turkey and Canada in a biology teacher is to reveal similar and different aspects of the training program. Document analysis which in qualitative research method was used in the study. Biology Curriculums were analyzed in a comparative manner taking into account objectives, content, teaching- learning process, measurement and evaluation steps. As a result of the study, Turkey and Canada biology teachers education programs the two countries is given in the context of higher education has determined that in Turkey; Bachelor of Science in education 4 years, bachelor's degree in math education taught in Canada for a period of 5 years, which have been identified. But the class where the training course, training duration and course credits are not similarities. Also after the undergraduate degree in Canada before the start of the teaching profession and teachers 'teaching certificate' must take. In Turkey for graduate student teachers 'teaching certificate' is not required. The findings obtained in the framework of transnational education, trying to give a new perspective to this work is given in accordance with recommendations.

Keywords: Teacher training, Canada, Turkey, comparative education, biology teacher.

Introduction

It is known that globalization is the most widespread value in the world in 21st century (Erkan, 2014). The only way to get adapted to the fast globalization which is happening through scientific and technologic developments is education (TTKB, 2006; Yalçın, Aslan & Usta, 2012). Education is an action that must be in every area of life to make people happy and peaceful. So, the basic aim of education systems is making individuals well adapted to their society and the modern world and equip them with the skills that the modern age requires (Çelikten, Şanal & Yeni, 2005). At this point in spite of current technological changes, it is understood how big is teachers` roles (Abazaoğlu, 2014). The role that teachers play for society`s and culture`s continuation makes this job alternativeless among the other jobs. Among the most ancient jobs or humankind, teaching is the first. Because the responsibility of educating future generations is given to the teachers (Erkan, 2014).

The fact that education systems cannot produce services above the quality of human resources makes teacher training a key process (Ataç, 2003). Therefore, teachers need to have knowledge and skills such as knowledge accumulation, planning process, knowledge of the specialization field, advanced linguistic skills, closeness to technological developments and ability to use technological devices, knowing and guiding students at various levels and personalities, and effective communication (Gürlen & Demirel, 2010). Because of this, teacher education is among the most important factors that affects teachers` and so students`success. Hence, good teaching of the teachers means good teaching of next generations that teachers will educate (Öztürk & Uçar, 2010). Therefore, the quality and education of teachers, who carry out the education politics of governments and affect the politics with the way they carry out these politics, is gaining importance (Gürkan, 1987; Özoğlu, Gür & Altunoğlu, 2013). It is needed to make permanent politics in education to train qualified teachers (Kalkanlı, 2009). The job of teaching and training teachers is a process that almost every country give importance and must do it (Abazoğlu, 2014).

All of the countries organise their education systems, teacher training politics and institutions in the way that will satisfy the needs and expectations of teachers who will train 21st century people (Kalkanlı, 2009). So, the quality of education faculties in education system is important for the quality of education service (Alkan, 2012). Countries` qualities and models of training teachers different from each other. The research of education systems of countries in different angles gives countries the possibility of knowing and evaluating their education systems better (Ergun, 2015; Gültekin, 2007; Kalkanlı, 2009). Comparative education includes researching of different countries` education systems and determining the similarities and differences and searching for ways of solving similar problems, make the educators gain different points of view through analyzing the countries` facts of education systems, research of factors that will be base in determining education systems (Bayram, 2010). To this end, countries strive to establish the best teacher training systems. As such, in the assessment of the education of a country, comparisons with other countries are quite important.

Purpose

Based on this, the aim of this study is to determine and set forth the similar and different aspects of biology teacher training programs in Turkey and Canada.

Problem Statement

Turkey and Canada being implemented What are the similarities and differences of teacher education program being implemented?

Sub problems

1. How are the placement conditions and required program durations for the education faculties in Turkey and in Canada?

2. What is the comparison of the courses of biology teacher training programs in Turkey and Canada?

3. What is the comparison of the Practicum and Teaching Practice courses of biology teacher training programs in Turkey and Canada?

4. What are the conditions to be appointed as biology teachers in Turkey and Canada?

Method

In this study document analysis method, as one of the qualitative research data collection methods, is used. Document analysis refers to the analysis of informative print materials about the phenomenon and phenomena that the research is focused upon (Yıldırım& Şimşek, 2000).

Instrument and Data Analysis

In this study, the necessary data have been obtained through analyses of the current teacher training programs. In this context, as the data collection instruments, Dicle University Biology Teaching Department's 2015-2016 academic year program curriculum and the program curriculum of Vancouver Island University in British Columbia State have been analyzed. In this research, Turkey and Canada teacher training programs are comparatively researched and analyzed in terms of targets, content and teaching-learning process similarities and differences. Findings are interpreted comparatively and research conclusion is made. Biology teaching programs are comparatively researched; targets, content and teaching-learning process and evaluation processes are taken into consideration.

Results

Results belong to the problem

Those who want to become biology teachers in Turkey have to succeed in the national tests administered by the Student Selection and Placement Center (ÖSYM). These exams are Test of Transfer into Higher Education (YGS) and Undergraduate Placement Test (LYS) and happen once in a year. In Canada, individuals who want to become biology teachers are not subjected to national-level tests. Admission to Canada Vancouver Island University biology teaching program is carried out by the university. In Canada, a student who wants to enter in Vancouver Island University Biology Teaching licence program applies to the university with his/ her high school diploma. After, the students who are successful in writing exam has the right to an interview. If the student is successful, he/she has the right to enter the university. In Turkey, education in biology teaching programs takes 4 years whereas in Canada it takes 5 years. In Turkey, education faculties are 4 years in all universities. In Canada, teacher training period is up to universities. However, in Canada Biology teaching licence programs are 5 years.

Results belong to the problem

Table 1

Turkey and Canada Undergraduate Courses Biology Teaching Names

Undergraduate Courses Biology Teaching in Turkey	**Undergraduate Courses Biology Teaching in Canada**
1. Year	**1. Year**
General Biology I- II	Introductry Zoology
General Biology laboratory I- II	Introductıon to Cellular and Moleculer Bıology
Ataturk history principles and reforms I- II	Mathematics I - II
Mathematics I - II	Chemistry Fundamentals I - II
Chemistry Fundamentals I	Physics for the life Science I-II
Foreign language I- II	English
Turkish language I- II	
Introduction to Educational Science	
Developmental Psychology	
Physics	
2. Year	**2. Year**
Cytology	Biometrics
Cytology Laboratory	Principles of Cell Biology
Histology	Principles of Biochemistry- I
Histology Laboratory	Ecology
Introduction to Computers	Botany
Computers laboratory	Genetics
Organic Chemistry	Organic Chemistry I-II
Plant Morphology and Anatomy	Microbiology- I
Plant Morphology and Anatomy laboratory	
Biostatistics	
Curriculum Development and Instruction	
Special Teaching Methods I	
Microbiology I- II	
Microbiology laboratory I-II	
Systematic Botany	
Systematic Botany Laboratory	
Elective I and II	
3. Year	**3. Year**
Animal Pysiology	Animal Pysiology
Animal Pysiology laboratory	Intertebrate Zoology
Biochemistry I- II	Bacterial Genetics

Plant Physiology	Microbial Ecology
Plant Physiology laboratory	Advanced Biochemistry
Ecology	Aquatic Ecosystems
History of science	Issues in Aboriginal Education
Turkish Education System and School Management	Principles of Teaching and Learning I- II
Instructional technology and material design	Human Development: Child Development and Education
Special Teaching Methods II	Population and Communıty Bıology
Learning and teaching theories and approaches	
Elective I and II	
4. Year	**4. Year**
Genetics I- II	Immunology
Human anatomy	Moleculer Genetics
Moleculer Biology	Pathogenic Microbiology
Evolutıon	Evolutıon
Assessment and Evaluation	Developmental Biology
Guidance	Current Topıcs in Biology
Elective I and II (based off)	Applied Microbiology
Research Project in Field Education	Principles of Teaching and Learning III- IV
School Experience	Curriculum and Instruction: Mathematics and Language Arts
Class Management	Instructional Design: Application of Educational Technology)
Teaching Practice	Field Experience I- II
Elective I and II	
5. Year	**5. Year**
	Principles of Teaching and Learning V- VI
	Foundations of Education in British Columbia
	Social Justice Issues in Education
	Curriculum and Instruction: Mathematics
	Field Experience III- IV
	Special Educational Needs in the Classroom)

Table 1 when the courses offered in Dicle University and Vancouver Island University biology teaching undergraduate programs are compared, biology major, professional development and general culture courses are seen to be available. It has been found that some courses are different and similar courses are offered in different semesters. When the biology teaching program of Dicle University is analyzed, it is clear that starting from the 1st year throughout the 4th year, both biology major courses and the teacher education courses are conducted together. In the Vancouver Island University biology teaching program, for the first 2 years teacher training courses do not exist and the last year is reserved only for teacher training courses.

As their common major courses, Dicle University and Vancouver Island University biology teaching undergraduate programs have: Mathematics I- II, English, Physics, Chemistry I, Organic Chemistry, Microbiology I, Biochemistry Principles I (Biochemistry), Microbiology Lab I (Applied Microbiology), Evolution, Ecology, Genetics, Botany (Systematic Botany), Animal Physiology.

In Dicle University biology teaching licence level in the 2nd year Microbiology Laboratory, 3rd year Biochemistry and Ecology lectures are taken but in Vancouver University Ecology, Genetics and Biochemistry Principles are taken in 2nd year, Applied Microbiology lessons are taken in 4th year. Consequently, in Canada field lectures Ecology, Genetics and Biochemistry

Principles lectures are given before they are given in Turkey; and Applied Microbiology lessons are given before they given in Canada.

Common courses are found to be Instructional Technology and Material Design, Principles of Learning and Teaching, Major Area Research Project, Practicum, Teaching Practice, Developmental Psychology, Assessment and Evaluation, Program Development and Instruction, and Educational Foundations of Countries. Other major courses offered in the Vancouver Island University biology teaching undergraduate program are: Curriculum and Instruction: Second language Acquisition, Curriculum and Instruction: mathematics – language arts, Problems in Aborigine Education, Social Justice Problems and Special Education Classroom Needs.

Results belong to the problem

In teaching training, apprenticeship is obligatory in both countries. In this lesson, teacher candidates are bound to give lessons in high schools for one da yor 2 days part time. Teacher cancicates who are Dicle University biology teaching program go to some schools to make observations for “School Experience” lesson. Students have to work in different levels in schools and participate actively in teaching of all lessons in education program, observe school direction and communicate with the students. In Dicle University Biology Teaching 4th year 2nd term, teacher candidates have to take “Teaching Application” lesson. Teacher candidates` understanding of their occupation and developments in gaining the skills that form teachers are evaluated by the experienced application teachers and university lecturers.

The Practicum course in Vancouver Island University biology teaching program continues for 4 semesters. In the Practicum I- II and III courses, the teacher candidates have a regular teaching experience by going to schools for 4 weeks. As part of the Practicum IV, teacher candidates gain experience as practicing trainees at schools by teaching for 8 weeks.

In Canada, school experience is in school and a pre-service education program that is carried on one teacher focused and distributed through the program, and all of the students in biology faculty have to take this course.

Results belong to the problem

In Turkey, graduates of biology teaching undergraduate programs have to succeed at the Public Personnel Selection Examination (KPSS) in order to be employed. Those teacher candidates who succeed at the KPSS exam are centrally appointed to their teaching posts. Candidates who have been so appointed remain in the status of trainee/candidate teacher and have to be supervised under an experienced teacher for a certain period of time. The candidate teacher status in Turkey lasts for a minimum of 1 and a maximum of 2 years. Those trainees who successfully pass the candidate teacher exam continue to perform their duties with the title of “teacher.” In Canada, there is no mandatory central exam before biology teacher candidates can begin their jobs. However, to be able to work as a teacher, they must have a teaching certificate. This certificate is formally issued by the state education departments. Teacher candidates are subjected to one or two year long trial period before they can have this certificate. Successful teacher candidates earn their teaching licenses (certificate) and begin teaching in their respective positions.

Discussion, Conclusion & Implementation

Candidates who want to become biology teacher in Turkey have to succeed at the national exams administered by the ÖSYM, and candidates who want to be admitted in the Canada Vancouver Island University biology teaching program must succeed at the interview conducted by the university. In Turkey, biology teaching takes 4 years, while in Vancouver Island University it is 5 years. It is naturally expected that there will be some differences between a federal republic where authority is generally given to individual states and a republic where authority is centralized (Taştan, 2007). Due to Canada's federal structure, each state has its own educational policies. In the Turkish education system, on the other hand, there is a central organization and it covers the whole country.

Furthermore, as a result of the study, biology teaching undergraduate programs of both countries have mostly similar courses, but it is remarkable that in Vancouver Island University, there are state-specific major courses as well.

New teacher training approach`s biggest recency is, the thought of teaching skills cannot be learned without application and thus, addition of application lessons to the program. More privately, in pre-service training process, teacher candidates` more comprehensive knowing the schools they will work in, and to become familiar with these environments. School Experience I-II and Teaching Application lessons are main lessons. School experience lessons are aimed at bringing to the demanded level teacher candidates` readiness. General aims of these lessons are knowing the structure and the daily life of the school, studying the education environment, observing the experienced teachers during the lesson, developing and applying excercises that they will be able to display behaviours learned in faculty, working with students individually and in little groups, and gaining short term teaching experience (Yiğit, 2005).

Vancouver Island University biology teaching program offers a Practicum course that deepens and progressively advances throughout 4 semesters, while in the Dicle University biology teaching program, observation and practicum courses begin in the 4th year and are taught only for two semesters. Consequently, the time allotted by Canada, as a developed country, for practice in teacher education helps with increasing the quality in teacher training (Yiğit, 2005).

There is a close realationship between developed countries` development level and the importance they give to teacher training. Canada is also a developed country. In such countries, this issue is always a politically current issue and never loses its popularity. At this point, perhaps the biggest duty is of institutions that train teachers (Günay, 2011).

In Turkey, the students finished biology teaching licence programs have to enter to Public Personnel Selecting Exam (KPSS) and be successful. Successful teacher candidates are appointed centrally. In Canada, biology teacher candidates do not enter such an exam that they have to be successful. But, they must have a teaching experience certificate to be able to work as a teacher. This certificate is given by state education departments. The teacher candidates are kept course to a trial period for 1 year or 2 years to get this certificate. Successful teacher candidates gain the right of teaching licence (certificate) and they start to the profession.

In the light of the results of this study, these following suggestions can be made:

- In Turkey, students can be screened through personality etc. tests before their admission into biology teaching undergraduate programs.

- In Turkey, the length of Practicum and Teaching Practice courses in the biology teacher training programs can be increased.
- The Practicum course can be made mandatory in the biology teacher training programs starting from the 1st year.
- Developed countries` model education applications can be researched for Turkey`s ability to compete in international area.

References

Abazaoğlu, İ. (2014). Dünyada öğretmen yetiştirme programları ve öğretmenlere yönelik mesleki gelişim uygulamaları. *Turkish Studies- International Periodical For The Languages, Literature and History of Turkish or Turkic, 9/5 Spring 2014, pp. 1-46, Ankara-Turkey*.

Alkan, S. (2012). *AB ülkelerinde öğretmen yetiştirme programlarıyla Türkiye'deki öğretmen yetiştirme programının karşılaştırılması ve Türkiye için bir model önerisi.* Yüksek Lisans Tezi, Mustafa Kemal Üniversitesi , Hatay.

Aras,S. & Sözen, S. (2012). *Türkiye, Finlandiya ve Güney Kore' de öğretmen yetiştirme programlarının incelenmesi.* X.Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Niğde.

Ataç, E. (2003). 21. yüzyılda öğretmen eğitimi: Türkiye' de öğretmen eğitiminin değerlendirilmesi. *Anadolu Üniversitesi Eğitim Fakültesi Dergisi, 13*(2), Eskişehir.

Bayram, D. (2010). *Türkiye, ABD, Japonya, İngiltere ve Avustralya'da Fen ve Fizik Öğretmenlerine Yönelik Mesleki Gelişim Programlarının Karşılaştırılması,* Yayımlanmamış Doktora Tezi, Ankara Üniversitesi, Ankara.

CMEC (2008b). The development of education reports for Canada. http://www.ibe.unesco.org. retrieved may 1, 2015.

CMEC(2010). Teacher education and development study in mathemetics 2008. http://www.cmec.ca. retrieved may 5, 2015.

Çelikten, M., Şanal, M. & Yeni, Ö. (2005). Öğretmenlik mesleği ve özellikleri. *Sosyal Bilimler Enstitüsü Dergisi, 19*(2), 207-237.

Ergun, M. (2015). İsviçre ve Türkiye Sınıf öğretmeni yetiştirme programlarının karşılaştırılması. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi (KEFAD), 16*(1), 35-54.

Erkan, S. S. Ş. (2014). Türkiye, Fransa, İtalya ve İspanya öğretmen yetiştirme sistemleri karşılaştırılması. *Uluslararası Eğitim Bilimleri Dergisi / The Journal of Internatıonal Educatıon Science*, *1*(1), 1-9.

Gültekin, M. (2007). Dünyada ve Türkiye' de ilköğretimdeki yönelimler. *Anadolu University Journal of Social Sciences, 7*(2), 477-502.

Günay, D. (2011). Türk yükseköğretiminin yeniden yapılandırılması bağlamında sorunlar, eğilimler, ilkeler ve öneriler – I. *Yükseköğretim ve Bilim Dergisi, 1*(3), 113-121.

Gürlen, E. & Demirel, Ö. (2010). Avrupa Birliği ve Türkiye'deki öğretmen yeterliklerin karşılaştırmalı incelenmesi (in Turkish). *Proceedings of International Conference on Teacher Training Policies and Problems II*, 396-401.

Gürkan, T. (1987). Ortaöğretim kurumlarında öğretime ilişkin sorunlar. *Eğitim Bilimleri Fakültesi Dergisi, 20*(1-2), 305-322.

Kalkanlı, P. (2009). *Türkiye ile Fransa yükseköğretim sistemlerinin eğitim fakülteleri ve üniversite öğretmen yetiştirme enstitüleri (Mesleki Eğitim Dışı) bağlamında karşılaştırmalı olarak incelenmesi.* Sosyal Bilimler Enstitüsü Eğitim Yönetimi ve Denetimi Yüksek Lisans Programı, İstanbul.

Nevşehir Hacı Bektaşi Üniversitesi (2014- 2015). Lisans programları okul deneyimi ve öğretmenlik uygulaması dersleri uygulama yönergesi.

OECD/UNESCO (2003). Programme for internetionel student assesment and non-OECD countries. http://www.oecd.org

OECD. (2012). Education at a Glance 2012: OECD Indicators. OECD Publishing. doi:10.1787/eag-2012-en

Özoğlu, M., Gür, B. S., & Altunoğlu, A. (2013). Türkiye ve Dünyada Öğretmenlik. Retorik ve pratik. *Eğitimciler Birliği Sendikası.* Ankara. Retrieved from http://www.egitimbirsen.org.tr/ebs/arastirma/ebsam21turkiyevedunyadaogretmenlik.pdf

Öztürk, D. & Uçar, S. (2010). TIMSS verileri kullanılarak Tayvan ve Türkiye'deki 8. sınıf öğrencilerinin fen başarısına etki eden faktörlerin belirlenmesi ve karşılaştırılması. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 19*(3), 241-256.

Taştan, M. (2007). *Karşılaştırmalı eğitim sistemleri.* Ankara:Pegem A Yayıncılık.

TTKB (2006). *İlköğretim fen ve teknoloji dersi (6,7,8. sınıf) Öğretim programı.*

Unesco International Yearbook Of Education. (1980). International Bureau of Education in Canada.

Yalçın, M., Aslan, S. & Usta, E. (2012). Analysis of PISA 2009 exam according to some variables. *Mevlana International Journal of Education (MIJE), 2*(1), 64-71.

Yıldırım, A. & Şimşek, H. (2000). *Sosyal bilimlerde nitel araştırma yöntemleri* (Gözden Geçirilmiş 2. Baskı). Ankara: Seçkin Yayıncılık.

Yiğit, N. (2005). Etkili öğretmen yetiştirme açısından okul deneyimi derslerinin değerlendirilmesi. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi, 25(1) ,91-103.*

YÖK. (2006). *Eğitim Fakültelerinde Uygulanacak Yeni Programlar Hakkında Açıklama.* Retrieved May 1, 2015 from http://www.yok.gov.tr

URL. 1. https://www2.viu.ca/calendar/courses/ED.ASPX?crs=#EDUC101, retrieved may 5, 2015.

URL. 2. https://www2.viu.ca/calendar/Education/BachelorEducation.asp#prereq, retrieved may 5, 2015.

URL. 3. http://www.dicle.edu.tr/ziya-gokalp-egitim-fakultesi_-orta-ogretim-fen-ve-matematik-alanlar-bolumu-biyoloji-egitimi, retrieved may 5, 2015.

URL. 4. http://www.oct.ca/becoming-a-teacher/requirements, retrieved may 5, 2015.

URL. 5. http://www.oct.ca/becoming-a-teacher/requirements/teacher-education programproviders. retrieved may 5, 2015.

URL. 6. http://www.kanadainfo.com, retrieved may 1, 2015.

A comparative analysis of Turkish and Singaporean science teacher education programs

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Abstract

This study aims to find out the similarities and differences between the Science Teacher Education Programs in Turkey and Singapore. In this study, qualitative document analysis method within the framework of horizontal approach, widely utilized in comparative education research, was used. Turkey and Singapore Science Teacher Education Programs were analyzed by comparing variables such as student admission conditions, program objectives, program courses, and teaching practicum. The findings indicated that Turkey and Singapore differ in their student admissions to their Science Teacher Education Programs. However, no differences were identified in the objectives of these teacher education programs. It was concluded that curricula of both countries had similar and different courses. While the subject field courses had higher credit in Turkey, the course credits of professional teaching knowledge were higher in Singapore. Both countries' science teacher education programs have teaching practicum course, however, this course is given in the last year of the program in Turkey, while in Singapore it begins in the first year and continues until graduation. Furthermore, math, social studies and foreign languages were found to be given high priority in Singapore.

Keywords: Science teacher, teacher education, comparative education, Turkey, Singapore.

Introduction

In today's world of unprecedented pace of change, education is undoubtedly the most important factor for societies to maintain their own cultures and to become stronger. Education is planning the future (Yıldırım & Vural, 2014), and its three basic premises are teacher, student and education programs (Oğuzkan, 1981). Of these three, the teacher stands out as a more significant premise than the other two, as teachers are the ones to implement the education programs and guide their students (Çankaya, 2007).

Learners' achievement of the desired objectives, their becoming socially-beneficial individuals for the good of their societies, and growing with independent thinking make teacher competencies a pivotal point in the education process (Aras & Sözen, 2012). According to Çelikten, Şanal and Yeni (2005: 207-237), teachers must have various competencies such as being open-minded and objective towards their students, considering their expectations and needs, researching educational problems through scientific methods, considering individual differences, being open to innovations and new developments, understanding and interpreting social developments, and closely following the developments in ICT. Thus, achieving these objectives in the education system requires the improvement of the qualities of education staff and teachers (Abazoğlu, 2014), which necessitates high-quality teacher education programs. To create such quality programs, Higher Education Council (YÖK) launched a comprehensive re-structuring process about a decade ago. Following this comprehensive restructuring, the teacher education programs of education faculties were updated and re-organized in the 2006–2007 academic year (YÖK, 2007). In Singapore, science teacher education is offered only by Nanyang Technical University National Education Institute. Our review of the relevant literature reveals that teacher education programs have been essentially compared with their counterparts in developed countries (Demirel, 2000; Baskan, Aydın & Maden, 2006; Delibaş & Babadoğan, 2009; Ad & Er, 2011; Küçükoğlu & Kızıltaş, 2012; Erbilgin & Boz, 2013). However, no research has been identified comparing the

Singaporean science teacher education programs and Turkish science teacher education programs.

Aim

The aim of this study is to find out the similarities and differences between the science teacher education programs in Turkey and Singapore.

Sub problems

1. How is the student selection for the science teacher-training institutions conducted in Turkey and Singapore?
2. What are the objectives of science teacher education programs in Turkey and Singapore?
3. What courses are included in the science teacher education program curricula in Turkey and Singapore?
4. What is the school experience/teaching practicum status of the preservice science teachers in Turkey and Singapore?

Method

This study employs the horizontal approach, one of the four major approaches used in comparative education research. The dimensions in the horizontal approach education system are analyzed one by one, and by putting the variables of that period together, the differences are aimed to be determined (Demirel, 2000). In this study the Turkey and Singapore science teacher training systems were analyzed in the light of the research questions to reveal the similarities and differences between them. The document analysis method, which is a qualitative data collection method, was used to obtain the data for the study. Document analysis involves the analysis of print materials that include information about the phenomena that a study focuses on (Yıldırım & Şimşek, 2000).

Data Collection and Analysis

The analyzed documents for this study were published in 2015 by YÖK and by Nanyang Technology University Website. The study aims to comparatively analyze the Turkish and Singaporean science teacher education programs and find out the similarities and divergences between them regarding their student admission, program objectives, courses, and school experience/practicum.

Results

Results on the Sub Problem

The requirements in Turkey for admission to a science teacher education program are: having a high school diploma, achieving a score above the specified threshold on the Test of Transfer into Higher Education (YGS) administered by the Student Selection and Placement Center (ÖSYM), and scoring above 180 on the Undergraduate Placement Test (LYS) (ÖSYM, 2015). In Singapore, students who wish to enroll in a science teacher education program have to submit an undergraduate advanced general education (English and math proficiency required) certificate of completion, an internationally-accepted diploma or Polytechnic Diploma, a second language certificate (Those selecting advanced Chinese/Malay/Tamil as their first language must hold a minimum proficiency score of D7 on the GCE 'O' test. If Chinese/Malay/Tamil is their second language, must hold a minimum proficiency score of D7 on the GCE 'A' test.), and must prove their specialized academic subject knowledge. Students meeting all of these conditions can apply to the science teacher education program of

Nanyang Technology University for admission. The applicants must pass the compliance tests. The compliance tests include a personality test, and an interest inventory, followed by an interview (NIE,2015).

Results on the Sub problem

Turkey and Singapore science teacher education program objectives are notably similar. The main objective of both countries' science teacher education undergraduate programs is training teachers with superior knowledge and skills in both education and in the related fields, and ensure the graduates to have a good academic standing in education (YÖK, 2007; NIE, 2015).

Results on the Sub problem

Table 1

Courses in Science Teacher Education Programs in Turkey and Singapore

Turkey	**Singapore**
General Mathematics I-II	Group Efforts in In-service Learning
History of Atatürk's Principles and Revolutions I-II	Learning and Performance Assessment
Turkish: Written Expression Skills	Science Subjects
Turkish: Spoken Expression Skills	Academic Speaking Skills
Introduction to Educational Sciences	School Experience
Educational Psychology	
2nd YEAR	**2nd YEAR**
General Biology I-II	Social Nature of Learning and Teaching
General Biology Lab I-II	Character and Citizenship Education
General Physics III	Science Subjects (Physics, Chemistry, Biology)
General Physics Lab III	Art: Artistic Processes I
Introduction to Modern Physics	English: Teaching Reading and Writing I
General Chemistry III (Analytical Chemistry)	Mathematics (Program Studies)
General Chemistry IV (Organic Chemistry)	Music I
Computer I-II	Mathematics
Foreign Language I-II	Science (Curriculum and Pedagogy)
Teaching Principles and Methods	Social Studies: Teaching Social Studies I
Science Technology Program and Planning	Identity and Society
Elective I	Communicative Skills for Teachers
	Teaching Assistantship
3rd YEAR	**3rd YEAR**
Human Anatomy and Physiology	Teaching and Management in Elementary Education
Genetics and Biotechnology	Science Subjects (Physics, Chemistry, Biology)
Special Issues in Physics	Art: Artistic Processes II
Nature and History of Science	English: Teaching Reading and Writing II
Special Issues in Chemistry	Mathematics: Learning and Teaching Elementary Mathematics I-II
Environment Science	Music: Music Curriculum II
Statistics	Sciences: Basic Sciences Evaluation and Resource Management
Geology	Social Studies: Teaching Social Studies II
Science Education Lab Practices I-II	English: Discovering Language in Texts
History of Turkish Education	Mathematics: Curriculum Studies
Community Service Practice	Biology Topics in Basic Science Teaching
Scientific Research Methods	Social Studies: Challenges and Solutions in Singapore

Special Teaching Methods I	Multicultural Studies: Appreciation and Evaluation of Differences
Instructional Technologies and Material Design	Teaching Practicum
Assessment and Evaluation	
4th YEAR	**4th YEAR**
Special Issues in Biology	Professional Practice and Research II
Astronomy	Science Subjects (Physics, Chemistry, Biology)
Evolution	Art
Elective I	English: Teaching Verbal Communication
Special Teaching Methods II	English: Language Teaching Skills
Elective II	Teaching Elementary Mathematics III-IV
Special Education	Music: Music Curriculum III
School Experience	Sciences: Design for Sciences and Innovations in Practice
Elective II	Social Studies: Methodological Diversity
Teaching Practicum	English: New Trends in Language Education
Counseling	Mathematics: Advanced Mathematics Topics
Turkish Education System and School Management	Music: General Musicianship III
Classroom Management	Social Studies: Asian Civilizations, Origins and Heritage

The science teacher education program in Turkey comprises three curriculum components: subject knowledge courses, general culture, and professional teaching knowledge courses. Subject knowledge courses are made up of 74 hours of theoretical and 22 hours of practice that total 85 credits. General culture courses constitute 27 hours of theoretical and 6 hours of practice that total 30 credits. Professional teaching knowledge courses are composed of 31 theoretical and 14 hours of practice that make a total of 38 credits.

The courses in Singapore are divided into seven groups as Education Studies, Academic Subject, Curriculum Studies, Subject Knowledge, Basic Course, Language Development and Academic Speaking Skills, and Practice courses. These add up to a total of 144 credits, of which 14 is Education Studies, Academic Subject is 27, Curriculum Studies is 63, Subject Knowledge is 32, Basic Course is 2, Language Development and Academic Speaking Skills is 5, and Practice is 21 credits.

Table 1 shows that in the science teacher education program of Turkey, subject knowledge courses dominate the curriculum in the first two years, and the majority of the courses in the last two years are related to general culture and professional teaching knowledge, and also the ratio of subject knowledge courses is quite high. On the other hand, it is clear that in Singapore the subject knowledge courses and the general culture and professional teaching knowledge courses are taught together throughout the four years, and also the professional teaching knowledge courses have a higher share in the program curriculum. Furthermore, more emphasis seems to be placed on mathematics, foreign languages and social studies in the Singaporean science teacher education curriculum.

Results on the Sub problem

In the science teacher education programs in Turkey, the school experience and teaching practicum courses are semesterly delivered in the 4th year. As part of the school experience course, preservice teachers go to a school and observe their cooperating teachers, students and school management throughout one semester. As part of the teaching practicum course, preservice teachers gain teaching experience by going to their assigned schools throughout one semester for a full day or two half days (YÖK, 2007).

To develop their teaching competencies in various levels and subjects, the preservice teachers in Singapore are sent to schools for 2, 5, and 10 week periods. The school experience

course in Singapore is two weeks, of which one week is spent at an elementary school and another week spent at a secondary school. The aim of the school experience course is enabling preservice teachers to observe real-time instruction at elementary and secondary schools. Teaching assistantship course is 5-week long and it aims to allow them to gain impressions about a teacher's roles and responsibilities and to give them an opportunity to observe how teachers teach collaboratively. Besides, they are also provided hands-on experiences in lesson planning, resource preparation, managing students and helping with some instructional tasks. The aim of the 5-week long "Teaching Practicum I" course is to help preservice teachers to begin teaching independently. The candidate teachers learn how to prepare lesson plans and materials, and manage students independently. They can observe and consult their cooperating (mentor) teachers. 10-week long "Teaching Practicum II" course gives prospective teachers a more holistic school experience including the discovery of some other aspects of a teacher's life, like management (NIE, 2015).

Discussion, Conclusion & Implementation

In this study, Science Teacher Education Programs in Turkey and Singapore were comparatively analyzed by student selection, curriculum and practicum themes.

In Turkey, while the music, painting and physical education departments admit students on the basis of their YGS test scores and special talent tests, other education departments admit students according to their YGS test scores only. This is a norm-referenced test that is not administered to determine a candidate's basic teacher qualities, but to rank and eliminate them (Mete, 2013). Differing from Turkey, however, in Singapore the student admission system uses interviews and personality tests, which allows to increase the likelihood of selecting candidates who are cognitively and affectively more suitable for the teaching profession (Erbilgin & Boz, 2013, Mete, 2013). As such, determining the essential qualifications for teacher candidates seems much more urgent than identifying the competencies to equip them with. The graduate quality of a program depends on the quality of the candidates that are admitted to the program (Şişman, 2009). Therefore, such candidate selection has to be conducted meticulously, not haphazardly (Ergun & Ersoy, 2014).

The objective of the science teacher education programs in Turkey resembles that of the Singapore science teacher education programs, which is training creative, academically knowledgeable and skilled teachers who embrace modern learning approaches.

As another factor analyzed in this study, the courses in both countries have striking similarities, although subsumed under different titles. For example, both countries have education psychology and teaching practicum courses in their curricula. The courses in Turkey are categorized into three groups as subject knowledge courses, professional teaching knowledge education courses and general culture education courses. Furthermore, subject knowledge is stressed more strongly. On the other hand, in Singapore the courses are classified into seven categories as education studies, academic subject, subject knowledge, curriculum studies, basic course, language development and academic speaking skills and practice, with much emphasis on professional teacher knowledge.

In Turkey, school experience/teaching practicum courses are offered only in the 4th year of the undergraduate study, whereas in Singapore these courses are spread over four years. When the school experience/teaching practicum courses are compared, it can be concluded that these courses are not distributed evenly in Turkey. However, such applied activities in the learning-teaching process operationalize the theoretical knowledge acquired in teacher

education programs (Karadağ & Akkaya, 2013) and such practicum courses are known to be crucial in helping preservice teachers to apply what they have learned.

Based on the findings of this study, the following suggestions can be made:

- ✓ Teaching practicum courses can be taught by spreading them over four years
- ✓ By granting a certain amount of scholarship to teacher candidates who go to practicum schools they can be encouraged to pay more attention to these practicum courses.
- ✓ Speech, rhetoric, dictation and elocution courses can be added to the science teacher education curriculum to improve communicative skills.
- ✓ Subject knowledge courses and professional teaching knowledge courses can be spread over 4 years in a properly balanced way.
- ✓ Increasing the cooperation between teacher training institutions and practicum schools, professional flaws of both mentor teachers and teacher candidates can be repaired.
- ✓ The number of credits for the professional teaching knowledge courses can be increased.

References

Abazoğlu, İ. (2014). Dünyada öğretmen yetiştirme programları ve öğretmenlere yönelik mesleki gelişim uygulamaları. *Turkish Studies: International Periodical For The Languages, Literature And History of Turkish Or Turkic*, *9*(5), 1-46.

Aras, S., & Sözen, S. (2012). *Türkiye, Finlandiya ve Güney Kore'de öğretmen yetiştirme programlarının incelenmesi.* X. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, 1-10.

Atanur Baskan, G., Aydın, A., & Madden, T. (2006). Türkiye'deki öğretmen yetiştirme sistemine karşılaştırmalı bir bakış. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 15*(1), 35-42.

Çankaya, Ş. (2007). *Türk Ve İngiliz eğitim sistemlerinde öğretmen yetiştirme sistemlerinin karşılaştırılması.* Yayınlanmamış Yüksek Lisans Tezi. Yeditepe Üniversitesi, İstanbul.

Çelikten, M., Şanal, M., & Yeni, Y. (2005). Öğretmenlik mesleği ve özellikleri. *Erciyes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 19* (2), 207-237.

Delibaş, H., & Babadoğan, C. (2009). A comparison of Biology teacher education programs in Germany, England and Turkey. *Elementary Education Online, 8* (2), 556-566.

Demirel, Ö. (2000). *Karşılaştırmalı eğitim.* Ankara: Pegem A Yayıncılık.

Erbilgin, E., & Boz, B. *Matematik Öğretmeni Yetiştirme Programlarımızın Finlandiya, Japonya ve Singapur Programları ile Karşılaştırması* A Comparison of Mathematics Teacher Training Programs in Turkey, Finland, Japan, and Singapore.

Ergun, M., & Ersoy, Ö. (2014). Hollanda, Romanya ve Türkiye'deki sınıf öğretmeni yetiştirme sistemlerinin karşılaştırılması. *Kastamonu Eğitim Dergisi, 22*(2), 673-700.

Karadağ, R., & Akkaya, A. (2013). İlk okuma yazma öğretimi dersinde mikro öğretim uygulamalarına ilişkin öğretmen adaylarının görüşleri. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi, 14*(2).

Küçükoğlu, A., & Kızıltaş, E. (2012). A comparison of preschool teacher training programs in the UK, Germany, France, Italy, Russia and Turkey. *Elemantary Education Online, 11*(3), 660-670.

Mete, Y. A. (2013). Güney Kore, Japonya, Yeni Zelanda ve Finlandiya'da öğretmen yetiştirme ve atama politikaları. *Turkish Studies-International Periodical For The Languages, Literature and History of Turkish or Turkic, 8*, 12.

Oğuzkan, T. (1981). *Educational Systems* (2. Baskı). İstanbul: Boğaziçi Üniversitesi.

Şişman, M. (2009). Öğretmen yeterlilikleri: Modern bir söylem ve retorik. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, *10* (3).

Yıldırım, A. & Şimşek, H., 2000. *Sosyal bilimlerde nitel araştirma yöntemleri*, (2. Baskı). Ankara: Seçkin Yayıncılık.
Yıldırım, İ., & Vural, Ö. F. (2014). Türkiye'de öğretmen yetiştirme ve pedagojik formasyon sorunu. *Öğretmen Eğitimi ve Eğitimcileri Dergisi, 3*(1), 73-90.
http://dokuman.osym.gov.tr/pdfdokuman/2015/YGS/2015_OSYS_KILAVUZ.pdf
http://www.nie.edu.sg/files/ote/Handbooks/BABSc_2014-2015.pdf
http://www.yok.gov.tr/web/guest/yayinlarimiz

Validity and reliability work as to the self-efficacy scale towards teaching profession

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Abstract

The purpose of this study is to develop a valid and reliable measurement tool that can measure the self-efficacy perception for the teaching profession. 323 pre-service teachers in total receiving pedagogic formation training participated in the research. As a result of the factor analysis, it was determined that the Cronbach's Alpha reliability coefficient of the whole scale consisting of two factors and 14 items in total being "Field and Professional Knowledge" (10 items) and "Stability and Perseveration Effort" (4 items) is 0,80. Consequently, looking at the values obtained from exploratory factor analyses and reliability analyses, it can be said that the Self-Efficacy Perception for Teaching Profession Scale is a tool that can be used in determining the perceptions of pre-service teachers for the teaching profession.

Keywords: Teaching profession, self-efficacy perception, pre-service teachers.

Introduction

There are many factors that affect human behaviors. The belief one has in being able to execute a specific task successfully, which is defined as self-efficacy perception or belief in the literature, is one of the most important determinants for the behavior displayed. According to Bandura (1986), self-efficacy is the perception that a person has in being able to display necessary acts and behaviors successfully in order to get the desired outcomes. Self-efficacy belief is based on our skills, and necessary to organize and perform our behaviors in order to achieve our goals. The people have competence to think of and evaluate themselves and their behaviors. Within this context, self-efficacy perception is considered as an important concept to perform the said evaluation. Self-efficacy perception is one's belief in his own knowledge and skill as to whether he is able to succeed a specific task or not. In this regard, the stronger expectations people have, the more effort they make. The self-efficacy perception of teachers as to their profession plays an important role in performing their profession successfully. Therefore, teachers' self-efficacy perception is regarded as an important field of study.

Teachers' self-efficacy perception is defined as their capacity to increase the performance of students or as the perception in being able to display necessary behaviors in order to fulfill their tasks successfully. Self-efficacy perception refers to one's struggling power and resistance. While the one, who does not trust to his own abilities and skills, gives up striving,

on the contrary the self-confident one faces the facts, and struggles more to solve the problems. So it can be said that a high level of self-efficacy has a positive impact on effectiveness of education. General self-efficacy of the teachers is a factor that may have an influence on the attitude of students to the courses and on learning-teaching facts. Moreover, such situations as being dominant in the classroom and giving confidence to students are too difficult for a teacher who does not have a high level of self-efficacy. (Uysal ve Kösemen, 2013; Ekici, 2008; Bıkmaz, 2004; Aksu, 2008; Azar, 2010).

Teaching is a learned profession that has social, psychological, economical, scientific and technological dimensions about the education, grounds on expertise knowledge and skill in a specific area, and requires pedagogical formation. The studies on qualifications of teachers show that self-efficacy perception of teachers is an important variable for the success in teaching profession (Demirel & Akkoyunlu, 2010). Therefore, the determination of self-efficacy levels of teachers is very crucial. In this study, it has been aimed to develop a self-efficacy perception scale regarding teaching profession in order to assess and evaluate the self-efficacy perception levels of pre-service teachers.

Method

Research Model

This research, in which the studies of the development, validity and reliability of the Self-Efficacy Perception for Teaching Profession Scale for pre-service teachers are conducted, is a study in the form of a survey. Item-scale pooling, applying for expert opinion on content validity, arranging scale items in accordance with expert opinions, testing, and the Exploratory Factor Analysis in the data analysis and reliability study were performed, respectively, in the process of developing the measurement tool.

Participants

The research sample consists of 323 pre-service teachers in total, 213 of whom were female and 106 were male, who received pedagogic formation training at Çukurova University Education Faculty in the 2014-2015 academic year and were at the university during the lesson hours when the scale was implemented. The fields of pre-service teachers are mathematics, physics, chemistry, biology, literature, sociology, history, theology, nursing, physical education, and music.

Data Collection Tool

An item pool of 41 items was created in the process of developing the data collection tool, and the opinions of the experts in curriculum and instruction were taken. In line with the recommendations taken from the experts, the number of items was determined as 41, and the data collection tool was made ready for application by giving its final shape. It was arranged in the form of a five-item Likert-type scale graded from “1-Totally Disagree” to “5-Totally Agree”.

Data Analysis

The data analysis was performed using SPSS 17.0 packaged software. The explanatory factor analysis, Cronbach’s Alpha internal consistency and correlation analysis were used within the scope of the analyses. The significance level of 0,05 was taken as a criterion in the interpretation of the results.

Results

The skewness and kurtosis coefficients of the items included in the scale, item-total score correlations, correlation matrix values of the items, common variances, factor loads (at least

.40) and the differences between the factor loads of the items attributed to more than one factor (at least .20) were examined in this study. As a result of these examinations, it was decided to remove 27 items from 41 items. Within the scope of these processes, the explanatory factor analysis was applied in order to examine the construct validity of the data collection tool after applying the answer form to pre-service teachers, and Varimax vertical rotation was used by maximum probability as the rotation method. Büyüköztürk (2012) indicates that the load value should be written at least as .32 in order to see the items that explain the variance of only 10% within the scope of each factor. Thus, the lower limit of the factor loads was taken as .32 in order to decide whether the items should or should not remain within the scale in the explanatory factor analysis.

Kaiser-Meyer-Olkin (KMO) and Barlett tests were used in order to determine the sufficiency of the sample size before passing to the implementation of the factor analysis. As a result of the analysis performed, it was determined that the KMO value is .84 and Barlett test is significant (X2=969.86 sd=91; p<0.01). In line with these findings, it can be said that the sample size is sufficient for performing the factor analysis and the data fulfil the normality with the multi-variable premise.

A two-factor structure was revealed as a result of the explanatory factor analysis performed. The factors reached from the factor analysis and reliability analyses, factor loads, factor eigenvalues, variance rates explained by factors, item-total score correlations, mutual factor variances and Cronbach's Alpha values are shown in Table 1.

Table 1

Distribution of the items making up the Self-Efficacy Perception for Teaching Profession Scale by factors, factor load values and item analysis results

Item No			**Item-Total Score Correlations**	**Mutual Factor Variances**
	Factor1	**Factor2**		
15	.71		.65	.50
1	.69		.61	.48
6	.66		.68	.47
5	.64		.66	.47
41	.62		.58	.39
4	.58		.64	.42
38	.56		.63	.43
14	.52		.56	.29
39	.48		.58	.31
10	.33		.43	.16
32		.73	.67	.54
36		.66	.61	.46
17		.61	.67	.39
19		.53	.69	.28
Eigenvalue	4.12	1.47	**Total**	
Variance Explained	%25	%15	%40	
Cronbach Alpha	.80	.55	.80	

The first component obtained as a result of the analyses is the dimension of "Field and Professional Knowledge", which is made up of the items number 15, 1, 6, 5, 41, 4, 38, 14, 39 and 10 being the expressions in regard to the field and professional knowledge on teaching profession. Certain items in this dimension are "I know the concepts in regard to my field well.", "I have the formation to guide each student through learning.", "I have the necessary knowledge and skills about strategies, methods and techniques." The factor loads of 10 items in this dimension are between .33 and .71, and their total item score correlations are between .43 and .68, and the Cronbach's Alpha internal consistency coefficient of this dimension is .80.

As a result of the analyses, the second component in the scale is the "Stability and Perseveration Effort" dimension, which is made up of the items number 32, 36, 17 and 19 concerning the stability and perseveration effort for the teaching profession. Some of the items in this dimension are "I make effort under any condition and up to the end in order to be an effective teacher.", "I always strive for finding a better way of teaching." The factor loads of 4 items in this dimension are between .53 and .73, and their total score correlation is between .61 and .69, and the Cronbach's Alpha internal consistency coefficient of this dimension is .55.

The two sub-scales account for 40% of the total variance. It was determined that the Cronbach's Alpha internal consistency coefficient of the whole scale is .80. Can (2013) and Kayış (2008) indicated that a scale between .80 and .1 is highly reliable. Based on this, it can be said that the whole scale is reliable.

The correlation matrix related to the total score and subscales of the Self-Efficacy Perception for Teaching Profession Scale and the mean and standard deviation values for these are shown in Table 2.

Table 2

Correlation Matrix, Mean and Standard Deviation Values of the Total Score and Sub-Scales of the Self-Efficacy Perception for Teaching Profession Scale

Factors	1	2	X	Sd
Field and Professional Knowledge (1)	1	.36**	3.56	.53
Stability and Perseveration Effort (2)	.36**	1	4.18	.53
Scale Total Scores	.94**	.64**	3.48	.43

N=323, *p<0.05, **p<0.01

As is seen from Table 2, all of the sub-scales in the scale exhibit significant relations with one another and the total score (p<0.01, p<0.05). The sub-scale of Field and Professional Knowledge exhibits a significant positive relationship with another sub-scale with .36 and .94 with the total score. Again, the Stability and Perseveration Effort sub-scale exhibits a significant positive relationship with another sub-scale with a value of .36 and .64 with the total score. The mean values of the total and subscales of the Self-Efficacy Perception for Teaching Profession Scale vary between 3.48 and 4.18 while the standard deviation values vary between .43 and .53.

Discussion, Conclusion & Implementation

In this study, it was determined that the Self-Efficacy Perception for Teaching Profession Scale consists of two sub-scales being Field and Professional Knowledge and Stability and Perseveration Effort, the Cronbach's Alpha internal consistency coefficient of the whole scale is .80, and thus, the scale is reliable.

Upon examining the studies performed in Turkey for developing and using self-efficacy scale for the teaching profession, it was determined that adaptation studies were carried out in general and the scales adapted into Turkish were used (Yılmaz, Köseoğlu, Gerçek & Soran, 2004; Çapa, Çakıroğlu & Sarıkaya, 2005; Baloğlu & Karadağ, 2008; Cerit, 2010; Akay & Boz, 2011; Ekinci, Yıldırım, Bindak, Öter, Özdaş & Akın, 2014). In the study carried out by Yılmaz et al. (2004), the Teaching Self-Efficacy Scale developed by Schmitz & Schwarzer (2000) was adapted into Turkish, and it was determined that there were two sub-dimensions, being coping behaviour and innovative behaviour. In addition to this, the Teachers' Sense of Efficacy

Scale developed by Tschannen-Moran & Woofolk-Hoy (2001) was adapted into Turkish in the study carried out by Çapa, Çakıroğlu & Sarıkaya (2005); and it was determined that it consists of three sub-dimensions being student engagement, teaching strategies and classroom management. Again in the study carried out by Baloğlu & Karadağ (2008), the Ohio Teacher Efficacy Determination Scale developed by Tschannen-Moran & Woofolk-Hoy (2001) was adapted into Turkish, and it was determined that it consists of three sub-dimensions being efficacy for teaching strategies, efficacy for classroom management and efficacy for student contribution. In addition to this, in the study carried out by Cerit (2010), the Teacher Efficacy Scale developed by Gibson & Dembo (1984) was adapted into Turkish and as a result of the adaptation; it has three sub-dimensions being personal teaching efficacy, general teaching efficacy and professional knowledge efficacy. Furthermore, in the Self-Efficacy of Pre-service Teachers on Teaching Profession Scale developed by Oral, Ekinci, Yıldırım, Öter, Özdaş & Akın (2011) and used in the study carried out by Ekinci et al. (2014), it was expressed that there are sub-dimensions on the art of teaching, communication and social activity, learning and teaching process, knowing and assessing the student and on program information. Finally, there are two sub-dimensions in the Self-Efficacy in Teaching-Learning Scale developed by Kan (2007), being planning and assessing the teaching, and knowing and guiding the student. In this study performed, it was determined that there are two sub-dimensions being field and professional knowledge and stability and perseveration effort. In general, it can be said that the sub-dimensions achieved in this study cover the sub-dimensions in the scales developed and adapted in our country and are more general dimensions.

As a result of this study, considering the values obtained from the explanatory factor analyses and reliability analyses, it can be said that the Self-Efficacy Perception for Teaching Profession Scale is a tool that can be used in determining the perceptions of pre-service teachers on the teaching profession. It is considered that the scale will contribute significantly to determining the self-efficacy perceptions of pre-service teachers on teaching profession and the studies to be carried out in this framework. The scale developed in this study was developed for pre-service teachers. This scale can be used for teachers after applying to teachers and performing validity and reliability studies. In addition to this, this study was performed at a state university. Therefore, this scale can also be applied in other universities in our country.

As this research is a scale development study, only findings on the reliability and validity studies were achieved in the research. Studies on determining the self-efficacy perception levels of pre-service teachers for teaching profession can be performed by using this scale as a data collection tool in different studies. Determining the self-efficacy perceptions of pre-service teachers on teaching profession is also important in terms of determining the problems in this area and elimination of these problems.

References

Akay, H. & Boz, N. (2011). Sınıf öğretmeni adaylarının matematiğe yönelik tutumları, matematiğe karşı öz-yeterlik algıları ve öğretmen öz-yeterlik inançları arasındaki ilişkilerin incelenmesi. *Türk Eğitim Bilimleri Dergisi, 9* (2), 281-312.

Aksu, H. H. (2008). Öğretmen Adaylarının Matematik Öğretimine Yönelik Öz-Yeterlilik İnançları. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 8* (2), 161-170.

Azar, A. (2010). Ortaöğretim Fen Bilimleri Ve Matematik Öğretmeni Adaylarının Öz Yeterlilik İnançları. *ZKÜ Sosyal Bilimler Dergisi, 6* (12), 235-252.

Baloğlu, N. & Karadağ, E. (2008). Öğretmen yetkinliğinin tarihsel gelişimi ve Ohio öğretmen yetkinlik ölçeği: Türk kültürüne uyarlama, dil geçerliği ve faktör yapısının incelenmesi. *Kuram ve Uygulamada Eğitim Yönetimi, 56,* 571-606.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bıkmaz, F. H. (2002). Ortaöğretim Fen Bilimleri Ve Matematik Öğretmeni Adaylarının Öz Yeterlilik İnançları. *Eğitim Bilimleri ve Uygulama, 1* (2), 197-210.

Büyüköztürk, Ş. (2012). Sosyal bilimler için çok değişkenli istatistik SPSS ve Lisrel uygulamaları (2. bs.). Ankara: Pegem Akademi.

Can, A. (2013). *SPSS ile bilimsel araştırma sürecinde veri analizi,* (1 bs.). Ankara: Pegem Akademi.

Cerit, Y. (2010). Teacher efficacy scale: the study of validity and reliability and preservice classroom teachers' self efficacy beliefs. *Journal of Theory and Practice in Education, 6* (1), 68-85.

Çapa, Y. Çakıroğlu, J. & Sarıkaya, H. (2005). The development and validation of a Turkish version of the teachers' sense of efficacy scale. *Education and Science, 30* (137), 74-81.

Demirel, M. & Akkoyunlu, B. (2010). Öğretmen adaylarının öğretmenlik mesleğine ilişkin öz yeterlik inançları ve tutumları. *Uluslararası Öğretmen Yetiştirme Politikaları Ve Sorunları Sempozyumu II*. 16-18 Mayıs 2010. Hacettepe Üniversitesi, Ankara.

Ekici, G. (2008). Sınıf yönetimi dersinin öğretmen adaylarının öğretmen öz-yeterlik algı düzeyine etkisi*. Hacettepe Üniversitesi Eğitim Fakültesi Dergisi 35*, 98-110.

Ekinci, A., Yıldırım, M. C., Bindak, R., Öter, Ö. M., Özdaş, F. & Akın, M. A. (2014). Öğretmen adaylarının öğretmenlik mesleğine ilişkin öz-yeterlik algılarının çeşitli değişkenler açısından incelenmesi. *Gaziantep University Journal of Social Sciences, 13* (3), 723-734.

Gibson, S. & Dembo, M. H. (1984). Teacher efficacy: a construct validation. *Journal of Educational Psychology, 76* (4), 569–582. In Y. Cerit. (2010). Teacher efficacy scale: the study of validity and reliability and preservice classroom teachers' self efficacy beliefs. *Journal of Theory and Practice in Education, 6* (1), 68-85.

Kan, A. (2007). Öğretmen adaylarının eğitme-öğretme özyetkinliğine yönelik ölçek geliştirme ve eğitme-öğretme özyetkinlikleri açısından değerlendirilmesi (MEÜ Eğitim Fakültesi örneği). *Mersin Üniversitesi Eğitim Fakültesi Dergisi, 3* (1), 35-50.

Kayış (2008), A. Güvenilirlik analizi. In Ş. Kalaycı (Edt). *SPSS uygulamalı çok değişkenli istatistik teknikleri* (3. bs.) (404-420). Ankara: Asil Yayın Dağıtım.

Oral, B., Ekinci, A., Yıldırım, M. C., Öter, Ö. M., Özdaş, F. ve Akın, M. A. (2011). İlköğretim öğretmen adaylarının mesleki ve özel alan yeterlikleri. Eğitim Fakültelerinin Öğretmen Yetiştirme Kapasitesinin Güçlendirilmesi Projesi (Ed. A. Ekinci, Ö. M. Öter), Dicle Üniversitesi. In A. Ekinci et al. (2014). Öğretmen adaylarının öğretmenlik mesleğine ilişkin öz-yeterlik algılarının çeşitli değişkenler açısından incelenmesi. *Gaziantep University Journal of Social Sciences, 13* (3), 723-734.

Schmitz, G. S. & Schwarzer, R. (2000). Selbstwirksamkeitserwartung von Lehrern: Langsschnitt befunde mit einem neuen Instrument, Zeitschrift für Pädagogische Psychologie, 14 (1),12-25. In M. Yılmaz et al. (2004). Yabancı dilde hazırlanan bir öğretmen öz-yeterlik ölçeğinin Türkçe'ye uyarlanması. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 27,* 260-267.

Tschannen-Moran, M. & Woolfolf-Hoy, A. (2001). Teacher efficacy: capturing an elusive construct. *Teaching and Teacher Education, 17*(7), 783-805. In N. Baloğlu & E. Karadağ. (2008). Öğretmen yetkinliğinin tarihsel gelişimi ve Ohio öğretmen yetkinlik ölçeği: Türk kültürüne uyarlama, dil geçerliği ve faktör yapısının incelenmesi. *Kuram ve Uygulamada Eğitim Yönetimi, 56,* 571-606.

Uysal, İ. V& Kösemen, S. (2013). Öğretmen adaylarının genel öz-yeterlik inançlarının incelenmesi. *Eğitim ve Öğretim Araştırmaları Dergisi, 2*(2), 217-226.

Yılmaz, M., Köseoğlu, P., Gerçek, C. & Soran, H. (2004). Yabancı dilde hazırlanan bir öğretmen öz-yeterlik ölçeğinin Türkçe'ye uyarlanması. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 27,* 260-267.

Perceptions of preservice mathematics teachers towards the concepts of justice, social justice and equality

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Abstract

The purpose of this study is to examine the preservice mathematics teachers' perceptions of the concepts of justice, social justice, and equality. The study carried out for this purpose was conducted using the phenomenological method, among qualitative research patterns. The participants of the research were determined using criteria sampling of purposeful sampling methods. The participants of the research consist of 89 preservice mathematics teachers receiving pedagogical formation education in the academic year of 2013-2014. The research data were collected in writing, and preservice teachers were asked to make definitions for determining what they understand from the concepts of justice, social justice and equality in the data collection tool. According to the findings of the research, the preservice mathematics teachers' perceptions towards the concept of justice were gathered under three themes being perceptions towards rights, perceptions towards laws and perceptions towards morals. Furthermore, the perceptions of the social justice concept were gathered under three themes as perceptions towards the individual, perceptions towrds the society and perceptions towards the state. Moreover, the preservice teachers' perceptions towards the concept of equality were gathered under three main themes, being perceptions towards respect for diversity, perceptions towards social justice and perceptions towards justice. According to the results of the data, it can be said that the perceptions of preservice mathematics teachers are generally related to the scientific definition, and their perceptions of the concept of social justice are slightly related to the scientific definition. Accordingly, it is suggested that applications aimed at equipping preservice teachers with the information, skills and attitudes should be performed and studies that include these concepts should be carried out in order for preservice teachers to create solutions to the problems in this respect by gaining awareness of the subjects of justice, social justice, and equality.

Keywords: Justice, social justice, equality, preservice teachers.

Introduction

In today's world that is facing many problems, issues such as unemployment, inequality, exclusion and poverty come to the fore most (Sapancalı, 2001). Globalization is the most important element that triggers these problems. One of the most important consequences of globalization is that it further increases the problems of social injustice and inequality (Özerkmen, 2004). Education has an important role in realizing and solving this type of problems. Indeed, considering the functions of education, it is thought that social functions such as gaining the skills that will ensure the adaptation to the environment and society, gaining life skills and behaviours, developing and strengthening the respect towards human rights and fundamental freedoms, and introducing national and universal culture (Gül, 2004)

must be effective in the solution of these problems. Thus, it is indispensable that social elements such as social justice and equality are included in the learning and teaching processes.

The concept of social justice features the concept of justice in terms of its sense. Thus, it is indicated that it is first necessary to know the meaning of the concept of justice in order to understand the concept of social justice (Boydak Özan, 2010). The concept of justice is defined as "compliance with the rights and laws, paying regard to the rights, righteousness, justice; government agencies that fulfill this work; giving everyone what they deserve and are entitled to; ensuring that the rights owned by the law are used by everyone" (Turkish Language Association [TLA], 2005, p.18). Again, Erdoğan (2013, p.190) defines it as "a free social environment, where individuals whose opportunity to fulfil their freely chosen targets and do the activities are not hindered, are not discriminated in any way and do not use others just as a tool". The concept of social justice is defined as "the state of equilibrium ensured in the social domain by considering certain measures such as life standard, the level of income, etc. in different segments of society within the frame of equal opportunities" (TLA, 2005, p.1795). The concept of social justice is also defined as "the process of working toward, and the condition of, meeting everyone's basic needs and fulfilling everyone's potential to live productive and empowered lives as participating citizens of our global community" (Wade, 2007, p.5). According to Balı (2001), social justice should not be only considered as a limited sharing principle with the distribution of the richness with economic value by the state; beyond this understanding, it must be defined as a concept with a series of qualities related to human rights and freedoms. Moreover, the concept of equality is defined as "the state of non-discrimination between people in terms of law; the state of non-discrimination between people in terms of social and political rights whatever their physical and mental differences are" (TLA, 2005, p.657). In the Constitution of the Republic of Turkey, it is indicated that "Each Turkish citizen innately has the right and authority to lead an honourable life and develop their material and moral existence in this direction within the national culture, civilization and legal order by benefiting the basic rights and freedoms in this Constitution in line with the requirements of equality and social justice". Furthermore, the Universal Declaration of Human Rights (1948) includes the expression "All human beings are born free and equal in dignity and rights". Upon examining the definitions of the concepts of justice, equality and social justice, it can be said that all these three concepts are interrelated in terms of democracy and human rights. Starting from all these definitions and explanations, that individuals possess the awareness of justice, social justice and equality values is considered to be important within the framework of social life.

In a socially just society, people consider each other as of equal value and have equal opportunities (Reynolds&Brown, 2010). To this end, education is deemed important in that students learn in academic, social, emotional and citizenship contexts and develop their life opportunities (Ludlow, Enterline&Cochran-Smith, 2008). Starting from this thought, international education programs on social justice and equality are developed and implemented (Oxford Committee for Famine Relief [OXFAM], 2006; British Columbia Ministry of Education, 2008; United Nations International Children's Emergency Fund [UNICEF], 2008; The Elementary Teachers' Federation of Ontario, 2011; Equality and Human Rights Commission, 2012). In addition, that teachers and school directors determine injustices in social terms and find solutions to these problems in order for the schools to reflect the society and develop the life opportunities of the students by correction (Reynolds&Brown, 2010). Starting from this point, while importance is attached to the subjects social justice and equality in both formal education and teacher education abroad, no such an education program developed directly with this purpose has been encountered in Türkiye. Accordingly, developing

and implementing education programs with regard to justice and equality in our country is a necessity.

The teachers are expected to develop the awareness of social justice in their classes in order to help primary and secondary school students determine various ways in take action towards carrying out positive activities in the society (Garii&Rule, 2009). And to teach how to develop this awareness depends on the training of the teachers, that is teacher training programs. In this sense, it is believed that regulating teacher training programs in terms of social justice and equality would be beneficial. It is believed that whether preservice teachers admit the teaching of social justice subjects depends on their previous beliefs (Reynolds& Brown, 2010). According to McCall&Andringa (1997), previous experiences, knowledge and beliefs of preservice teachers have an effect on their desire to adopt the targets towards social justice. Starting from this point, it is deemed important that the current perceptions of preservice teachers on these subjects are determined.

Mathematics lesson is important as a stage of teaching the subjects of social justice and equality. In this direction, educators in the search for social justice and equality consider mathematics as a strong tool for determining the injustices in social life and correcting this situation (Allen, 2003; Gonzalez, 2009; Gutstein, 2003; Gutstein, 2006; Koestler, 2010; Skovsmose & Nielsen, 1996; Spielman, 2008). In this sense, the idea that the subjects of social justice and equality should be included in mathematics lesson and other lessons comes up. The first principle of "Six Principles for School Mathematics" prepared by National Council of Teachers of Mathematics [NCTM] is "Justice" (NCTM, 2000). In this sense, it can be said that NCTM also attributes importance to "justice" in teaching mathematics. However Gutstein (2006) emphasises that there are deficits about this principle of NCTM and states that significant changes should be realized in the society in social and economical terms when it is desired to achieve equality, and mathematics and mathematics teaching have an important role in achieving this. Accordingly, it can be said that arrangements on the subjects of social justice and equality are required in the context of mathematics lesson. As it is the teachers who will make these arrangements, it is deemed important that teachers and preservice teachers, who are future teachers, have knowledge and skills about these subjects. Starting from this point, it is believed that it would be meaningful to investigate the perceptions of preservice mathematics teachers on subjects related to social justice and equality. In this context, the purpose of the study is to investigate the perceptions of preservice mathematics teachers towards the concepts justice, social justice and equality. The answers to the following questions were sought in line with this general purpose:

- What are the perceptions of preservice mathematics teachers towards the concept of justice?
- What are the perceptions of preservice mathematics teachers towards the concept of social justice?
- What are the perceptions of preservice mathematics teachers towards the concept of equality?

Method

Research Design

This study, which aims to determine the perceptions of mathematics teachers on the concepts justice, social justice and equality, was carried out with the phenomenological design, one of the qualitative research designs. In the phenomenological design, it is tried to understand the structure and essence of a phenomenon experienced by an individual or a

group of individuals (Patton, 2002). In the studies carried out in accordance with the phenomenological design; it is tried to explain the meaning of the phenomena and interactions in certain situations (Bogdan & Biklen, 2007). In this study, it was tried to understand and explain the perceptions of preservice mathematics teachers of certain concepts.

Participants

The participants of the research were chosen through criterion sampling, one of the purposeful sampling methods. Purposeful sampling is a method that is designed in order to deepen the experiences of individuals or groups or develop theories or approaches (Dewers and Frankel, 2000), and the researcher acts actively in the selection of the most efficient sample in order to answer the research question (Marshall, 1996). The criteria of determining the participants were established as being preservice teachers and having received pedagogical formation training in the field of teaching mathematics. The participants of the research consist of 89 preservice mathematics teachers who receive pedagogical formation training in 2013-2014 school year.

Instrument and Data Analysis

Data of the research are collected in writing, and preservice teachers were asked to make definitions on defining what they understand from the concepts justice, social justice and equality. The analysis of the data was made via content analysis. Content analysis is an inferential process that includes a series of processes and varies by the theoretical and meaningful interests of the researcher in order to make logical inferences from the text (Weber, 1990). Content analysis is used in order to reveal the main contexts and meanings in the qualitative data of a particular size, and the main objective of the activities in this process is to achieve patterns and themes that can account for the data collected (Patton, 2002). In this context, first, separate codes were created for the concepts of justice, social justice and equality, and then, themes were formed by bringing together the related codes. Moreover, participants' written view forms were named in the way that PT1, PT2, PT3, etc. to sequence number. Nvivo 10 program was used in the analysis of the data. Two researchers made coding together in order to ensure the reliability of the data analysis, a consensus was reached on different codes and themes, and the data analysis achieved its final state.

Results

The findings of the study were gathered under three themes regarding preservice teachers' definitions for justice, social justice and equality concepts. The findings concerning these themes were presented below.

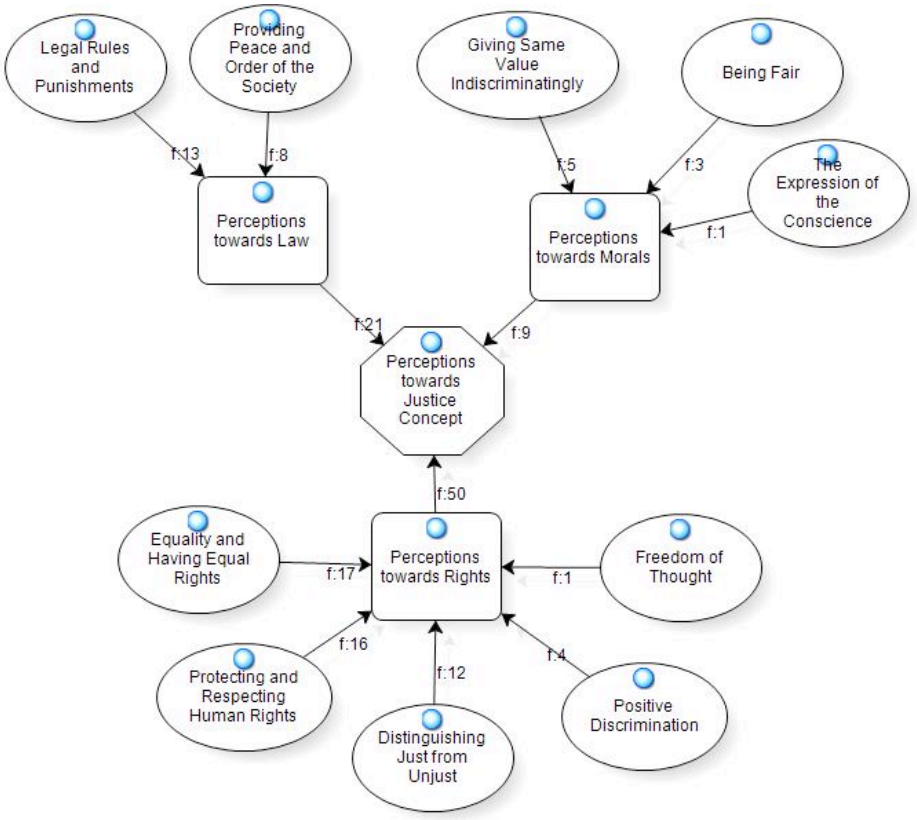

Figure 1. Perceptions of preservice mathematics teachers towards the concept of justice

As it is seen in Figure 1, the preservice mathematics teachers' perceptions towards the concept of justice were gathered under three themes being the perceptions towards rights, perceptions towards law and perceptions towards morals. The perceptions of the concept of justice were mainly addressed within the perceptions of rights. It is mostly about equality and having equal rights (f:17), protecting and respecting human rights (f:16) and distinguishing between just and unjust (f:12) within the scope of the theme of perceptions of rights. Moreover, there are also perceptions of positive discrimination and freedom of thought. Again, within the scope of the perceptions towards law, it was seen that preservice teachers have the highest perceptions of legal rules and punishments (f:13), but they also have perceptions of providing peace and order of the society (f:8). Furthermore, it was found that preservice teachers have the highest perceptions of giving the same value indiscriminatingly (f:5), and they also have such perceptions as being fair (f:3) and the expression of the conscience (f:1). Lastly, nine preservice teachers indicated that they do not have any knowledge or thought of the subject. Below are the examples of the opinions of preservice teachers on the concept of justice:

> *"An alliance of the concepts and behaviours that defend the rights of the people, limit one's own freedom where another person's freedom starts, and ensure equality and balance in the society."* (PT3, 22, F)

> *"That people respect the rights and freedom of others, protect and use own rights and freedom, and everybody is assessed under equal conditions."* (PT5, 22, F)

> *"The state that is necessary in order to ensure the serenity and safety of the society."* (PT6, 22, F)

"That people are judged in the face of law equally and without being discriminated." (PT20, 32, F)

"That people enjoy their own rights without violating others' rights, without discriminating between language, religion and race. That the punishment he/she will get when he/she gets out of this area is implemented without considering the differences." (PT55, 31, M)

"I cannot define it now as no such thing has ever been invented." (PT58, 23, F)

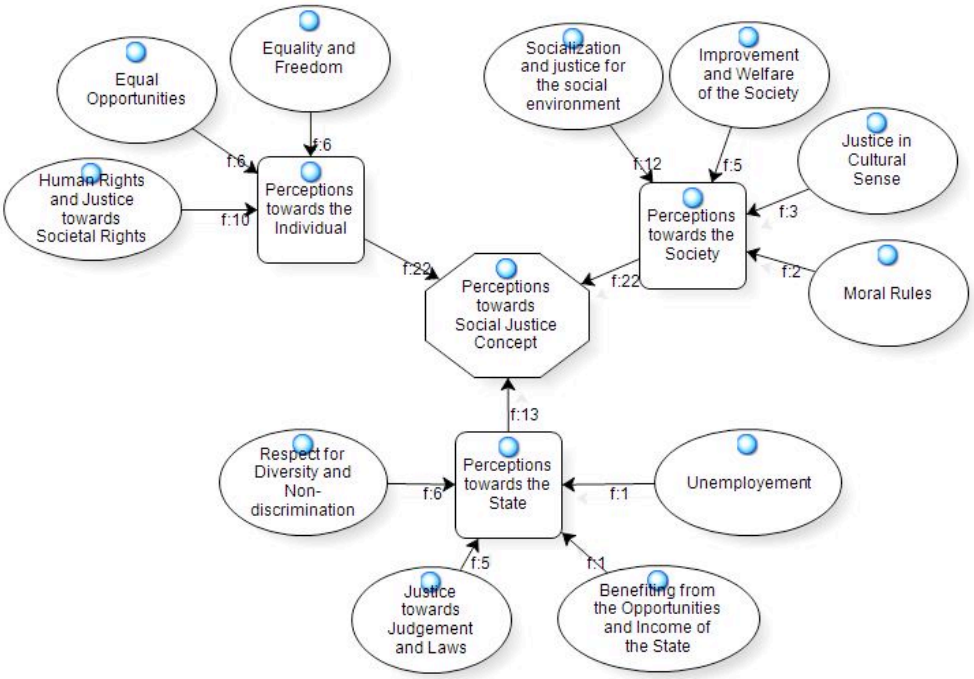

Figure 2. Perceptions of preservice mathematics teachers towards the concept of social justice

As it is seen in Figure 2, the perceptions of preservice mathematics teachers towards the concept of social justice are gathered under three themes being the perceptions towards the individual, perceptions towards the society and perceptions towards the state. Most of the preservice teachers' perceptions towards the concept of social justice are included within the scope of the perceptions towards the individual (f:22) and perceptions towards the society (f:22) themes. It was determined that the theme of the perceptions towards the individual includes human rights and justice towards societal rights (f:10) most, and also opinions about equal opportunities (f:6), equality and freedom (f:6). Again, the theme of the perceptions towards the society is mostly about the opinion of socialization and justice for the social environment (f:12); apart from that, there are also opinions about improvement and welfare of the society (f:5), justice in cultural sense (f:3) and moral rules (f:2). Moreover, it was also determined that preservice teachers have most perceptions of the respect for diversity and non-discrimination (f:6) and the justice towards judgment and laws (f:5), in addition to these, they also have opinions about benefiting from the opportunities and income of the state (f:1) and unemployment (f:1). Lastly, twenty-five preservice teachers indicated that they did not have any knowledge and thought about the concept of social justice. Below are the samples of the opinions related to the preservice teachers' perceptions of the concept of social justice:

"Ensuring equality by not discriminating others for the opportunities given to another person, fulfilling what is necessary." (PT2, 22, F)

"That people can live under equal conditions without a class difference and discrimination; that people of different cultures and different living conditions receive the same education in the classroom environment." (PT5, 22, F)

"Being able to assess everyone with the same qualities without determining human rights by their statutes, places or income levels." (PT9, 24, F)

"That everyone has the same rights in social domain. That everyone can socialize as much as he/she wants and enter into the social environments he/she wants." (PT28, 22, F)

"That the society complies with the rules and laws." (PT63, 22, F)

"I do not know." (Ö76, 27, M)

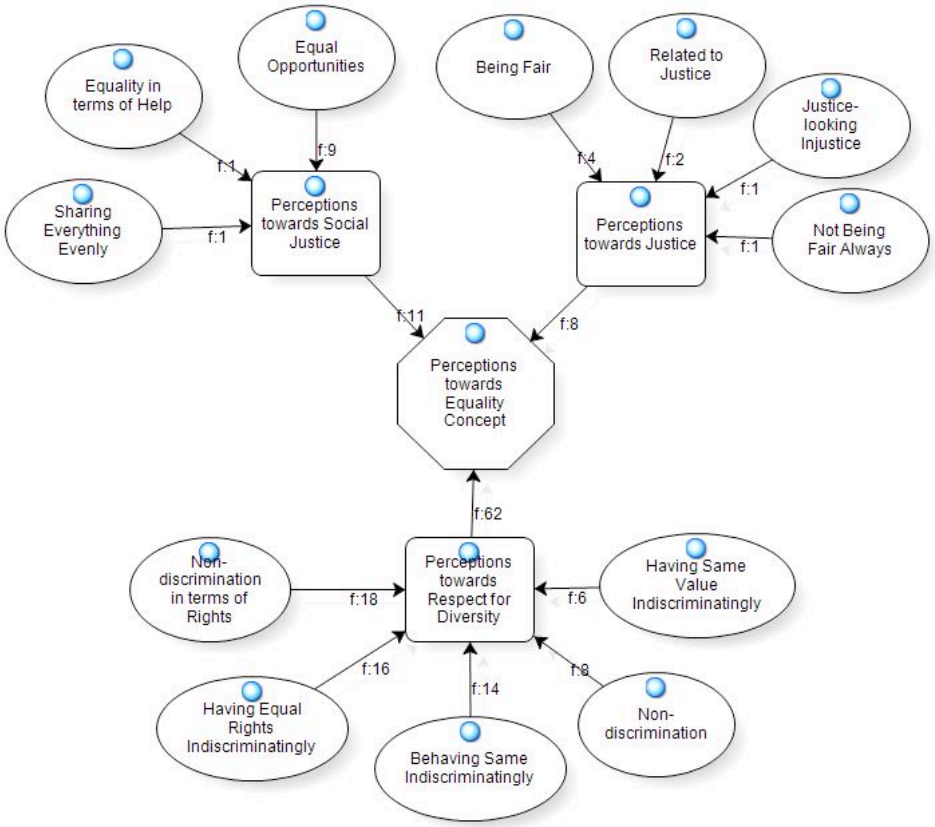

Figure 3. Perceptions of preservice mathematics teachers towards the concept of equality

As it is seen in Figure 3, the preservice mathematics teachers' perceptions towards the concept of equality are divided into three themes being the perceptions towards respect for diversity, perceptions towards social justice and perceptions towards justice. The preservice teachers' perceptions towards the concept of equality are mostly included under the theme of perceptions of the respect for diversity. Within the scope of the theme of the respect towards differences, preservice teachers indicated mostly their opinions about non-discrimination in terms of rights (f:18), having same rights without considering the differences (f:16) and behaving same indiscriminatingly (f:14), and they also expressed their opinions about non-discrimination (f:8) and having same values indiscriminatingly (f:6). Again, it was determined that preservice teachers had perceptions of equal opportunities (f:9), equality in terms of help (f:1) and sharing everything evenly (f:1) within the scope of the perceptions towards social

justice. Furthermore, they expressed their opinions about being fair (f:4), related to justice (f:2), justice-looking injustice (f:1) and not being fair always (f:1). Lastly, seven preservice teachers expressed that they did not have any knowledge and opinion about the concept of equality, and one preservice teacher expressed that it was about the equality within mathematics. Below there are some examples of the preservice teachers' perceptions of the concept of equality:

> *"The need for everybody to have the same value without discriminating different classes or genders and race is important for equality. It is important to give value and support in an equal and humanitarian manner without finding the weaknesses of individuals."* (PT1, 30, M)
>
> *"That everyone in the society is accepted without making such discriminations as religion, language and race."* (PT6, 22, F)
>
> *"That each individual has the same rights without considering things like age, gender, race, religion, etc."* (PT24, 28, M).
>
> *"I don't have any idea."* (PT28, 22, F)
>
> *"It is to treat everyone without making any discrimination, and approaching them in the same way. This equality may sometimes be unjust."* (PT32, 23, F)
>
> *"It is "injustice" in the form of justice."* (PT51, 23, M)

Discussion, Conclusion & Implementation

As a result of this study, it was seen that preservice mathematics teachers have different perceptions of the concepts of justice, social justice and equality. It was determined that the preservice mathematics teachers' perceptions towards the concept of justice are included within the perceptions towards rights, perceptions towards law and perceptions towards morals. Upon examining the definitions made on the concept of justice, it is seen that most of the definitions are about equality, human rights and legal rules. Considering the scientific definition of the concept of justice, justice has an ethical and moral aspect as well as being a concept within the scope of the rights and laws. Thus, it can be said that an important part of the perceptions of preservice teachers on the concept of justice is related to the scientific definition. Nevertheless, it is thought-provoking that nine preservice teachers are not knowledgeable about the concept of justice. In this sense, it can be said that preservice teachers have lack of knowledge on the concept of justice, at least partly.

Upon examining the preservice mathematics teachers' perceptions towards the concept of social justice, it was seen that they were addressed within the scope of the perceptions towards the individual, perceptions towards the society and perceptions towards the state. In the study on the concept of social justice carried out by Yıldırım (2011) on university students, it was determined that university students assess those responsible for social injustices at the level of individuals, family, society and state. It can be said that preservice teachers associate the concept of social justice with the individual, society and state is in parallel with the study in question. It was determined that the perceptions towards the concept of social justice mostly include opinions about socialization, social environment, human rights, respect for diversity and non-discrimination. Considering the scientific definition of the concept of social justice, it includes human rights as well as the level of income, equal opportunity and fair distribution of opportunities. When the perceptions indicated by preservice teachers are examined, it can be said that very few of them are related to the scientific definition of the concept of social

justice. It is also thought that preservice teachers mistake the concept of social justice with the concepts of justice and equality. Nevertheless, that twenty-five preservice teachers do not have any knowledge and opinion about the concept of social justice leads to the thought that there are significant lack of knowledge about this concept.

As for the concept of equality, it was seen that preservice mathematics teachers assess these concepts within the framework of the perceptions towards respect for diversity, the perceptions towards social justice and the perceptions towards justice. It was determined that preservice teachers address the concept of equality mostly in terms of non-discrimination about the rights, not considering the differences and equal opportunities. According to Güriz (2013), the concepts of justice and equality are associated. Considering the scientific definition of the concept of equality, it can be said that it includes the non-discrimination between individuals in terms of rights and laws without considering their differences. Starting from this point, it can be said that the preservice teachers' perceptions of the concept of equality are associated or partially associated with the scientific definition. Nevertheless, upon examining the definitions made by preservice teachers, it is thought that they perceive the concept of equality in the sense of justice and social justice. Furthermore, that seven preservice teachers expressed that they do not have any knowledge and opinion about the concept of equality leads to the thought that preservice teachers may need more information.

Consequently, it can be said that preservice mathematics teachers address the concepts of justice, social justice and equality differently. Nevertheless, it can be said that they produce definitions that are not related to the scientific definition of the concept of social justice, although they create definitions that are significantly related or partially related to the scientific definition of the concepts of justice and equality. In the study conducted by Garii & Rule (2009), it was determined that preservice teachers need support and guidance of education faculties on the subjects of social justice. Again, Simic-Muller (2005) also expresses that preservice teachers should gain awareness of the world. Starting from these results, it is provided for to implement practices for equipping preservice teachers with the knowledge, skills and attitudes about justice, social justice and equality by gaining awareness of these subjects. Reynolds & Brown (2010) that conducted a study in this context suggest universities and teacher education programs to do closer studies to social justice subjects. Lastly, it is suggested to carry out studies on justice, social justice and equality as there are few studies on justice, social justice and equality in our country (Boydak Özan, 2010; Yıldırım, 2011) and certain studies are conducted within the framework of social justice for the management of education (Tomul, 2009; Beycioğlu&Kesik, 2014; Karacan, Bağlıbel&Bindak, 2015; Özdemir&Kütküt, 2015; Polat, 2015).

References

Allen, A. F. (2003). *Integrating themes of social justice and equity into a middle school mathematics classroom.* Unpublished doctoral dissertation. Indiana University, Indianapolis. (UMI no.3122658.) Retrieved December 17, 2013 from Proquest database.

Balı, A. Ş. (2001). *Çokkültürlülük ve sosyal adalet.* (1. bs). Konya: Çizgi Kitabevi.

Beycioğlu, K. & Kesik, F. (2014). Sosyal adalet liderliği ölçeği: geçerlik ve güvenirlik çalışması. *9. Ulusal Eğitim Yönetimi Kongresi,* 8-10 Mayıs 2014, Siirt.

Bogdan, R.C. & Biklen, S. K. (2007). *Qualitative research for education – an introduction to theory and methods* (5th ed.). Boston: Pearson.

Boydak Özan, M. (2010). Okullarda sosyal adalet kavramına ilişkin öğretmenlerin ürettikleri metaforlar. *E-journal of New World Sciences Academy, 5* (1), 140-157.

British Columbia Ministry of Education (2008). *Making space:Teaching for diversity and social justice throughout the K-12 curriculum.* British Columbia: GT Publishing Services. Retrieved June 29, 2015 from https://www.bced.gov.bc.ca/irp/pdfs/making_space/mkg_spc_intr.pdf

Devers, K. J. & Frankel, R. M. (2000). Study design in qualitative research – 2: sampling and data collection strategies. *Education for health, 13* (2), 263 – 271.

Equality and Human Rights Commission (2012). *Education providers.* Retrieved June 29, 2015 from http://www.equalityhumanrights.com/private-and-public-sector-guidance/education-providers

Erdoğan, M. (2013). Özgürlük, adalet, refah. A. Güriz (Ed.) *Adalet kavramı* (3. bs). İçinde (ss.171-193). Ankara: Türkiye Felsefe Kurumu.

Garii, B. & Rule, A. C. (2009). Integrating social justice with matehamtics and science. *Taching and Teacher Education, 25,* 490-499.

Gonzalez, L. (2009). Teaching mathematics for social justice: reflections on a community of practice for urban high school mathematics teachers. *Journal of Urban Mathematics Education, 2*(1), 22-51.

Gutstein, E. (2003). Teaching and learning mathematics for social justice in urban, Latino school. *Journal for Research in Mathematics Education, 34*(1), 37-73. 18 Aralık 2013 tarihinde JSTOR veritabanından edinilmiştir.

Gutstein, E. (2006). *Reading and writing the world with mathematics – toward a pedagogy for social justice.* New York: Routledge.

Gül, G. (2004). Birey toplum eğitim ve öğretmen. *Hasan Ali Yücel Eğitim Fakültesi Dergisi, 1*, 223-236. 15 Şubat 2014 tarihinde http://journals.istanbul.edu.tr/tr/index.php/hayef/article/viewFile/15299/14500 adresinden edinilmiştir.

Güriz, A. (2013). Adalet kavramının belirsizliği. A. Güriz (Ed.), *Adalet kavramı* (3. bs). İçinde (ss.7-38) Ankara: Türkiye Felsefe Kurumu.

İnsan Hakları Evrensel Beyannamesi. (1948). 28 Şubat 2014 tarihinde http://www.tbmm.gov.tr/komisyon/insanhaklari/pdf01/203-208.pdf adresinden edinilmiştir.

Karacan, H., Bağlıbel, M. & Bindak, R. (2015). Okullarda sosyal adalet ölçeğinin geliştirilmesi. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 12* (31), 54-68.

Koestler, C. (2010). (Re)envisioning mathematics education: examining equity and social justice in an elementary mathematics methods course. Yayımlanmamış doktora tezi. University of Wisconsin – Madison. (UMI no. 3437187). Retrieved DEcember 17, 2013 from Proquest database.

Ludlow, L. H., Enterline, S. E. & Cochran-Smith, M. (2008). Learning to teach for social justice-beliefs scale: an application of rasch measurement principles. *Measurement and Evaluation in Counseling and Development, 40* (4), 194-214.

Marshall, M. N. (1996). Sampling for qualitative research. *Family Practice Oxford University Press, 13* (6),522 – 525.

McCall, A. L. & Andringa, A. (1997). Learning to teach for justice and equality in a multicultural social reconstructionist teacher education course. *Action in teacher education, 18* (4), 57-67.

NCTM (2000). Executive summary principles and standards for school mathematics. Retrieved February 28, 2014 from http://www.nctm.org/uploadedFiles/Math_Standards/12752_exec_pssm.pdf

OXFAM (2006). *Educatiom for global citizenship: a guide for schools.* Oxford: OXFAM GB. Retrieved June 29, 2015 from

http://www.oxfam.org.uk/~/media/Files/Education/Global%20Citizenship/education_for_global_citizenship_a_guide_for_schools.ashx

Özdemir, M. & Kütküt, B. (2015). Sosyal adalet liderliği ölçeği'nin (SALÖ) geliştirilmesi: geçerlik ve güvenirlik çalışması. *Ahi Evran Kırşehir Eğitim Fakültesi Dergisi, 16* (3), 201-218.

Özerkmen, N. (2004). Uluslar arası eşitsizliği derinleştiren bir süreç olarak ekonomik küreselleşme. *Ankara Üniversitesi Dil ve Tarih Coğrafya Fakültesi Dergisi, 44* (1), 135-148.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). London: Sage Publications.

Polat, S. (2015). Eğitim politikalarının sosyal adalet açısından sonuçları konusunda yönetici ve öğretmen görüşleri. *Eğitim Bilim Toplum, 13* (49), 61-83.

Reynolds, R. & Brown, J. (2010). Social justice and school linkages in teacher education programmes. *European Journal of Teacher Education, 33* (4), 405-419.

Sapancalı, F. (2001). Yeni dünya düzeni ve küresel yoksulluk. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 3* (2), 115-140.

Simic-Muller, K. (2015). Mathematizing perceptions: preservice teachers' use of mathematics to ınvestigate their relationship with the community. *Journal of Research in Mathematics Education, 4* (1), 30-51.

Skowmose, O. & Nielsen, L. (1996). Critical mathematics education. in A. J. Bishop, K. Clements, C. Keitel, J. Kilpatrick & C. Laborde (Eds.) *International handbook of mathematics education – part 2*. (pp. 1250-1288). Dordrecht: Kluwer Academic Publishers.

Spielman, L. J. (2008). Equity in mathematics education: unions and intersections of feminist and social justice literature. *ZDM Mathematics Education, 40,* 647-657. Retrieved December 18, 2013 from Springer Link database.

The Elementary Teachers' Federation of Ontario (2011). *Social justice begins with me.* Toronto: ETFO FEEO.

Tomul, E. (2009). İlköğretim okullarındaki sosyal adalet uygulamalarına ilişkin yönetici görüşleri. *Eğitim ve Bilim, 34* (152), 126-137.

Turkish Language Association (2005). *Türkçe Sözlük*, (10. bs). Ankara: Türk Dil Kurumu Yayınları.

UNICEF (2012). *Empowering women: empowering children – a middle and high school unit an introduction to gender equality.* New York: UNICEF Education Department. Retrieved June 29, 2015 from http://teachunicef.org/sites/default/files/sites/default/files/units/gender_equality_an_introduction_new_-_6_8_9_12.pdf

Wade, R. C. (2007). *Social justice for social justice – teaching strategies for the elementary classroom.* (1st ed). New York: Teachers College Press.

Weber, R. P. (1990). *Basic content analysis,* (2nd ed.) California: Sage Publications.

Yıldırım, F. (2011). Üniversite gençliği "sosyal adalet"ten ne anlıyor? Sosyal adalet ilkelerinin sosyal adalet üzerindeki etkisi. *Aile ve Toplum, 12* (7), 113-124.

Determining environmental literacy levels of short cycle students receiving environmental education and studying them in terms of some variables

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Abstract

Environmentally literate individuals are needed to prevent environmental problems and to leave a livable world. It was aimed to study environmental literacy levels of associate degree students having received environmental education and to evaluate in terms of some variables. With this aim, environmental literacy scale was applied to 156 senior students studying at the departments of Private Security and Guarding, Real Estate Management, Computer Technologies and Computer Programming of Mustafa Kemal University, Antakya Vocational College. All of the students had receieved environmental education. The environmental literacy scale which was developed by Kışoğlu (2009) consists of personal information form, "knowledge", "attitude", "behaviour" and "perception" components. According to this research which employed general screening model, environmental literacy levels of associate degree students having received environmental education were found high. In accordance with this result, it can be said that environmental education that the students received contributed to their environmental literacy levels. On the other hand, it was concluded that variables of gender, age, level of income and inhabited dwelling units were not effective on environmental literacy level of the students.

Keywords: Environmental education, environmental literacy, associate degree students.

Introduction

Environment is one of the most important elements taking place in human life with living and non-living elements. Nature of which human is a member is on an excellent balance, or at least it should be. It depends on this balance to look at the future with hope and to leave a liveable world to the next generation.

Additionally, environment which has chain relationship has started to get worse and some environmental problems have appeared with destroy of the natural balance caused by human sources. Life of human being is based upon a balance mechanism. Balance of the human being with his nature is like rings of a chain. Any problems occurring within natural balance will not only affect the area where the problem appears, but it will also negatively affect natural balance which represents all rings of the chain (Yıldız, Sipahioğlu & Yılmaz, 2000: 92).

For solving a problem, first it should be comprehended and reasons of this problem should be eliminated. This solution is valid for all problems including environmental problems. It is not so possible to solve environmental problems with perspective of "shallow ecologists" who considers environmental problems just as a technical problem. Solving environmental problems depends on a profound environmental education that reviews the relation between human and nature, reconciles human and nature, depends on science and technology and where everybody takes part in solvement of the problems (İleri, 1998: 3).

Environmental education should not only be conveying information and creating environmental awareness, but it should also affect human behaviour. If a person who has a lot of knowledge about environment does not spend any efforts about reducing waste matters

harmful for the environment, does not pay attention to the possible harms of the products, does not warn people who give harm to the environment, and does not behave responsibly for saving the environment, it can not be told that this person is environmentally literate (Erten, 2004: 74). In this regard, positive attitude and knowledge individuals have should be transferred into behaviour.

Environmental education has aims on cognitive and affective areas. However, the most important goal is to raise environmentally literate individuals. Roth (1992: 18) described environmental literacy as active efforts of an individual for keeping the qualified balance of motivation, life and environment and as making researches for finding solutions to environmental problems.

It has been discussed how effective environmental education which is an elective course or is included in units of some courses is. That is why effects of environmental education on environmental literacy levels of the students have been issue of concern. From this point of view, determination of environmental literacy levels of the students having received was regarded as a problem. Environmental literacy levels of associate degree students with whom no study was conducted were determined and studied in terms of certain variables.

Aim of The Study

Aim of this study was to identify environmental literacy levels of short cycle students receiving environmental education and to study in view of different variables. With this main goal;

1. Environmental literacy levels of short cycle students,
2. The situation if their environmental literacy levels were different in view of
    a. Their gender,
    b. Their age,
    c. Their families' monthly income,
    d. Dwelling units where they lived were determined.

Method

In this section information about model of the research, population and sample, data collection tools and data analysis was presented.

Model of The Research

Survey model was used in the study. Survey research is a kind of study which aims to collect data in order to define certain characteristics of a group (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2009: 16). General screening model was applied in the research. Karasar (2009: 79) defines general screening model as "screening arrangements conducted on the whole population or sample taken from the population in a population which consists of numerous elements in order to reach a general conclusion about the population".

Population and Sample

Population of the study consisted of the students studying at Mustafa Kemal University Antakya Vocational College during 2014-2015 academic year. Sample of the study consisted of 156 second grade students studying at the departments of Private Security and Guarding, Real Estate Management, Computer Technologies, Computer Programming and receiving environmental education. Purposive sampling selection method among improbable sampling selection methods was used while determining the sample. The researcher applies his own

decision about the people to be selected and selects the most appropriate ones related to the aim of the research (Balcı, 2005: 43).

Data Collection Tools

As a result of the literature review, environmental literacy scale developed by Kışoğlu (2009) was employed with permission. This scale which was developed to determine environmental literacy levels of the students consists of personal information form for demographical information (gender, age, etc.) and sub dimensions of "knowledge", "attitude", "behaviour" and "perception" which are sub dimensions of environmental literacy.

Sub dimension of environmental knowledge

There are 20 multiple choice items prepared for gauging knowledge levels of the students related to environment or environmental problems in "knowledge" sub dimension of environmental literacy scale developed by Kışoğlu (2009). Test items have four choices and each item is valued 1 point. Pre-application was conducted on 103 associate degree students, and Cronbach's Alpha reliability coefficient was found as (α) .72.

Sub dimension of environmental attitude

There are 18 attitude statements, 14 positive and 4 negative items, in "attitude" sub dimension of the scale developed for determining attitude of the students towards environment. Pre-application was conducted on 103 associate degree students, and Cronbach's Alpha reliability coefficient was found as (α) .80.

Sub dimension of environmental behaviour

There are 20 attitude statements in "behaviour" sub dimension of the scale developed for determining how often the students behave sensitively to the environment. The three-point Likert scale consists of 20 questions. Pre-application was conducted on 103 associate degree students, and Cronbach's Alpha reliability coefficient was found as (α) .82.

Sub dimension of environmental perception

Perception sub dimension of environmental literacy scale was prepared for students' assessing themselves by giving scores about their interest in environment and environmental problems. There are three evaluation sentences in the scale which was graded from 1 to 5. Pre-application was conducted on 103 associate degree students, and Cronbach's Alpha reliability coefficient was found as (α) .81.

Data Analysis

A model developed by Mcbeth, Hungerford, Marcinkowski, Volk & Meyers (2008) was applied in order to determine environmental literacy levels of associate degree students (as cited in Karatekin, 2011). Standardized score intervals of associate degree students in all scales in accordance with this method are illustrated in Table 1.

Table 1

Data Needed for Determining Environmental Literacy Levels of Associate Degree Students

Sub-Components of Environmental Literacy Scale	Score Intervals			Number of Items	Multiplier	Max. Score
	Low	Mediocre	High			
Knowledge	0-20	21-40	41-60	20	3	60
Attitude	18-42	43-66	67-90	18	5	90
Behaviour	20-33	34-46	47-60	20	3	60
Perception	3-7	8-11	12-15	3	5	15

Total	41-102	103-163	164-225	61	-	225

As understood from the Table 1, multiplier value should be 3 for getting 60 points from environmental knowledge test, it should be 5 to get 90 points from attitude scale, it should be 3 for getting 60 points from behaviour scale and it should be 5 for getting 15 points from perception scale. According to the standirdized scores the highest environmental literacy level was found as 225, and the lowest score was found as 41. Environmental literacy level was divided into three categories as low-mediocre-high. According to this, the scores between 41-102 showed low level, between 103-163 showed mediocre level and between 164-225 showed high level of environmental literacy.

Frequency, percentage, mean and standard deviation values in all sub components of the scale were analyzed to find associate degree students' having environmental literacy levels. Furthermore, independent samples t-test was used to determine if there was significant difference of associate degree students' having sub components of environmental literacy in terms of gender and age. Additionally, one-way ANOVA was used to find if there was significant difference in terms of income level and dwelling unit inhabited.

Results

In this section, findings obtained as a result of analysis of data in the research and their interpretation were mentioned.

Results Related to Determination of Associate Degree Students' Environmental Literacy Levels and Their Interpretation

A model developed by Mcbeth, Hungerford, Marcinkowski, Volk & Meyers (2008) was applied in order to determine environmental literacy levels of associate degree students (as cited in Karatekin, 2011). According to this model, environmental literacy levels were divided into three categories. Associate degree students' environmental literacy levels in accordance with this model are shown in Table 2.

Table 2

Environmental Literacy Levels of Associate Degree Students

Sub Components of Environmental Literacy		Low	Mediocre	High	$\overline{X}$	S
Knowledge	Interval	0-20	21-40	41-60	34.88	7.28
	f	2	119	35		
	%	1.28	76.28	22.44		
Attitude	Interval	18-42	43-66	67-90	74.38	8.06
	f	2	19	132		
	%	1.28	12.17	86.55		
Behaviour	Interval	20-33	34-46	47-60	45.57	5.89
	f	2	84	70		
	%	1.28	53.84	44.88		
Perception	Interval	3-7	8-11	12-15	12.02	1.85
	f	1	50	105		
	%	.64	32.05	67.31		
Total	Interval	41-102	103-163	164-225	168.84	14.81
	f	0	53	103		
	%	.00	33.97	66.03		

As illustrated in Table 2, scores between 0-20 were low, scores between 21-40 were mediocre and scores between 41-60 were high in environmental knowledge test. According to this, rate of the students between 0-20 score interval was 1.28% (f=2), between 21-40 score interval was 76.28% (f=119) and between 41-60 score interval was 22.44% (f=35). Mean of the total scores that the students received from environmental knowledge test was found as (X= 34,88). It can be inferred from this result that environmental knowledge levels of the associate degree students were mediocre.

Scores between 18-42 were low, scores between 43-66 were mediocre and scores between 67-90 were high in attitude scale. According to this, rate of the students between 18-42 score interval was 1.28% (f=2), between 43-66 score interval was 12.17% (f=19) and between 67-90 score interval was 86.55% (f=132). Mean of the total scores that the students received from environmental attitude scale was found (X = 74,38). It can be inferred from this result that environmental attitude levels of the associate degree students were high.

Scores between 20-33 were low, scores between 34-46 were mediocre and scores between 47-60 were high in behaviour scale. According to this, rate of the students between 20-33 score interval was 1.28% (f=2), between 34-46 score interval was 53.84% (f=84) and between 47-60 score interval was 44.88% (f=70). Mean of the total scores that the students received from environmental behaviour scale was found (X = 45,57). It can be inferred from this result that environmental behaviour levels of the associate degree students were mediocre.

Scores between 3-7 were low, scores between 8-11 were mediocre and scores between 12-15 were high in behaviour scale. According to this, rate of the students between 3-7 score interval was .64% (f=1), between 8-11 score interval was 32.05% (f=50) and between 12-15 score interval was 67.31% (f=105). Mean of the total scores that the students received from environmental perception scale was found (X =12,02). It can be inferred from this result that environmental perception levels of the associate degree students were high.

Environmental knowledge test, environmental attitude scale, environmental behaviour scale and perception scale were employed in order to reveal environmental literacy levels of associate degree students. Mean, standard deviation and level grades of the total scores that the students received from sub components of environmental literacy were determined respectively. The highest score that the students could receive from this scale was 225. According to standirdized score intervals, scores between 41-102 were low, between 103-163 were mediocre and between 164-225 were high environmental literacy level. There were no students between 41-102 score interval. The rate of the students between 103-163 score interval was 33,97% (f=53) and between 164-225 score interval was 66.03% (f=103). Mean of the total scores that the students received from four components of environmental literacy scale was found (X =168,84). It can be inferred from this result that environmental literacy levels of the associate degree students were high. It can also be claimed that environmental education that associate degree students received had positive effect on this level's being high.

Results Related to Analysis of Associate Degree Students' Environmental Literacy Levels in Terms of Gender Variable and Their Interpretation

Independent samples T-test was employed to find if gender was effective on the level of the students' having environmental literacy components. Findings obtained from data analysis are shown in Table 3.

Table 3

Independent Samples T-test Results of Environmental Literacy Levels and Their Sub Components in Terms of Gender

Sub Components Of Environmental Literacy	Gender	N	$\overline{X}$	S	sd	t	p
Knowledge	Female	68	34.23	6.93	154	-.978	.329
	Male	88	35.38	7.54			
Attitude	Female	68	74.60	9.27	154	.296	.767
	Male	88	74.21	7.05			
Behaviour	Female	68	45.92	5.64	154	.649	.517
	Male	88	45.30	6.10			
Perception	Female	68	12.32	1.47	154	1.774	.078
	Male	88	11.79	2.08			
Total	Female	68	169.14	16.14	154	.222	.824
	Male	88	168.61	13.79			

When the Table 3 is analysed, it can be seen that gender did not cause significant difference between associate degree students scores in sub components of environmental literacy which are knowledge ($t(154) = -.978$, $p > .05$), attitude ($t(154) = .296$, $p > .05$), behaviour ($t(154) = .649$, $p > .05$), perception ($t(154) = 1.774$, $p > .05$) and total scores ($t(154) = .222$, $p > .05$).

Results Related to Analysis of Associate Degree Students' Environmental Literacy Levels in Terms of Age Variable and Their Interpretation

Independent samples T-test was employed to find if age was effective on the level of the students' having environmental literacy components. Findings obtained from data analysis are shown in Table 4.

Table 4

Independent Samples T-test Results of Environmental Literacy Levels and Their Sub Components in Terms of Age

Sub Components Of Environmental Literacy	Age	N	$\overline{X}$	S	sd	t	p
Knowledge	20 and younger	76	35.09	6.42	154	.346	.730
	Over 20	80	34.68	8.05			
Attitude	20 and younger	76	74.09	8.14	154	-.440	.660
	Over 20	80	74.66	8.03			
Behaviour	20 and younger	76	46.05	5.16	154	.982	.328
	Over 20	80	45.12	6.52			
Perception	20 and younger	76	12.18	1.67	154	1.040	.300
	Over 20	80	11.87	2.01			
Total	20 and younger	76	169.36	13.89	154	.428	.669
	Over 20	80	168.35	15.71			

When the Table 4 is analysed, it can be seen that age did not cause significant difference between associate degree students scores in sub components of environmental literacy which are knowledge [$t(154) = .346$, $p > .05$], attitude [$t(154) = -.440$, $p > .05$], behaviour [$t(154) = .982$, $p > .05$], perception [$t(154) = 1.040$, $p > .05$] and total scores [$t(154) = .428$, $p > .05$].

Results Related to Analysis of Associate Degree Students' Environmental Literacy Levels in Terms of Monthly Income Level of Families Variable and Their Interpretation

One-way ANOVA was employed to find if monthly income level of the families was effective on the level of the students' having environmental literacy components. Descriptive data related to monthly income level of the families are shown in Table 5.

Table 5

Descriptive data related to monthly income level of the families variable

Sub Components Of Environmental Literacy	Group	Income	N	$\overline{X}$	S
Knowledge	1	1000 TL and under	92	34.56	7.42
	2	1001-1999	52	34.96	6.92
	3	2000 TL and over	12	37.00	8.02
Attitude	1	1000 TL and under	92	74.51	8.08
	2	1001-1999	52	74.26	8.50
	3	2000 TL and over	12	73.91	6.33
Behaviour	1	1000 TL and under	92	46.11	5.93
	2	1001-1999	52	44.57	5.89
	3	2000 TL and over	12	45.75	5.51
Perception	1	1000 TL and under	92	12.17	1.85
	2	1001-1999	52	11.73	1.85
	3	2000 TL and over	12	12.16	1.85
Total	1	1000 TL and under	92	169.31	14.43
	2	1001-1999	52	167.51	15.96
	3	2000 TL and over	12	168.84	13.14

As shown in the Table 5, means of environmental literacy and its sub components were similar in terms of monthly income level of the families. Findings of ANOVA, which was held to question existence of significant difference, are illustrated in the Table 6.

Table 6

One-Way ANOVA Findings in terms of Monthly Income Level of the Families

Environmental Comp.	Variance Source	KT	sd	KO	F	p	Difference Literacy
Knowledge	Inter-Groups	63.391	2	31.696			
	Within Groups	8166.532	153	53.376		.594	.553
	Total	8229.923	155				
Attitude	Inter-Groups	4.787	2	2.393			
	Within Groups	10086.137	153	65.922		.036	.964
	Total	10090.923	155				
Behaviour	Inter-Groups	79.450	2	39.725			
	Within Groups	5312.627	153	34.723		1.144	.321
	Total	5392.077	155				
Perception	Inter-Groups	6.783	2	3.391			
	Within Groups	527.115	153	3.445		.984	.376
	Total	533.897	155				
Total	Inter-Groups	167.468	2	83.734			
	Within Groups	33864.839	153	221.339		.378	.686
	Total	34032.308	155				

When the Table 6 is analysed, it can be seen that variable of monthly income level did not cause significant difference between associate degree students scores in sub components of environmental literacy which are knowledge F(2,153) =.594, p>.05], attitude [F(2,153) =.036, p>.05], behaviour [F(2,153) =1.144, p>.05], perception [F(2,153) =.984, p>.05] and total scores [F(2,153) =.378, p>.05].

Results Related to Analysis of Associate Degree Students' Environmental Literacy Levels in Terms of Dwelling Variable and Their Interpretation

One-way ANOVA was employed to find if dwelling inhabited was effective on the level of the students' environmental literacy levels and its components. Descriptive data related to dwelling inhabited are shown in Table 7.

Table 7

Descriptive Data Related to Dwelling Variable

Environmental Literacy Components	Group	Dwelling Units	N	$\overline{X}$	S
Knowledge	1	Village and Town	35	34.97	7.12
	2	District	86	34.53	7.59
	3	Province	35	35.65	6.77
Attitude	1	Village and Town	35	73.34	9.83
	2	District	86	74.46	7.39
	3	Province	35	75.22	7.82
Behaviour	1	Village and Town	35	45.68	5.30
	2	District	86	45.54	5.87
	3	Province	35	45.54	6.63
Perception	1	Village and Town	35	11.77	2.03
	2	District	86	12.01	1.83
	3	Province	35	12.31	1.74
Total	1	Village and Town	35	167.82	15.45
	2	District	86	168.53	14.71
	3	Province	35	170.62	14.70

As shown in the Table 7, means of environmental literacy and its sub components were similar in terms of dwelling units variable. Findings of ANOVA, which was held to question existence of significant difference, are illustrated in the Table 8.

Table 8

One-Way ANOVA Findings in terms of Dwelling Units Variable

Environmental Literacy Difference Components	Variance Source	KT	sd	KO	F	p
Knowledge	Inter-Groups	31.671	2	15.835	.296	.745
	Within Groups	8198.252	153	53.583		
	Total	8229.923	155			
Attitude	Inter-Groups	63.471	2	31.735	.484	.617
	Within Groups	10027.452	153	65.539		
	Total	10090.923	155			
Behaviour	Inter-Groups	.534	2	. 267	.008	.992
	Within Groups	5391.543	153	35.239		
	Total	5392.077	155			
Perception	Inter-Groups	5.195	2	2.597	.752	.473
	Within Groups	528.703	153	3.456		
	Total	533.897	155			

Total	Inter-Groups	155.769	2	77.885	.352	.704
	Within Groups	33876.538	153	221.415		
	Total	34032.308	155			

When the Table 8 is analysed, it can be seen that variable of dwelling units did not cause significant difference between associate degree students scores in sub components of environmental literacy which are knowledge [F(2,153) =.296, p>.05], attitude [F(2,153) =.484, p>.05], behaviour [F(2,153) =.008, p>.05], perception [F(2,153) =.752, p>.05] and total scores [F(2,153) =.352, p>.05].

Discussion, Conclusion & Implementation

In our study, environmental literacy levels of associate degree students were determined, and they were compared in terms of gender, age, monthly income status and dwelling inhabited. Firstly, means of total scores that the associate degree students received according to the answers they gave in environmental literacy scale, and it was found out that their environmental literacy levels were high. Thus, it can be inferred that environmental education that the students received affected their environmental literacy positively. Studies having revealed that environmental liteacy levels of pre-service teachers who had received environmental education were high supports our findings (Kışoğlu, 2009; Benzer, 2010).

Independent samples T-test was employed to find if gender was effective on the level of the students' having environmental literacy components, and it was found that there was no significant difference in terms of gender. Several studies having found that gender did not play a significant role in pre-service teachers' environmental literacy levels validate our study (Kışoğlu, 2009; Artun, Uzunöz & Akbaş, 2013; Koç & Karatekin, 2013; Gürbüz, Kışoğlu, Alaş & Sülün, 2011; Bilim, 2012). However, a study found that environmental literacy levels of female pre-service teachers were higher than of male students (Timur, 2011).

Independent samples T-test was employed to find if age was effective on the level of the students' having environmental literacy components, and it was found that there was no significant difference in terms of age. Some studies having found that age did not play a significant role in pre-service teachers' environmental literacy levels validate our study (Kışoğlu, 2009; Gürbüz, et al., 2011). However, there is also a study which found that environmental literacy levels of pre-service teachers over 20 were higher than the ones who were 20 years ld and younger (Altınöz, 2010).

ANOVA was employed to find if monthly income level of the families was effective on the level of the students' having environmental literacy components, and it was found that it did not have significant effect. Studies having found that monthly income levels of pre-service teachers did not play a significant role in pre-service teachers' environmental literacy levels validate our study (Altınöz, 2010; Bilim, 2012; Gürbüz et al., 2011; Karatekin & Aksoy; 2012; Kışoğlu, 2009). ANOVA was employed to find if dwelling inhabited was effective on the level of the students' environmental literacy levels, and it was reevaled that it did not have significant effect. Studies having found that dwelling units of pre-service teachers did not play a significant role in pre-service teachers' environmental literacy levels validate our study (Timur, 2011; Kışoğlu, 2009; Gürbüz & diğerleri, 2011; Karatekin, 2011; Bilim, 2012; Altınöz, 2010).

The following suggestions can be offered in accordance with the findings;

- It was found in the study that environmental literacy levels of associate degree students having received environmental education were high. That's why environmental education course should be offered as compulsory or elective to the associate's degree students.

- The findings showed that environmental literacy levels of the students having received environmental education were high. Thus, environmental education should be given compulsorily in all levels of education beginning from kindergarden.
- Researches can be carried out for determining environmental literacy levels of students in different education levels.
- There are a lot of studies in which environmental literacy levels are defined via survey model; however, number of qualitative and experimental studies is quite low. Qualitative and experimental researches can be conducted.

References

Altınöz, N. (2010). F*en bilgisi öğretmen adaylarının çevre okuryazarlık düzeyleri.* Yayımlanmamış yüksek lisans tezi. Sakarya Üniversitesi Fen Bilimleri Enstitüsü, Sakarya.

Artun, H., Uzunöz, A. & Akbaş, Y. (2013). Sosyal bilgiler öğretmen adaylarının çevre okuryazarlık düzeylerine etki eden faktörlerin değerlendirilmesi. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, *2*(34), 1-14.

Balcı, A., 2005. *Sosyal bilimlerde araştırma* (1.baskı). Ankara: Pegem Akademi Yayıncılık.

Benzer, E. (2010). *Proje tabanlı öğrenme yaklaşımıyla hazırlanan çevre eğitimi dersinin fen bilgisi öğretmen adaylarının çevre okuryazarlığına etkisi*. Yayınlanmamış doktora tezi, Marmara Üniversitesi Eğitim Bilimleri Enstitüsü, İstanbul.

Bilim, İ. (2012). S*ürdürülebilir çevre açısından eğitim fakültesi öğrencilerinin çevre okuryazarlık düzeylerinin belirlenmesi*. Yayınlanmamış yüksek lisans tezi, Afyon Kocatepe Üniversitesi, Afyon.

Büyüköztürk, Ş., Çakmak, K. E., Akgün, E. Ö., Karadeniz, Ş. & Demirel, F. (2009). *Bilimsel araştırma yöntemleri* (1.baskı). Ankara: Pegem Akademi Yayıncılık.

Erten, S. (2004). Çevre eğitimi ve çevre bilinci nedir, çevre eğitimi nasıl olmalıdır?. *Çevre ve İnsan Dergisi*, 65 (4), 70-83.

Gürbüz, H. , Kışoğlu, M., Alaş, A. & Sülün, A. (2011). Biyoloji Öğretmen Adaylarının Çevre Okuryazarlıklarının Farklı Değişkenler Açısından İncelenmesi. *e-international journal of educational research*, 2 (1), 1-14.

İleri, R. (1998). Çevre eğitimi ve katılımın sağlanması. *Ekoloji Çevre Dergisi*, *7* (28), 3-9.

Karasar, N. (2009). *Bilimsel araştırma yöntemi* (20.baskı). Ankara: Nobel Yayın Dağıtım.

Karatekin, K. (2011). S*osyal bilgiler öğretmen adaylarının çevre okuryazarlık düzeylerinin belirlenmesi*. Yayımlanmamış doktora tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Karatekin, K. & Aksoy B. (2012). Sosyal bilgiler öğretmen adaylarının çevre okuryazarlık düzeylerinin çeşitli değişkenler açısından incelenmesi. *International Periodical For The Languages, Literature and History of Turkish or Turkic*, 7 (1), 1423-1438.

Kışoğlu, M. (2009). Ö*ğrenci merkezli öğretimin öğretmen adaylarının çevre okuryazarlığı düzeyine etkisinin araştırılması.* Yayımlanmamış doktora tezi*,* Atatürk Üniversitesi Fen Bilimleri Enstitüsü, Erzurum.

Koç, H. & Karatekin, K. (2013). Coğrafya öğretmen adaylarının çevre okuryazarlık düzeylerinin çeşitli değişkenler açısından incelenmesi. *Marmara Coğrafya Dergisi*, ISSN:1303-2429, 139-174.

Roth, C.E., (1992). Environmental literacy: Its roots, evolution and directions in the 1990s.(http://files.eric.ed.gov/fulltext/ED348235.pdf.; 29.12.2014 tarihinde erişilmiştir).

Timur, S. (2011). F*en bilgisi öğretmen adaylarının çevre okuryazarlık düzeylerinin belirlenmesi*. Yayımlanmamış doktora tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Yıldız, K., Sipahioğlu, Ş. & Yılmaz, M. (2000). *Çevre bilimi* (1.baskı). Ankara: Gündüz Eğitim ve Yayıncılık.

Comparative assessment of the opinions of students, parents and teachers on performance tasks

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Abstract

The present research gathered data from students, parents and teachers on performance task as generic applications. The focus is on the differences or similarities of opinions among these three groups. The aim of this research is to collect information about performance task specific to informatory communications, resource adequacy, values gained and feelings. The sample consists of 49 teachers, 221 students and 109 students' parents. They participated from 3 primary and middle schools with low, middle and upper socio-economic levels in Adana-Turkey. Student, parent and teacher forms of parallel surveys are used as data collection instruments. Factor analysis and ANOVA techniques are applied to the data. The positive results, which are similar to the results from other studies, shows that performance task application increases the student success in terms of grades, increases their research skills, supports the development of collaboration skills, inspires their interest to the class work, supports the skill development for outside-class, motivates students and supports the communications between students and parents. Time given to complete performance task is not revealed as problematic factor in current study unlike findings from other studies. The negative results shows that difficulty level of task for students, obligatory characteristic of task for students and teachers, risk involving in developing dependency to the others, necessity of informing parents about applications by Ministry of Turkish Education, supplying adequate learning environment for task specifically in schools and home are problems with the performance task applications similar to the other studies. For effective, efficient and motivating performance task applications, recommendations are balancing the task difficulty with guidance of teachers, providing more appropriate learning environment as well as supplying sufficient resources for each specific task, organizing independently achievable task as well as collaborative task, adequately informing parents by Ministry of Education and increasing the collaboration among educators and parents. A question about “understanding of performance task applications as an instructional design variable by teachers” is revealed implicitly during research. That is an important contribution of current research to be investigated next.

Keywords: Performance task, parent involvement, school-family cooperation, constructivist approach.

Introduction

From 2005, there have been new developments in Turkish education system due to constructivist approach. Learning is possible only by active participation of students to the learning process (Hastürk and Özkan, 2015). The alternative assessment and evaluation approaches are used as scaffolds to develop reasoning skills, research skills and encourage them to be active participants in learning environments (Bal & Doğanay, 2010). Therefore teachers have to find ways to support students' active participation not only to the instructional processes but also to the evaluation phase by use of alternative evaluation techniques.

Authentic performance task supports students to combine their school learning with real world situations as well as help them to understand learning processes (Scott, 2000). Performance task is described by Ministry of National Education (MEB) as "productive working of students in which students functionalize their cognitive, psycho-motor, and affective skills such as critical thinking, creative thinking, problem solving, reading for understanding,

collaborating and communication skills" (MEB, 2009). Teachers use performance task as an assessment technique to develop opportunities in which students can reflect their knowledge, skills, understanding and ability (Bal, 2012; Marzano, Pickering and McTighe, 1993).

There have been many studies conducted in Turkey about performance task applications. For example, in the research conducted by Bal (2012) insufficient time, conditions and hand-on skills are highlighted. According to Akdağ (2009) study, incompatible selection of performance task with students' level, environmental conditions, learning goals and time constraint are the main problems. The relation between the parents' involvement with the performance task and the students' success on performance task are studied by Şeker (2009).

The research in terms of performance task real effect on success are very rare (Aktepe, 2010; 2015; Coşkun, 2007). Longitudinal studies on attitude about performance task applications are rare (Akkaş, 2011). The research on teacher qualifications regarding performance task assessment is rare (Çakan, 2004). There are many opinion surveys on performance task in related literature. In most of these survey studies, students' opinions-only (Akdağ, 2009; Bal, 2012; Kumandaş and Kutlu, 2010; Uzoğlu, Öztürk, Bülbül and Küçükaydın, 2013; Çetin and Çakan, 2010), teachers' opinions-only (Coşkun, Gelen and Kan, 2009; Dilekmen and Aydoğdu,2015; Selanik-Ay, Karadağ, Çengelci, 2008; Oğuz, 2008; Yılmaz and Benli, 2011; Çiftçi, 2010; Kütükte, 2010; Belet, 2015) and parents' opinions-only are gathered (Şeker, 2009). It is possible to find some studies in which opinions of two groups are gathered and compared (Coşkun, Gelen and Kan, 2009; Benli, 2010; Bal and Doğanay, 2012; Güvey, 2009; Güney, 2010). Moreover, most of these surveys are related to one specific science area (Adanalı, 2008; Akdağ, 2009; Bal, 2012; Bal and Doğanay, 2010; Belet and Girmen, 2007; Belet, 2015). Some experimental research involving surveys are about a specific goal or topic (Aktepe, 2010; 2015). We could not locate any research on performance task as generic-inclusive to all science and technology areas and with across grade levels.

There is a need for survey-research on performance task in which students', parents' and teachers' opinions are compared to each other. The present research gathered data on performance task as generic applications. The aim of this research is to collect information about performance task specific to informatory communications, resource adequacy, values gained and feelings. The focus is on the differences or similarities of opinions among these three groups: students, parents, and teachers. We thought that fluctuation of opinions among groups would shed light on difficulties about performance task applications.

Method

Research Design

The sampling method of this study is maksimum variation of purposeful sampling method. (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz and Demirel, 2014). Structure of survey and questions are kept as much as similar for the purpose of comparing opinions. There are three sections in surveys. First section is about demographic information of participants. The second section is about performance task. Questions are organized as likert type scale (1 very strongly disagree to 5 very strongly agree). In the third section, participants are asked to write their opinion qualitatively.

Participants

The sample consists of 49 teachers, 221 students and 109 students' parents. They participated from 3 primary and middle schools with low, middle and upper socio-economic

levels in Adana-Turkey. Student, parent and teacher forms of surveys are used as data collection instruments.

Instrument

In the development process of the survey instrument, we followed several phases. Those are sequentially: unstructured-informal interviews, semi-structured interviews, literature analysis, researchers' agreement in selection or reduction of questions, pilot study, review and application of survey. We started first with informal interviews. Then, we analyzed the literature, while keeping in mind the issues emerged during these interviews. Sufficiently informed, we have written the questions for semi-structured interviews; conducted some interviews with students, teachers and parents.

After, semi structured interviews, we have written the survey questions based on Rossett (1987, 2012) needs analysis model. Rossett's model includes the techniques of needs analysis on optimal levels of expected success, emotions and feelings, causes and solutions. In this study, we did not measure present-success level of students or compare with the optimal success. Since the main goal of the study is to compare the variety and similarity among the teachers, students and parents opinions. For this reason, questions and the structure of the survey are kept as much as possible to make comparison easier.

We hoped to explicate the possible implicit-interactional factors such as role expectancies, responsibilities, and authority issues among groups by comparing their opinions. This information might be a base for designing and developing realistic and effective applications of performance task. Survey includes the items: about the predetermining factors of informatory communications among groups; the resources adequacy supplied by MEB, school and parents; values gained by students at the end of learning process and the feelings and opinions related to the application process.

When the first draft of survey completed, the pilot is conducted with 4 teachers, 5 parents and 10 students. Modifications are made accordingly. After expert opinion, survey is edited for the full application. After gathering all data, factor analysis, descriptive analysis techniques and one-way ANOVA are used to analyze data. The first stage of data analysis was factorial analysis. For the purpose of clarity in comparison between groups, confusing statements (4th and 15th items) are not used in factorial analysis. The analysis revealed ten factor loadings. Some items (3, 4, 8, 14, 16, 17 and 30) are eliminated in 10 factors form. Some items (1, 11 and 19) are eliminated in 9 factors form. Some items (27, 34 and 35) are eliminated in 8 factors form.

The final 7 factor model consist of items with Eigen value higher than 0.55. Items of 18, 20, 21, 22, 23, 24 and 25 are loaded into a first factor. It is about the values attained by students with performance task. The second factor is about resource adequacy such as equipment, material, time etc. The factor consists of 7th, 9th, and 10th item. The third factor is about negative results and emotions related to performance task applications. The factor consists of items: 12th, 26th, 31th and 33rd. The 28th and 29th items are loaded in to the 4th factor which is related to the parents' involvement. 5th, 6th and 7th factors are related to collaboration with teachers (13 and 15), resources supplied by school (6), student freedom to select task topic (36).

Data Analysis

The factor loading are very similar to the first design purpose. However, the researchers decided to compare answers item by item and not according to subscales. Since our focus is detecting the difference in opinions among groups. There is a third section in the survey. The participants are asked to write their opinion qualitatively in this section. So whenever we found a difference among students, parents and teachers opinions, we also checked the third section to confirm the result. The ANOVA analysis is used for comparison of these groups for each item that loaded into a factor.

Results

In this section, ANOVA results are shown for each item about the opinions of students, parents, and teachers related to performance task (Table 1).

Table 1

Descriptive analysis of opinions of teacher, student and parents on performance task

		n	$\overline{X}$	SS			n	$\overline{X}$	SS
ITEM-01	Teacher	49	3.0612	1.00847	ITEM-17	Teacher	49	3.4286	1.29099
	Student	220	2.9182	1.22480		Student	220	3.0682	1.48659
	Parent	109	2.4312	1.14153		Parent	107	2.7103	1.43415
ITEM-02	Teacher	48	2.5000	.98930	ITEM-18	Teacher	49	3.0816	1.18738
	Student	221	2.8688	1.27777		Student	219	3.7352	1.31093
	Parent	109	2.7798	1.21988		Parent	108	3.5556	1.19448
ITEM-03	Teacher	49	3.7143	.84163	ITEM-19	Teacher	49	4.0000	.88976
	Student	220	3.7000	1.02079		Student	220	3.3818	1.34118
	Parent	109	3.1560	1.14806		Parent	108	3.3889	1.33839
ITEM-04	Teacher	49	3.3265	1.08758	ITEM-20	Teacher	49	3.3469	1.09070
	Student	221	3.6833	1.08256		Student	216	3.7130	1.23929
	Parent	109	3.3945	1.24736		Parent	108	3.8241	1.12598
ITEM-05	Teacher	48	3.9375	.90873	ITEM-21	Teacher	49	3.0204	1.05059
	Student	221	3.3846	1.21039		Student	219	3.4703	1.32124
	Parent	109	3.2661	1.16779		Parent	106	3.4057	1.31496
ITEM -06	Teacher	49	3.7347	.78463	ITEM-22	Teacher	49	3.1837	1.09304
	Student	220	2.6091	1.46244		Student	221	3.3756	1.20572
	Parent	109	2.6789	1.36681		Parent	108	3.5093	1.18791
ITEM-07	Teacher	48	3.2292	1.18931	ITEM-23	Teacher	49	2.9796	1.03057
	Student	220	3.9273	1.29424		Student	220	3.7136	1.16054
	Parent	109	3.7248	1.12111		Parent	108	3.3148	1.22014
ITEM-08	Teacher	49	3.1020	1.29494	ITEM-24	Teacher	49	3.2245	1.10426
	Student	221	2.3258	1.30827		Student	219	3.4521	1.21203
	Parent	108	2.6481	1.24040		Parent	108	3.5741	1.18561
ITEM-09	Teacher	49	3.0816	1.30443	ITEM-25	Teacher	48	3.3333	1.01758
	Student	221	4.0181	1.07434		Student	219	3.5114	1.24650
	Parent	109	4.0183	1.00905		Parent	108	3.6389	1.17972
ITEM-10	Teacher	49	2.8776	1.21848	ITEM-26	Teacher	49	3.0612	1.21464
	Student	221	3.7059	1.22823		Student	214	3.0187	1.28539
	Parent	109	3.6330	1.15999		Parent	108	3.0926	1.30088
ITEM-11	Teacher	49	3.3469	1.14657	ITEM-27	Teacher	48	3.1875	.95997
	Student	221	3.5566	1.29429		Student	217	3.2120	1.26610
	Parent	108	3.1944	1.40399		Parent	107	3.4206	1.23653
ITEM-12	Teacher	49	2.8367	1.23063	ITEM-28	Teacher	49	2.3061	.96186
	Student	220	2.8273	1.36398		Student	219	3.2237	1.34784
	Parent	106	2.6698	1.23998		Parent	108	3.4722	1.39061
ITEM-13	Teacher	49	3.8367	.82530	ITEM-29	Teacher	49	2.7347	1.05624

	Student	220	3.1818	1.25463		Student	219	2.9361	1.24721
	Parent	108	3.5741	1.13733		Parent	108	3.3426	1.23925
ITEM-14	Teacher	49	3.9796	.77701	ITEM-30	Teacher	49	3.8163	1.01393
	Student	221	3.4027	1.17775		Student	218	2.4174	1.50117
	Parent	108	3.0093	1.31487		Parent	108	2.2870	1.37434
ITEM-15	Teacher	49	3.2245	1.06586	ITEM-31	Teacher	49	3.4490	1.04206
	Student	220	2.9909	1.10619		Student	219	2.6575	1.38358
	Parent	108	2.8241	1.25920		Parent	104	2.7115	1.30476
ITEM-16	Teacher	49	3.1429	1.17260	ITEM-32	Teacher	49	4.2245	.74345
	Student	220	3.4818	1.18385		Student	220	3.5818	1.29546
	Parent	108	3.5463	1.21812		Parent	104	3.4904	1.24632

ANOVA result on item-1 show significant differences among groups (F (2-377)=7,69, p<.05). It is about “being informed by MEB on performance task definition-generic information”. Teachers (X=3,06), students (X=2,91) and parents (X=2,43) ratings analyzed with Scheffe test. The test showed that teachers compared to parents and students compare to parents gave higher ratings to the item.

ANOVA result on item-2 did not reveal a significant difference among groups (F (2-377)=1,79, p>.05). The item is about “parents being informed by teachers on what the performance task is and how the performance task will be done”. Teachers (X=3,06), students (X=2,87) and parents (X=2,78) rated the item similarly.

ANOVA result on item-3 shows significant differences among groups (F (2-377)=10,75, p<.05). It is about “how knowledgeable participant’s feels related to goals and how performance task is applied”. Teachers (X=3,71), students (X=3,71) and parents (X=3,16) ratings are analyzed with Scheffe test. The test showed that teachers and students compared to parents gave higher ratings to the item.

ANOVA result on item-4 shows significant differences among groups (F (2-377)=3,51, p<.05). It is about “students being informed by teachers related to goals and how performance task will be completed”. Teachers (X=3,33), students (X=3,68) and parents (X=3,39) ratings are analyzed with Scheffe test. The test showed students rated this item higher than teachers and parents.

Another significant difference found on item-5 (F (2-377)=5,80, p<.05). ANOVA result on item-5 shows significant differences among groups. It is about “students being informed by subject-teachers prior to the performance task”. Teachers (X=3,94), students (X=3,38) and parents (X=3,27) ratings are analyzed with Scheffe test. The test showed teachers rated this item higher than students and parents.

ANOVA result on item-6 shows significant differences among groups (F (2-377)=3,51, p<.05). It is about “resources given to students to complete their performance task, supplied by teachers or schools”. Teachers (X=3,73), students (X=2,60) and parents (X=2,68) ratings are analyzed with Scheffe test. The test showed students as well as parents are rated this item much lower than teachers.

Discussion, Conclusion & Implementation

Parents’ ratings are lower than teachers and students on the first item. This result shows that parents have more negative opinion about the adequacy of being informed by MEB. Indeed, lower ratings of all groups on this item directed our attention to informatory dependency and relation between MEB and parents. A similar finding is given at Sarı and Kırıoğlu (2014).The ministry may organize informatory meetings for parents. In case of lower

participation, parents may be encouraged to get more information through student's e-portfolio assessment system on web.

The fifth item is about students being informed by teachers. The responses given to fifth item by subject-teachers are higher than students and parents. However, given that parents and students also rated high on this item and other related items; we could say that the consistency among group opinions are evident. That means teachers give enough information about performance tasks. So there seem to be no problem about teachers informing students.

The sixth item is about resources supplied by the school. On that item, teachers have more positive opinions than students and parents. There is similar response rate on the item related to study environment in school for implementing performance tasks. Sarı and Kırıoğlu (2014) also mentioned this problem. On the other hand, students and parents have more positive opinion about the study environment at home comparing to the opinions of teachers. The comparable result is found on the item related to resources supplied by parents. These results show that there is some degree of disagreement between students, parents with teachers about the adequacy of learning environment as well as sufficiency of necessary resources at home and at school. Teachers seem to expect more support from parents in terms of resources and environment; while parents and students expect the same from school. Bal (2012) have also stated problem about reaching necessary resources; Akdağ (2009) stated a problem about learning environment. The issue is here the role and responsibility of school, MEB and parents in providing student with more resources and better learning environment. Keeping workshops, libraries, study rooms, computer labs open to students may partly solve this problem. However, this issue requires more work than we could imagine given the vast differences among schools.

The tenth item is about the time given to student by parents while they are doing their performance task. On this item, parents and students rated higher than teachers. The similar result is observed on the item 28th. This item is related to willingness of parents giving help to students. That means teachers are not sure if parents are willing to help students or if parent are giving enough time to student on their homework. Yılmaz and Benli (2011) stated that negative attitude of parents effect students. Sarı and Kıroğlu (2014) stated that parents do not know how to help students. As a result they end up either helping to much or not helping at all. On 29.th item, parents think that performance task increasing the communications between students and parents. This result is consistent with the study of Sarı and Kırıoğlu, (2014) and Bal (2012). However, students and teachers are somehow indecisive. Beside there are differences of opinions between groups on 6th, 7th, 8th, and 9th items. That is a sign of unsatisfactory communication between teachers and parents. The result of the item about the inadequacy of informing parents also supports this conclusion. As a result, organizing activities to increase collaboration among teachers, students and parents is necessary. Training parents about how to help students on their assignments might be plausible solution. An experimental study conducted by Akay (2012) showed that parental involvement gave rise to positive improvements in collaboration and communication between parents and students. About sufficient time to complete performance task application, all groups have positive opinions. This result is inconsistent with Yılmaz and Benli (2011) and Bal (2012).

On the item about how easy performance tasks for students to complete successfully, parents and teachers scored more positively. However students think that performance tasks are more difficult. Although all groups think positively related to teachers' guidance during applications, teachers stated more positive opinions than students and parents. Furthermore, students also scored more positive opinions than parents. In this case, informing parents about applications becomes more important. There is not openly stated worry about accomplishing

performance task by students, however, we could still sense that it is somehow present. More elaborate guidance by teachers may decrease students' worries and orient them toward more productive work. Better designed task in terms of authenticity, complexity, student level and adequacy of resources and in terms of appropriate instructional strategies could help to solve this problem. That in turn is an issue of teacher skills and knowledge about performance task applications.

All groups scored positively on the 16th item about having help from peers when it is needed. 24th item about collaborative work skill as team also is scored similarly. This finding is consistent with Aktepe (2010). However 23rd item related to independent study skill, students stated more positive opinions than teachers and parents. The main point to be considered is that teachers did not state positive opinions on this item. Teachers, however, stated that it seems easier for student to make someone else do their homework instead of themselves on the 30rd item. Teachers also stated that students always need someone else help when performing a task, on the 31th item. On this item parents and students seem to be indecisive. Acar and Anıl (2009), Belet and Girmen (2007), Kutlu, Doğan and Karakaya (2010), Sarı and Kırıoğlu (2014), also mentioned about the dependency of students to their parents or over involvement of parents. Belet and Sağlam (2015), Dilekmen and Aydoğdu (2015), and Yılmaz and Benli (2011) stated that students are doing their task without much effort; parents are doing the task most of the time. Esen and Güneş (2012) also acknowledge over and misuse of internet by students. As a result we could mention that performance task seem to support collaborative skills; however, it is unsuccessful in supporting the development of independent work skills. Beside there might be a risk for developing dependency to others. Benli (2010) also mentions about that risk. To decrease the risk, collaborative and independent work should be balanced in performance task.

The responses given to the 20, 21, 22, and 27th items related to attributed value of performance tasks, all groups scored positively and similarly. All believe that performance tasks support students in developing research skills, knowledge and skills related to outside life, also increase their attention and motivation. These results are consistent with Bal (2012), Coşkun, Gelen and Kan (2009), Saban and Şeker (2010), Uzunoğlu et al (2013), Yılmaz and Benli (2011), Coşkun et al (2009), Sarı and Kırıoğlu (2014).

Parents, students and teachers think alike about performance task effect on increasing success. Students have more positive opinion than their teacher. However when they are asked about increasing their grades through performance task, teachers have scored higher than parents and students. On the 17th item, teachers stated that they give performance task assignments due to mandatory program. Students also state that they do performance task because they have to do. Parents are indecisive on this item. This result shows that teachers and students believe the positive contributions; however they use it for mandatory reasons and not because its' positive contributions. Öztürk (2010) found a positive relation between academic success and success on performance task; however, Coşkun (2007) could not replicate the result on experimental study. This result is not surprising if parents are helping too much or students are misusing internet with ready-done assignments.

In sum: There are positive findings. The performance tasks increase students' research skills, inspire their interest to the class work, support skill development for outside-class and motivate students.

It is necessary to inform parents about the aims and applications of performance tasks not only by teachers but also by schools and MEB. Parents might be encouraged to participate in collaborative manner. Although participant signifies the positive, additive effect of

performance task applications on increasing students' success and grades; both, teachers and students see performance task as an obligatory aspect of an instructional programme. That view indicates a main problem in performance applications.

All groups agreed that performance tasks increase the collaboration skills of students. However, teachers stated that the students continually need help from others during the implementation of performance task. The implicit questions are those "Is there any risk?" "Does the performance task have a negative effect on student being dependent on others?"… To avoid that risk, the balance between the collaborative and independent load in a performance task has to be considered by instructional designers and teachers. Another problem was about supplying enough resources and appropriate learning environment. How well we are doing with this new-constructivist approach to teaching and learning requires a sincere answer through more research results. Some studies state that teachers do not have enough training on alternative evaluation approaches (Çakan, 2004; Doğan, 2005; Duban and Küçükyılmaz, 2008; Gelbal and Kelecioglu, 2007). Benli (2010), Güvey (2009) and Sarı and Kırıoğlu (2014) suggested that teachers must be given additional training on performance task. Teachers have positive opinions about performance task, but they stated their knowledge is insufficient and theoretical and they need training (Tanrıverdi, 2012).

Moreover, a question emerged during this research might be an important contribution if investigated further. "Does teachers have adequate understanding of performance task? Do they know how it is designed based on various context, how it is embedded into instruction or how one task is combined with others? etc." The researchers believe the value of answering these questions and encourage the other researchers to investigate urgently in Turkish population. Training teachers as well as parents and students is advisable.

References

Acar, M. & Anıl, D. (2009). Sınıf öğretmenlerinin performans değerlendirme sürecindeki değerlendirme yöntemlerini kullanabilme yeterlikleri, karşılaştıkları sorunlar ve çözüm önerileri. *TÜBAV Bilim Dergisi, 2*, 354-363.

Adanalı, K. (2008) *Sosyal bilgiler eğitiminde alternatif değerlendirme: 5. sınıf sosyal bilgiler eğitiminin alternatif değerlendirme etkinlikleri açısından değerlendirilmesi*. Unpublished Master's Thesis, Çukurova University, Adana.

Akay, Y. (2012). Aile katılımlı performans görevlerinin ilköğretim 5. Sınıf öğrencilerinin matematik dersi erişi ve tutumlarına etkisi. *Unpublished Master's Thesis*. İzmir: Dokuz Eylül Üniversitesi.

Akdağ, H., (2009), İlköğretim 6. ve 7. Sınıf sosyal bilgiler öğretim programının öğrenci görüşlerine göre değerlendirilmesi (Konya İli Örneği). *S.Ü. Sosyal Bilimler Enstitüsü Dergisi,* 1-13.

Akkaş, E. (2011) İlköğretim Öğrencilerin Performans Ödevlerine İlişkin Tutumları Üzerine Boylamsal Tarama Araştırması, 20. Ulusal Eğitim Bilimleri Kurultayı, Burdur, 8-10 Eylül 2011, s. 64-65 Mehmet Akif Ersoy Üniversitesi.

Aktepe, V. (2010). İlköğretim 4. sınıf sosyal bilgiler dersinde "yardımseverlik" değerinin etkinlik temelli öğretimi ve öğrencilerin tutumlarına etkisi. Unpublished PhD Thesis. Gazi Üniversitesi, Ankara.

Aktepe, V. (2015). A performance task implementation to improve the responsibility value of 5th graders. *K. Ü. Kastamonu Eğitim Dergisi 23* (4), 1507-1530.

Bal, A. P. & Doğanay, A. (2010). Matematik öğretiminde öğretmen ve öğrencilerin alternatif ölçme ve değerlendirmeyi algılamaları. *İlköğretim Online, 9*(3), 851-874.

Bal, A. P. (2012). İlköğretim öğrencilerinin matematik dersi performans görevi hazırlama sürecine ilişkin görüşleri ve yaşadıkları sorunlar. *Pegem Eğitim ve Öğretim Dergisi, 2*(1), 1-23.

Belet, A. P. and Sağlam, F. (2015). Türkçe dersinde kullanılan ölçme-değerlendirme yöntem ve tekniklerinin sınıf öğretmenlerine göre değerlendirilmesi. *Anadolu Journal of Educational Sciences International, 5*(1) 115-145.

Belet, D. & Girmen, P. (2007). "Türkçe dersinde kullanılan performans ödevlerinin etkililiği". 16. Ulusal Eğitim Bilimleri Kongresi, 5–7 Eylül 2007, Gaziosmanpaşa Üniversitesi. http://home.anadolu.edu.tr/~sdbelet/yayinlar/performans_odevi.pdf adresinden 23.05.2010 tarihinde alınmıştır.

Benli, N. (2010). *İlköğretim I. kademede verilen performans görevlerinin öğretmen ve veli görüşleri açsından değerlendirilmesi*. Unpublished Master's Thesis, Mustafa Kemal Üniversitesi, Hatay.

Çakan, M. (2004). Öğretmenlerin ölçme-değerlendirme uygulamaları ve yeterlik düzeyleri: ilk ve ortaöğretim. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, 37*, 99-114.

Çetin, M. O. & Çakan, M. (2010). Fen ve teknoloji dersi başarılarının farklı yaklaşımlarla ölçülmesi ve bu yaklaşımlara ilişkin öğrenci görüşleri. *Eğitimde ve Psikolojide Ölçme ve Değerlendirme Dergisi, 1*(2), 93-99.

Çiftçi, S. (2010). İlköğretim birinci kademe 4. ve 5. Sınıf öğretmenlerinin performans görevlerine ilişkin görüşleri. *İlköğretim Online, 9*(2), 934-951.

Coşkun, E., Gelen, İ. & Kan, M.O. (2009). Türkçe derslerindeki performans ödevleri konusunda öğretmen ve öğrenci görüşlerinin değerlendirilmesi. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 6*(11), 22-55.

Coşkun, G. (2007). Performansa dayalı durum belirlemenin öğrencilerin matematik dersindeki özyeterlik algısına, tutumuna ve başarısına etkisi. *Unpublished Master's Thesis*. Ankara: Hacettepe Üniversitesi.

Dilekmen, M. & Aydoğdu, F. (2015). Sınıf öğretmenlerinin performans görevlerine ilişkin algılarının değerlendirilmesi. *Erzincan Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 8*(1), 51-62.

Doğanay, A. (2009). *Değerler eğitimi. hayat bilgisi ve sosyal bilgiler öğretimi: Yapılandırmacı bir yaklaşım* (Ed. C. Öztürk). Ankara: Pegem A Yayınları.

Esen, O. & Güneş, G. (2012). İlköğretim matematik öğretmenlerinin proje ve performans görevlerine ilişkin görüşleri. *Turkish Journal of Computer and Mathematics Education, 3*(2), 115-130.

Gelbal, S. & Kelecioğlu, H. (2007). Öğretmenlerin ölçme ve değerlendirme yöntemleri hakkındaki yeterlikleri ve karşılaştıkları sorunlar. *Uluslararası Öğretmen Yetiştirme Politikaları ve Sorunları Sempozyumu*, 12-14 Mayıs, Bakü.

Güney, Z. (2010). *İlköğretim 4-5. Sınıflarda verilen performans ve proje ödevleriyle ilgili öğretmen ve veli görüşler*i. Unpublished Master's Thesis, Pamukkale Üniversitesi, Denizli.

Güvey, E. (2009). *İlköğretim 1-5. Sınıf öğretim programlarında yer alan proje ve performans görevlerine ilişkin öğretmen ve veli görüşleri.* Unpublished Master's Thesis, Osmangazi Üniversitesi, Eskişehir.

Hastürk, H. G. & Özkan, B. (2015). 7. sınıf öğrencilerinin fen bilimleri dersi performans görevlerine ilişkin tutumlarını etkileyen değişkenler. *International Journal of Humanities and Education, 1*(1), 122-140.

Kumandaş, H. & Kutlu, Ö. (2010). İlköğretim 5. Sınıf öğrencilerinin performans görevlerine ilişkin tutumlarını etkileyen faktörler. *İlköğretim Online, 9*(2), 714-722.

Kutlu, Ö., Doğan, C. D. & Karakaya, İ. (2010). *Öğrenci başarısının değerlendirilmesi: Performansa ve portfolyoya dayalı durum belirleme*. Ankara: Pegem A Akademi Yayıncılık.

Kütükte, Z. (2010). *İlköğretim öğretmenlerinin performans ve proje ödevlerine ilişkin algı görüş ve uygulama durumları*. Unpublished Master's Thesis, Gaziosmanpaşa Üniversitesi, Tokat.

Marzano, R.J., Pickering, D.J., & McTighe, J. (1993). Assessing student comes: Performance assessment using the dimensions of learning model. Association for Supervision and curriculum Development: Alexandria, Va.

MEB, (2009). Proje ve performans görevleri, Genelge No: 2009/37.

Oğuz, Ö. (2008). *Matematik dersi performans görevlerine ilişkin öğretmen görüşleri*. Unpublished Master's Thesis. Eskişehir Osmangazi Üniversitesi, Eskişehir.

Öztürk, P. (2010). *İlköğretim II.kademe Türkçe dersi performans görevi başarı puanları ile akademik başarı ve derse yönelik tutum arasındaki ilişkinin değerlendirilmesi*. Unpublished Master's Thesis, Karadeniz Teknik Üniversitesi, Trabzon.

Saban, İ.A. & Şeker, M. (2010).İlköğretim beşinci sınıf öğrencilerinin performans görevlerindeki başarıları ile ailelerin eğitim-öğretim çalışmalarına katılım düzeyleri arasındaki ilişkinin belirlenmesi. *Ç.Ü. Sosyal Bilimler Enstitüsü Dergisi, 19*(3), 361-390.

Sarı, F. & Kırıoğlu, K. (2014). An evaluation of elementary school performance tasks from teachers and parents' point of views. *Bayburt Üniversitesi Eğitim Fakültesi Dergisi, 9*(4), 114-131.

Scott, J. (2000). Authentic assessment tools. In R. L. Custer (Ed.), J. W. Schell, B. McAlister, J. Scott, & M. Hoepfl. Using authentic assessment in vocational education. Information Series No. 381 (pp. 33-48). Eric Document Reproduction Service No. Ed 440- 293., http://www.calpro-online.org/eric/docs/custer/custer5.pdf adresinden 21 Şubat 2013 tarihinde alınmıştır.

Şeker, M. (2009). *İlköğretim 5. sınıf öğrencilerinin performans görevlerindeki başarıları ile ailelerinin eğitim-öğretim çalışmalarına katılım düzeyleri arasındaki ilişkinin belirlenmesi*. Unpublished Master's Thesis, Çukurova Üniversitesi, Adana.

Selanik Ay, T., Karadağ, R. & Çengelci, T. (2008). "İlköğretim Birinci Basamakta Gerçekleştirilen Performans Görevlerine İlişkin Öğretmen Görüşleri". *VII. Ulusal Sınıf Öğretmenliği Eğitimi Sempozyumu Bildirileri*, 2-4 Mayıs 2008, Ankara: Nobel Yay., s. 126-130.

Tanrıverdi, T. (2012) *İlköğretim dördüncü ve beşinci sınıf öğretmen ve öğrencilerinin sosyal bilgiler dersinde performans görevine yönelik görüşleri*. Unpublished Master's Thesis, Çukurova Üniversitesi, Adana.

Uzoğlu, M., Öztürk, P., Bülbül, E. & Küçükaydın, Z. (2013). Fen ve teknoloji dersinde performans görevinin öğrencilerin akademik başarılarına etkisinin incelenmesi. *The Journal of Academic Social Science Studies International Journal of Social Science, 6* (1), 1495-1509.

Yılmaz, M. & Benli, N. (2011). İlköğretim I. kademede verilen performans görevlerinin veli görüşleri açısından değerlendirilmesi [Evaluation Performance Task Given In The First Level Of Elementary School In The Aspects of Parents' Views]. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *8*(16).

Vocational college students' evaluation of comments and thoughts on the applied learning

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Abstract

The aim of this research is to determine the vocational school students' views on applied learning by considering some demographic variables. The sample of the research constitutes 270 students studying in the vocational schools at Hakkari University in 2014-2015 school years. In this research, it has been used 'General Scanning Model' which is the one of descriptive scanning models. Validity and reliability studies of the Survey of Performance-Oriented Learning consisting of 21 items and used in this research were re-conducted and Cronbach's Alpha internal reliability coefficient was calculated as 0,82. According to the results obtained from the research, such results have been reached that the students studying in the vocational schools need applied learning so much and always prefer applied learning in education, and that there is no a significant difference of opinion between female and male students depending on gender, and there is a significant difference of opinion between the students studying in different programs.

Keywords: Applied learning, professional practice, vocational education, vocational school.

Introduction

Providing students with theoretical knowledge in education makes them knowledgeable about many subjects in many respects, on the other hand, inadequacy of applied training as practice or ignoring applied learning lead to trouble for the students who have entered upon a new career in terms of professional life. According to Göktürk, Aktaş & Göktürk (2013), the most important mission of the vocational schools helps to supply expert and qualified intermediate personnel who are needed and will contribute to the national economy. Given trainings in this context should be supported by applied courses with theoretical and scientific knowledge. Applied training should be carried out on student in the process determined by sector, not apart from it.

According to the first article of regulations about basis and procedures related to trainings, practices and internships in the workplaces of the vocational school students, the purposes are to reinforce theoretical knowledge and experiences in the period of study gained by the students studying at the vocational schools within vocational and technical education zones, to broaden skills and experiences gained through practices of laboratory and workplace, and to enable them to recognize responsibilities, relations, organization and production process, and new technologies in the workplaces (Official Gazette, 2002). As is seen in the regulations, professional practises are to reinforce the formal education and learn to apply the knowledge gained through education in professional life. In addition to that, they are to bring experience to applicants and develop a sense of responsibility. The amendments were made to Law No. 3308 on the Vocational Education Law in 1988 about doing internship in the workplace, and it is thought that this law extensively regulates internship in schools, establishments and companies thanks to these amendments (Kepenekci, 2008: 271). Laws or regulations which have been enacted or amended indicate that much more importance is attached to professional practices by day.

One of the purposes of professional practice gives the applicants self-confidence or increases their self-confidence. The aim is not just gaining experience related to their fields in trainings for professional practice, in addition to that, the aim is to train a mass of people to be thinking, searcher, self-confident, and enterprising, and to have artistic sensibility (Binici & Arı, 2004: 384). Not only do students gain experience from education for professional practice, but also attendants participating in internships, teachers, educators, instructors, and employees working at the establishment crease their knowledge levels and broaden their experiences thanks to exchanging information with one another. Advisors joining professional practice obtain new information during the practice and have an idea of various subjects through observation. They gain experience by observing problems the students encounter in professional practice, and also become more productive for the students while giving theoretical lesson about the problems the students will encounter on the basis of their own observations and experiences (Özkartal, 2014-2015a-2015b; Demiralay & Karadeniz, 2008-2010; Gökdoğan & Sarıgöz, 2012).

Professional practices make contributions to all individuals participating or within in the practice in every respect. These contributions can be related to the knowledge and practice, and so, more importance should be placed on the courses of professional practice in secondary schools and vocational schools especially preparing the qualified personnel. It must be known that the applicants gain their first professional experiences in professional practices. Moreover, professional ethics and universal moral principles related to the profession are explained to the applicants in the course of professional practice. All requirements of professional practice so important should be satisfied or supported by relevant institutions and organizations in order to supply qualified personnel who are needed.

Method

The problem sentence

At what level are the views and opinions of the vocational school students about professional practice?

The objective of the research

The objective of this research is to determine the views and opinions of the vocational school students about professional practice by considering some demographic variables (gender, class level, age, type of program, and vocational school).

The population and the sample

The population of the research constitutes all students studying in the programs at Hakkari University, and the sample of this research constitutes 492 students studying in the programs of Child Development, and of Medical Laboratory Techniques, and of Medical Promotion and Marketing in Health Services School of Vocational Education, and in the programs of Business Administration, and of Accounting and Tax Applications, and of Postal Services in Yüksekova Vocational School, and in the programs of Computer Programming, and of Construction Technician, and of Laborant and Veterinary Healthcare in Çölemerik Vocational School at Hakkari University.

The research model

The Professional Practice Scale developed by Sarıgöz (2015), has been used in this research. The answers of the students participating in the research to the scale items depending on the demographic variables were calculated by using Anova test which is an F test, t-test and one-

way variance analysis with the help of SPSS 20 statistical software package. In the research, t-test was used for binary variables, and Anova test was used when the study involves 3 or more variables. All likert questions in the scale that was used in the research were graded from positive (5) to negative (1), and from negative (1) to positive (5). According to the analyses carried out by considering this grading, t-test was used for binary variables, and Anova test was used when the study involves 3 or more variables in the research. When the analyses were made, it was paid attention to whether tests are parametric or nonparametric. When the data was interpreted, significance level of ($p<0,05$) was used, and the research data was interpreted according to this. The scale used in the research consists of five point likert type 25 items including (1) Strongly Disagree (2) Disagree, (3) Undecided, (4) Agree, and (5) Strongly Agree. Overall assessment of the scale used in the research was determined as below (Sarıgöz, et, al., 2015):

$$RO = \frac{HV - LV}{NO} = \frac{5-1}{5} = 0,8$$

RO: Range of Options

HV: The Highest Value

LV: The Lowest Value

NO: Number of Options

1.00 – 1.80: Strongly Disagree

1.81 – 2.60: Disagree

2.61 – 3.40: Undecided

3.41 – 4.20: Agree

4.21 – 5.00: Strongly Agree

In the research, 'General Screening Model', one of the descriptive methods was used. According to Karasar (2010:77), general screening model is the screening arrangements carried out on a group, sample group or a paradigm or the entire universe in order to draw conclusion about the universe composed of numerous elements.

Results

In this part of the research, demographic data about the students who participated in the research, the data obtained about the scale used in the research and the statistical findings and observations about this data are presented.

Table 1

Demographic Data About The Students Participating In The Research

VS	Type of Program	Number of Students		Gender		Class Level	
		N	%	N	%	N	%
Health Services School of Vocational Education	Child Development	86	17,48	Male=0	00,00	1st Grade =35	40,70
				Female =86	100,0	2nd Grade = 51	59,30
	Med. Lab. Techniques	34	6,91	Male =18	52,94	1st Grade =15	44,18
				Female =16	47,06	2nd Grade = 19	55,82
	Medical Promotion and Marketing	25	5,08	Male =7	28,00	1st Grade =16	64,00
				Female =18	72,00	2nd Grade = 9	36,00
Yüksekova Vocational School	Business Administration	46	9,35	Male =16	34,78	1st Grade =23	50,00
				Female =30	65,22	2nd Grade =23	50,00
	Accounting and Tax Applications	41	8,33	Male =14	34,15	1st Grade =22	53,66
				Female =27	65,85	2nd Grade =19	46,34
	Postal Services	55	11,18	Male =28	50,91	1st Grade =28	50,91
				Female =27	49,09	2nd Grade =27	49,09
Çölemerik	Computer Programming	89	18,09	Male =48	53,93	1st Grade =46	51,69
				Female =41	46,07	2nd Grade =43	48,31

Construction Technician	76	15,45	Male =76	100,0	1st Grade =29	38,16
			Female =0	00,00	2nd Grade =47	61,84
Lab. and Vet. Healthcare	40	8,13	Male =23	57,50	1st Grade =18	45,00
			Female =17	42,50	2nd Grade =22	55,00

From the data in Table 1, it was determined that from among 492 students participating in the research, 145 students are studying in Health Services School of Vocational Education, from among them studying in this school, 86 of them are studying in the program of Child Development and all of them are female, and 35 of them (% 40,70) are in the 1st grade and 51 of them (% 59,30) are in the 2nd grade, and that 34 of the students are studying in the program of Medical Laboratory Techniques, from among these students, 18 of them (% 52,94) are male and 16 of them (% 47,06) are female, and 15 of the students (% 44,18) are in the 1st grade and 19 of them (% 55,82) are in the 2nd grade, and that 25 of the students are studying in the program of Medical Promotion and Marketing, from among these students, 7 of them (% 28,00) are male and 18 of them (72,00) are female, and 16 of them (% 64,00) are in the 1st grade and 9 of them (% 36,00) are in the 2nd grade. It was determined that from among 492 students participating in the research, 142 students are studying in Yüksekova Vocational School, from among them studying in this school, 46 of them are studying in the program of Business Administration, from among these students, 16 of them (% 34,78) are male, 30 of them (% 65,22) are female, and 23 of them (% 50,00) are in the 1st grade and 23 of them (% 50,00) are in the 2nd grade, and that 41 of the students are studying in the program of Accounting and Tax Applications, from among these students, 14 of them (% 34,15) are male, 27 of them (% 65,85) are female, and 23 of the students (% 53,66) are in the 1st grade, and 19 of them (% 46,34) are in the 2nd grade, and that 55 of the students are studying in the program of Postal Services, from among these students, 28 of them (% 50,91) are male, 27 of them (% 49,09) are female, and 28 of them (% 50,91) are in the 1st grade, and 27 of them (% 49,09) are in the 2nd grade. It was determined that from among 492 students participating in the research, 205 students are studying in Çölemerik Vocational School, from among them studying in this school, 89 of them are studying in the program of Computer Programming, from among these students, 48 of them (% 53,93) are male and 41 of them (% 46,07) are female, and 46 of them (% 51,69) are in the 1st grade and 43 of them (% 48,31) are in the 2nd grade, and that 76 of the students are studying in the program of Construction Technician, from among these students, all of them are male, and 29 of the students (% 38,16) are in the 1st grade and 47 of them (% 61,84) are in the 2nd grade, and that 40 of the students are studying in the program of Laborant and Veterinary Healthcare, from among these students, 23 of them (% 57,50) are male and 17 of them (% 42,50) are female, and 18 of them (% 45,00) are in the 1st grade and 22 of them (% 55,00) are in the 2nd grade.

Table 2

T-Test Analysis Results of the Vocational School Students' Answers to the Survey of Professional Practice According to Gender Variable

Gender	**N**	$\overline{X}$	**Ss**	**Sd**	**t**	**p**
Female	262	79.62	8.36	490	.108	.914
Male	178	79.71	10.23			

p>0,05

From the answers of the vocational school students participating in the research to the Survey of Professional Practice in Table 2, it was determined that there is no a statistically significant difference (p> ,05) between female and male students in terms of their views about professional practice according to gender variable.

Table 3

T-Test Analysis Results of the Vocational School Students' Answers to the Survey of Professional Practice According to the Variable of Class Level

Class Level	N	$\overline{X}$	Ss	Sd	t	p
1st Grade	232	79.50	10.09	490	.381	.703
2nd Grade	260	79.82	8.49			

p>0,05

From the answers of the vocational school students participating in the research to the Survey of Professional Practice in Table 3, it was determined that there is no a statistically significant difference (p> ,05) between the students in the 1st grade and 2nd grade in terms of their views about professional practice according to the variable of class level.

Table 4

Anova Test Analysis Results of the Vocational School Students' Answers to the Survey of Professional Practice According to Age Variable

Gender	N	$\overline{X}$	Ss	Variance Source	Sum of Squares	Sd	Mean Square	F	p	Significant Difference (Tukey)
1) 17-19	149	80.56	9.42	Btw. Gr.	396.11	3	132.04	1.541	.203	
2) 20-22	246	78.95	9.78	Wit. Gr.	41805.56	488	85.67			
3)23-25	73	79.44	7.60	Total	42201.67	491				
4) 26 over	24	82.13	6.88							

p> 0,05

From the answers of the vocational school students participating in the research to the Survey of Professional Practice in Table 4, it can be said that there is no a statistically significant difference between the students who are between 17-19 years old, 20-22 years old, 23-25 years old, and over 26 years old according to age variable by looking at the Anova test results [$F_{(1,541)}$, $p_{(,203)}$; p> ,05].

Table 5

Anova Test Analysis Results of the Vocational School Students' Answers to the Survey of Professional Practice According to the Variable of the Type of Program

The Type of Prog.	N	X	Ss	Varia. Source	Sum of Squares	Sd	Mean Square	F	p	Sign. Differ. (Tukey)
1) CD	86	78.88	8.84	Btw. Gr.	1277.93	8	159.74	1.885	.060	
2) MLT	34	80.32	7.14	Wit. Gr.	40923.73	483	84.73			
3) MPM	25	81.00	5.02	Total	42201.66	491				
4) BA	46	80.39	7.45							8-6
5) ATA	41	78.76	7.12							
6) PS	55	75.85	13.6							
7)CP	89	80.75	9.68							
8) CT	76	81.30	9.13							
9)LVH	40	79.75	8.98							

p< 0,05

From the answers of the vocational school students participating in the research to the Survey of Professional Practice in Table 5, it can be said that there is a statistically significant difference between the students studying in the programs of Postal Services and Construction Technician in favour of the students studying in the program of Construction Technician

according to the variable of the type of program by looking at the Anova test results [$F_{(1,885)}$, $p_{(,060)}$; p< ,05].

Table 6

Anova Test Analysis Results of the Vocational School Students' Answers to the Survey of Professional Practice according to the Variable of the Vocational School

The Vocat. School	N	$\overline{X}$	Ss	Variance Source	Sum of Squares	Sd	Mean Square	F	p	Sign. Diff. (Tukey)
1) HSSVE	145	79.59	7.92	Btw. Gr.	567.93	2	283.97	3.335	.036	
2) YVS	142	78.16	10.28	Wit. Gr.	41633.74	489	85.14			3-2
3) ÇVS	205	80.76	9.32	Total	42201.67	491				

p< 0.05

From the answers of the vocational school students participating in the research to the Survey of Professional Practice in Table 6. it can be said that there is a statistically significant difference between the students studying in Yüksekova Vocational School and Çölemerik Vocational School in favour of the students studying in Çölemerik Vocational School according to the variable of the vocational school by looking at the Anova test results [$F_{(3.335)}$. $p_{(.036)}$; p< .05].

Table 7

Arithmetic Averages and Skill Levels of The Answers of Students Participating in The Research to the Survey of Professional Practice

The Items of the Survey of Professional Practice	$\overline{X}$	Skill Level
19. I felt like an employee working at establishment during professional practice.	4.16	Agree
11. Professional practice has enabled me to gain the sense of responsibility and mission.	4.11	Agree
20. I have learnt what to do from professional practice when I confront a problem.	4.08	Agree
18. I have had lots of fun during professional practice.	4.07	Agree
1. Going to the professional practice makes me happy.	4.04	Agree
9. I became happy because I discharged my responsibilities in professional practice.	4.03	Agree
17. Professional practice has provided me with the experience of cooperation.	4.02	Agree
4. I have easily comprehended the subjects related to my field in professional practice.	4.00	Agree
8. My self-confidence has increased after professional practice.	3.98	Agree
7. Professional practice has enabled me to form an opinion about my profession.	3.97	Agree
10. Every student should join professional practice.	3.96	Agree
3. I could easily reach my advisors whenever I confronted problems.	3.96	Agree
16. Professional practice has aroused my desire for or interest in my future profession.	3.95	Agree
14. Professional practice has brought the experience of using my time productively.	3.94	Agree
6. I have gained information which would be useful at work from professional practice.	3.94	Agree
2. All advisors dealt with all the students in professional practice.	3.92	Agree
12. Professional practice has improved my communication skill.	3.90	Agree
15. Professional practice has provided me to be aware of imperfect knowledge I had.	3.88	Agree
13. Professional practice has provided the experience of working in a serious establishment.	3.87	Agree
5. I applied the knowledge that I had acquired at school. in professional practice.	3.85	Agree

General Arithmetic Average: 3.98

From the arithmetic averages of the answers of the students to the Survey of Professional Practice in Table 7. it was determined that the 19th article stating *'I felt like an employee working at establishment during professional practice.'* (X=4.16). the 11th article stating

'Professional practice has enabled me to gain the sense of responsibility and mission.' (X=4.11). the 20th article stating *'I have learnt what to do from professional practice when I confront a problem.'* (X=4.08). and the 18th article stating *'I have had lots of fun during professional practice.'* (X=4.07) are the items with the highest arithmetic averages in the survey. In the light of the answers given to the survey items. it can be said that the students attach more importance to the subjects such as feeling like a part of the establishment during professional practice. gaining the sense of responsibility and awareness. overcoming problems. and doing job they love.

Moreover. from the arithmetic averages of the answers of the students to the survey items in Table 7. it was determined that the 5th article stating 'I applied the knowledge that I had acquired at school. in professional practice.' (X=3.85). the 13th article stating 'Professional practice has provided the experience of working in a serious establishment.' (X=3.87). the 15th article stating 'Professional practice has provided me to be aware of imperfect knowledge I had.' (X=3.88). and the 12th article stating 'Professional practice has improved my communication skill.' (X=3.90) are the items with the lowest arithmetic averages in the survey. In the light of the answers given to the survey items. it can be said that the students do not find the workplaces serious except governmental institutions. expect that their all incompetence will be abolished thanks to professional practice. and think that professional practice improves their communication skills. and have high expectations of professional practice about these topics.

Discussion, Conclusion & Implementation

Conclusion

In the end of the research, from the answers of the students participating in the research to the Survey of Professional Practice. it was determined that there is no a statistically significant difference between female and male students according to gender variable. In the light of the students' answers to the survey items. it can be said that female and male students have similar views and opinions about professional practice.

From the answers of the students participating in the research to the Survey of Professional Practice. it was determined that there is no a statistically significant difference between the students in the 1st grade and 2nd grade according to the variable of class level. In the light of the students' answers to the survey items. it can be said that the students in the 1st grade and 2nd grade have similar views and opinions about professional practice.

From the answers of the students participating in the research to the Survey of Professional Practice. it was determined that there is no a statistically significant difference between the students according to age variable. In the light of the students' answers to the survey items. it can be said that the students of different age ranges have similar views and opinions about the survey.

From the answers of the students participating in the research to the Survey of Professional Practice. it was concluded that there is a statistically significant difference between the students studying in the programs of Postal Services and Construction Technician in favour of the students studying in the program of Construction Technician according to the variable of the type of program.

From the answers of the students participating in the research to the Survey of Professional Practice. it was concluded that there is a statistically significant difference between the students studying in Yüksekova Vocational School and Çölemerik Vocational School in favour of

the students studying in Çölemerik Vocational School according to the variable of the vocational school.

From the arithmetic averages of the answers of the students to the Survey of Professional Practice. it was determined that the 19th article stating 'I felt like an employee working at establishment during professional practice.'. the 11th article stating 'Professional practice has enabled me to gain the sense of responsibility and mission.'. the 20th article stating 'I have learnt what to do from professional practice when I confront a problem.'. and the 18th article stating 'I have had lots of fun during professional practice.' are the items with the highest arithmetic averages in the survey. In the light of the answers given to the survey items. it can be said that the students attach more importance to the subjects such as feeling like a part of the establishment during professional practice. gaining the sense of responsibility and awareness. overcoming problems. and doing job they love.

From the arithmetic averages of the answers of the students to the survey items. it was determined that the 5th article stating 'I applied the knowledge that I had acquired at school. in professional practice.'. the 13th article stating 'Professional practice has provided the experience of working in a serious establishment.'. the 15th article stating 'Professional practice has provided me to be aware of imperfect knowledge I had.'. and the 12th article stating 'Professional practice has improved my communication skill.' are the items with the lowest arithmetic averages in the survey. In the light of the answers given to the survey items. it can be said that the students do not find the workplaces serious except governmental institutions. expect that their all incompetence will be abolished thanks to professional practice. and think that professional practice improves their communication skills. and have high expectations of professional practice about these topics.

In the light of the answers of the students to the survey items. it was determined that the general arithmetic average of the survey coincides with (Agree). namely. lower than expected (Strongly Agree). Therefore. it can be said that the students' opinions about professional practice are just under expected.

Implementation

The students participating in the research look at professional practices in different fields with different eyes. Especially the students studying at the departments offering economic benefits or job guarantee in future are highly interested in professional practice. For this reason, it should be paved the way for both secondary education schools and vocational schools and that employment opportunities should be offered them regarding their fields.

Most of the students participating in the research complain about shortness of professional practice time. Because the students supposing to know everything become aware of that they do not know some subjects when they join professional practice. This causes that they desire to join professional practice more frequently and for a longer time. Thus professional practice time should be longer in order that they greatly improve themselves.

Students' knowledge and experiences they gain from professional practice arouse their desire to success and learn. In the end of professional practice they come back to school with happiness and motivation because of entering upon a career. Since they achieve something in work life and theoretical knowledge they gain from lessons become useful. They will become highly motivated to courses in school and study efficiently.

Students go into professional practice in company with a supervisor indispensably. It is not provided basic training for the supervisors who go into professional practice in our country. In-service training should be provided to the supervisors who will join professional practice by

various agencies and institutions so that they can provide more benefit to students and feel themselves more effective.

References

Binici H. & Arı N. (2004). Mesleki ve teknik eğitimde arayışlar. *Gazi Üniversitesi Eğitim Fakültesi Dergisi. 24(*3). 383-396.

Demiralay. R. & Karadeniz. Ş. (2008). İlköğretimde yaşam boyu öğrenme için bilgi okuryazarlığı becerilerinin geliştirilmesi. *Cypriot Journal of Educational Sciences*. 6. 89-108.

Demiralay. R. & Karadeniz. Ş. (2010). Bilgi ve iletişim teknolojileri kullanımının. ilköğretim öğretmen adaylarının bilgi okuryazarlığı öz-yeterlik algılarına etkisi. *Kuram ve Uygulamada Eğitim Bilimleri.* 10(2). 819-851.

Gökdoğan. O. & Sarıgöz. O. (2012). Meslek yüksekokulu öğrencilerinin mesleki uygulama dersi ile ilgili görüşlerinin değerlendirilmesi. *Yaşam Bilimleri Dergisi.* 1(1). 1091-1100.

Göktürk. İ. E.. Aktaş. M. A. & Göktürk Ü. (2013). Sosyal bilimler meslek yüksekokullarının eğitim sürecinde; Uygulama açısından karşılaşılan sorunlar ve çözüm önerileri. Electronic Journal of Vocational Colleges. 3(4). 1-8.

Karasar. N. (2010). *Bilimsel araştırma yöntemi.* Ankara: Nobel Yayın Dağıtım.

Kepenekci. Y. K. (2008). Türkiye'de mesleki ve teknik eğitimin ulusal hukuksal dayanakları. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi.* 41(1). 269-283.

Özkartal. M. (2015a). Turkish mythology and its place in education of art*. International Journal of Turkish Education Sciences.* 3(5). 83-98.

Özkartal. Z. (2014). Carpet bussiness In Isparta (19-20th Centuries*). Elektronik Sosyal Bilimler Dergisi. 2*(1). 72-81.

Özkartal. Z. (2015b). A cultural heritage Yılankıran fountain of Isparta. *Akdeniz University Faculty of Fine Arts Journal.* 8(15). 26-36.

Resmi Gazete. (2002). Mesleki teknik eğitim bölgesi içindeki meslek yüksekokulu öğrencilerinin işyerlerindeki eğitim. uygulama ve stajlarına ilişkin esas ve usuller hakkında yönetmelik. *22 Mayıs 2002 Tarih ve 24762 Sayılı Resmi Gazete.*

Sarıgöz. O. (2015). Ortaöğretim öğrencilerinin mesleki uygulama hakkındaki görüşlerine yönelik bir çalışma. *Akademik Bakış Dergisi.* 51. 1-10.

A study towards the attitudes of the students on lifelong learning

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Abstract

The aim of this study is to determine university students' views about their lifelong learning competencies by considering some demographic variables. Stratified Sampling Model based on General Screening Model was used in the research which was carried out on the students studying in the vocational schools at Hakkari University. In this research. Lifelong Learning Attitude Scale was used in order to obtain the required data. The scale used in the research consists of three sub-dimensions that are 'the unwillingness to learn'. 'the belief in the benefit of learning activities for professional development'. and 'the awareness of individual learning abilities'. In the research, a significant difference between female and male students was found in favour of female students. it was concluded that general arithmetic average of the scale is lower than expected. On the other hand. the arithmetic average of the students' views regarding the scale's sub-dimension of 'the belief in the benefit of learning activities for professional development' is higher than expected.

Keywords: Lifelong learning, personal development, attitude, employment, second chance.

Introduction

Lifelong Learning (LLL) includes formal learning in schools. and non-formal learning. and courses providing technical training and the acquirement of technical skills. and learning leading to the acquirement of professional skills gained at work, and other skills, namely, formal and non-formal learning (Çelik, Güleç & Demirhan, 2012: 40; Özkartal. 2014-2015b; Erdamar. 2011: 220). According to Borat (2010), LLL is defined as all learning activities undertaken throughout life in order to provide personal and social development and employment, and develop individuals' knowledge, skills, competences and efficacies (Schild, 2002; Borat, 2010). The one of the most important matters emphasized by LLL which is individuals learning on their own by asking questions. For this reason, schools must bear their responsibility to gain skills (determining the problems, making decisions, solving problems etc.), values and attitudes necessary for lifelong learning (Uzunboylu & Hürsen, 2011: 127; Özkartal, 2012-2015a; Teyfur, 2009: 374; Karakuş, 2013; Demiralay & Karadeniz, 2008-2010; Erdamar, 2011: 223-224). According to Candy, Crebert & O'Leary (1994: 2), LLL is a supportive process which increases and; strengthens the knowledge, values, skills and understandings that individuals obtain throughout life, and enables to use them in real life. According to European Commission (2006), LLL means all learning activity related to personal, social, civic and employment undertaken throughout life with the aim of improving the knowledge, skills and efficacies. To Candy (2003), LLL is individuals' acquirement of all kinds of the knowledge, skills, values and qualities for life and applying them in life. According to Uzunboylu & Hürsen (2011: 125), LLL is an approach effective and remarkable in order to adapt individuals to quickly developing and changing social structure, and also, adequately obtain efficiency in their professional fields.

LLL includes learning obtained from family in early childhood period, and in pre-school education, and in all stages of formal education. And learning obtained in post-school time; in brief all learning gained by an individual throughout life. Furthermore, according to Andresen,

Boud & Cohen (1995), learning based on life and work experiences is included in LLL. In the report published by UNESCO in 1972, it is emphasized that LLL is a right for all individuals, and equal resources should be allocated to formal education and non-formal education, and it should be involved in activities that would include people of all ages. Moreover, in the report, it is emphasized that LLL as a concept should provide equal opportunity in education. and that borders should be removed in order to ensure educational opportunities for individuals with limited financial means (Torres, 2001; Kaya, 2010: 32). LLL is a learning approach which aims individuals constantly obtain new knowledge, skills and efficacies, and integrate these with their existing knowledge, skills and efficacies (Şişman, 2012: 335).

LLL approach is used for the first time as a constant national obligation and an inseparable part of citizenship regarding training for adults in a report prepared by Training Committee for Adults in the Ministry of Public Works in England in 1919 after World War I, and it was concluded in the report that opportunities for training for adults should be universal and last a lifetime (Şenyuva, 2013: 70; Gencel, 2013: 239). According to Bostan & Tabak (2013: 460), the concept of LLL was used by John Dewey. Eduard Lindeman and Basil Yeaxle in 1920s based on the understanding of an enduring dimension of daily life. In opinions Polat & Odabaş's (2008: 596), lifelong learners are individuals who can reach the information they need. and assimilate obtained knowledge into their personality structure, and put new knowledge on it in the solution of a problem requiring the use of active and continuous knowledge. To Day, an individual who is a lifelong learner should possess certain skills. These skills are to know how to manage his/her own learning, and how to motivate himself/herself, and how to adjust himself/herself to the changing world, and to have a wide strategy repertoire for effective learning and communicating with individuals, and to apply the knowledge gained, and to improve memory, and retrospective correction and enhancement (Teyfur. 2009: 373).

Method

The problem sentence

At what level are the attitudes and opinions of the students studying at the vocational schools about lifelong learning competencies?

The objective of the research

The objective of this research is to determine the attitudes of the students studying at the vocational schools about lifelong learning by considering some demographic variables (gender, class level, age, type of program, and vocational school).

The population and the sample

The population of the research constitutes all students studying in the programs at Hakkari University, and the sample of this research constitutes 509 students studying in the programs of Child Development, and of Medical Laboratory Techniques, and of Medical Promotion Marketing in Health Services School of Vocational Education, and in the programs of Business Administration, and of Accounting and Tax Applications, and of Postal Services in Yüksekova Vocational School, and in the programs of Computer Programming, and of Construction Technician, and of Laborant and Veterinary Healthcare in Çölemerik Vocational School at Hakkari University.

The research model

Lifelong Learning Attitude Scale developed by Hürsen (2011), was used in this research. The answers of the students participating in the research to the scale items depending on the

demographic variables were calculated by using Anova test which is an F test, t-test and one-way variance analysis with the help of SPSS 20 statistical software package. In the research, t-test was used for binary variables, and Anova test was used when the study involves 3 or more variables. All likert questions in the scale that was used in the research were graded from positive (5) to negative (1), and from negative (1) to positive (5). According to the analyses carried out by considering this grading, t-test was used for binary variables, and Anova test was used when the study involves 3 or more variables in the research. When the analyses were made, it was paid attention to whether tests are parametric or nonparametric. When the data was interpreted, significance level of ($p<0.05$) was used, and the research data was interpreted according to this. The scale used in the research consists of five point likert type 25 items including (1) Strongly Disagree (2) Disagree, (3) Undecided, (4) Agree, and (5) Strongly Agree. Overall assessment of the scale used in the research was determined as below (Sarıgöz, et. al.. 2015):

$$SA = \frac{EYD - EDD}{SS} = \frac{5-1}{5} = 0{,}8$$

RO: Range of Options

HV: The Highest Value

LV: The Lowest Value

NO: Number of Options

1.00 – 1.80: Strongly Disagree

1.81 – 2.60: Disagree

2.61 – 3.40: Undecided

3.41 – 4.20: Agree

4.21 – 5.00: Strongly Agree

In the research, 'General Screening Model', one of the descriptive methods was used. According to Karasar (2010:77), general screening model is the screening arrangements carried out on a group, sample group or a paradigm or the entire universe in order to draw conclusion about the universe composed of numerous elements.

Results

In this part of the study, demographic data about the students who participated in the research, the data obtained about the scale used in the research, and the statistical findings about this data are presented.

Table 1

Demographic Data about the Students Participating in the Research

VS	Type of Program	Number of Students		Gender		Class Level	
		N	%	N	%	N	%
Health Services School of Vocational Education	Child Development	90	17.68	Male =0	00.00	1st Grade =37	41.11
				Female =90	100.0	2nd Grade = 53	58.89
	Medical Laboratory Techniques	36	7.08	Male=20	55.56	1st Grade =16	45.44
				Female =16	45.44	2nd Grade = 20	55.56
	Medical Promotion Marketing	25	4.91	Male =7	28.00	1st Grade =16	64.00
				Female =18	72.00	2nd Grade = 9	36.00
Yüksekova Vocational School	Business Administration	47	9.23	Male =17	36.17	1st Grade=24	51.06
				Female =30	63.83	2nd Grade=23	48.94
	Accounting and Tax Applications	42	8.26	Male=14	33.33	1st Grade=23	54.76
				Female =28	66.67	2nd Grade=19	45.24
	Postal Services	56	11.00	Male =28	50.00	1st Grade =29	51.79
				Female =28	50.00	2nd Grade =27	48.21
Çölemerik Vocational School	Computer	93	18.27	Male =51	54.84	1st Grade =49	52.69

Programming			Female =42	45.16	2nd Grade =44	47.31
Construction Technician	78	15.32	Male =78	100.0	1st Grade =30	38.46
			Female =0	00.00	2nd Grade =48	61.54
Laborant and Veterinary Healthcare	42	8.25	Male =24	57.14	1st Grade =18	42.86
			Female =18	42.86	2nd Grade =24	57.14

From the data in Table 1 it was determined that from among 509 students participating in the research, 151 students are studying in Health Services School of Vocational Education, from among them studying in this school. 90 of them are studying in the program of Child Development and all of them are female, and 37 of them (% 41.11) are in the 1st grade and 53 of them (% 58.89) are in the 2nd grade, and that 36 of the students are studying in the program of Medical Laboratory Techniques, from among these students, 20 of them (% 55.56) are male and 16 of them (% 45.44) are female, and 16 of the students (% 45.44) are in the 1st grade and 20 of them (% 55.56) are in the 2nd grade, and that 25 of the students are studying in the program of Medical Promotion Marketing, from among these students, 7 of them (% 28.00) are male and 18 of them (72.00) are female, and 16 of them (% 64.00) are in the 1st grade and 9 of them (% 36.00) are in the 2nd grade. It was determined that from among 509 students participating in the research, 145 students are studying in Yüksekova Vocational School, from among them studying in this school, 47 of them are studying in the program of Business Administration, from among these students, 17 of them (% 36.17) are male, 30 of them (% 63.83) are female, and 24 of them (% 51.06) are in the 1st grade and 23 of them (% 48.94) are in the 2nd grade, and that 42 of the students are studying in the program of Accounting and Tax Applications, from among these students, 14 of them (% 33.33) are male, 28 of them (% 66.67) are female, and 23 of the students (% 45.24) are in the 1st grade, and 19 of them (% 45.24) are in the 2nd grade, and that 56 of the students are studying in the program of Postal Services, from among these students, 28 of them (% 50.00) are male, 28 of them (% 50.00) are female, and 29 of them (% 51.79) are in the 1st grade, and 27 of them (% 48.21) are in the 2nd grade. It was determined that from among 509 students participating in the research, 213 students are studying in Çölemerik Vocational School, from among them studying in this school, 93 of them are studying in the program of Computer Programming, from among these students, 51 of them (% 51.84) are male and 42 of them (% 45.16) are female, and 49 of them (% 52.69) are in the 1st grade and 44 of them (% 47.31) are in the 2nd grade, and that 78 of the students are studying in the program of Construction Technician, from among these students, all of them are male, and 30 of the students (% 38.46) are in the 1st grade and 48 of them (% 61.54) are in the 2nd grade, and that 42 of the students are studying in the program of Laborant and Veterinary Healthcare, from among these students, 24 of them (% 57.14) are male and 18 of them (% 42.86) are female, and 18 of them (% 42.86) are in the 1st grade and 24 of them (% 57.14) are in the 2nd grade.

Table 2

T-test Analysis Results Of The Students' Answers to The Lifelong Learning Attitude Scale (Lllas) According to Gender

Gender	N	$\overline{X}$	Ss	Sd	t	p
Female	270	77.74	9.46	507	3.471	.001
Male	239	74.67	10.51			

p< 0.05

From the answers of the students participating in the research to the Lifelong Learning Attitude Scale (LLLAS) in Table 2. it can be said that there is a statistically significant difference ($t_{(3.471)}$; $p_{(.001)}$; $p<0.05$) between female and male students in favour of female students in terms of their attitudes about lifelong learning according to gender variable by looking at the t-test results.

Table 3

T-test Analysis Results of The Students' Answers to The Lifelong Learning Attitude Scale (Lllas) According to Class Level

Class Level	N	$\overline{X}$	Ss	Sd	t	p
1) 1st Grade	242	75.98	10.83	507	.689	.491
2) 2nd Grade	267	76.59	9.35			

p> 0.05

From the answers of the students participating in the research to the Lifelong Learning Attitude Scale in Table 3, it can be said that there is no a statistically significant difference ($t_{(.689)}$; $p_{(.491)}$; $p>0.05$) between the students in the 1st grade and 2nd grade according to class level variable by looking at the t-test results.

Table 4

Anova test Analysis Results of The Students' Answers to The Lifelong Learning Attitude Scale (Lllas) According to Age Variable

Age	N	$\overline{X}$	Ss	Variance Source	Sum of Squares	Sd	Mean Square	F	p	Significant Difference (Tukey)
1) 17-19	152	76.12	10.33	Btw. Gr.	160.05	3	53.35	.524	.666	
2) 20-22	257	76.49	10.01	Wit. Gr.	51372.56	505	101.73			
3)23-25	76	75.42	10.01	Total	51532.61	508				
4) Over 26	24	78.21	9.47							

p> 0.05

From the answers of the students participating in the research to the Lifelong Learning Attitude Scale in Table 4, it can be said that there is no a statistically significant difference between the students who are between 17-19 years old, 20-22 years old, 23-25 years old, and over 26 years old according to age variable by looking at the Anova test results [$F_{(.524)}$. $p_{(.666)}$; p> .05].

Table 5
Anova Test Analysis Results of the Students' Answers to the Lifelong Learning Attitude Scale (LLLAS) According to the Variable of the Type of Program

Type of Prog.	N	X	Ss	Variance Source	Sum of Squares	Sd	Mean Square	F	p	Significant Difference (Tukey)
1) CD	90	78.10	9.40	Btw. Gr.	2326.99	8	290.87	2.956	.003	
2) MLT	36	74.53	13.90	Wit. Gr.	49205.62	500	98.41			1-8
3) MPM	25	78.80	11.90	Total	51532.61	508				4-8
4) BA	47	78.28	9.41							6-8
5) ATA	42	76.71	9.10							
6) PS	56	78.66	8.83							
7)CP	93	75.19	9.19							
8) CT	78	72.46	10.97							
9)LVH	42	76.26	8.78							

p< 0.05

From the answers of the students participating in the research to the Lifelong Learning Attitude Scale in Table 5, it can be said that there is a statistically significant difference between the students studying in the programs of Child Development, Business Administration, Postal Services, and Construction Technician in favour of the students studying in the programs of Child Development, Business Administration, and Postal Services according to the variable of the type of program by looking at the Anova test results [F(2.956). p(.003); p< .05].

Table 6
Anova Test Analysis Results of the Students' Answers to the Lifelong Learning Attitude Scale (LLLAS) According to the Variable of the Vocational School

The Vocat. Sc.	N	$\overline{X}$	Ss	Var. Sou.	Sum of Squares	Sd	Mean Squ.	F	p	Sign. Diff. (Tukey)
1) HSSVE	151	77.36	10.85	B. Gr.	1342.48	2	671.24	6.767	.001	
2) YVS	145	77.97	9.07	W. Gr.	50190.13	506	99.19			1-3
3) ÇVS	213	74.40	9.88	Total	51532.61	508				2-3

p< 0.05

From the answers of the students participating in the research to the Lifelong Learning Attitude Scale in Table 6, it can be said that there is a statistically significant difference between the students studying in *Health Services School of Vocational Education* (*HSSVE), Yüksekova Vocational School (YVS),* and *Çölemerik Vocational School (ÇVS)* in favour of the students studying in *Health Services School of Vocational Education (HSSVE),* and *Yüksekova Vocational School (YVS)* according to the variable of the vocational school by looking at the Anova test results [$F_{(6.767)}$, $p_{(.001)}$; p< .05].

Table 7

The Arithmetic Averages of the Answers of the Students Participating in the Research to the Lifelong Learning Attitude Scale

Lifelong Learning Attitude Scale Items	$\overline{X}$	Skill Level
2. It is not necessary for the individuals who are promoted in their fields of profession to participate in professional development activities.	4.24	S. Agree
9. Individuals should bear the consciousness that knowledge is constantly changing in their professional life.	4.23	S. Agree
3. Individuals do not have to follow the changes in their fields of profession after graduating.	4.21	S. Agree
4. While learning a new subject. it is wasting time trying to relate this subject with prior knowledge in terms of professional development.	4.16	Agree
6. It is not necessary to learn new things at every stage of professional life.	4.14	Agree
19. The use of technological tools such as computers and mobile phones enhances the learning in the process of accessing to information.	4.10	Agree
10. Individuals' sharing information with their colleagues in the environment while learning a new subject increases the success.	4.10	Agree
1. In the process of professional development. it is wasting time trying to learn difficult subjects.	4.09	Agree
8. Relating the knowledge with the life is important in terms of professional development.	4.08	Agree
5. It is not necessary that individuals spend time in order to reach out-of-profession knowledge.	4.07	Agree
14. While learning a new subject. individuals' relating this subject with their past experiences increases the learning.	4.05	Agree
18. It is an individual responsibility to adapt to the changes of information in the fields of profession.	3.96	Agree
11. Research skills of individuals enhance their professional development.	3.95	Agree
15. Individuals should constantly desire to learn for professional development.	3.93	Agree
12. Individuals should prepare plans for their professional development.	3.91	Agree
17. Individuals' self-motivation in the learning process is necessary for their professional developments.	3.89	Agree
7. Individuals' insufficient information in their professional fields should be ignored.	3.87	Agree
13. Individuals' participating in profession-oriented professional development activities increases professional productivity.	3.70	Agree
16. In the process of professional development. taking advantage of mass media enhances the learning process.	3.62	Agree

General Arithmetic Average: 4.02

From the arithmetic averages of the students' answers to the Lifelong Learning Attitude Scale in Table 7, it was determined that article 2 stating *'It is not necessary for the individuals who are promoted in their fields of profession to participate in professional development activities,'* (X=4.24), article 9 stating *'Individuals should bear the consciousness that knowledge is constantly changing in their professional life,'* (X=4.23), article 3 stating *'Individuals do not have to follow the changes in their fields of profession after graduating,'* (X=4.21), and article 4 stating *'While learning a new subject, it is wasting time trying to relate this subject with prior knowledge in terms of professional development,'* (X=4.16) are the items with the highest arithmetic averages in the scale. In the light of the answers of the students to the scale items, it can be stated that the students give importance to subjects such as professional development and experience in lifelong learning, constantly changing knowledge, following the latest developments related to the profession, and relating a new subject with prior knowledge.

Moreover, from the arithmetic averages of the students' answers to the scale items in Table 7, it was determined that article 16 stating *'In the process of professional development, taking advantage of mass media enhances the learning process,'* (X=3.62), article 13 stating *'Individuals' participating in profession-oriented professional development activities increases professional productivity,'* (X=3.70), article 7 stating *'Individuals' insufficient information in their professional fields should be ignored,'* (X=3.87), and article 17 stating *'Individuals' self-motivation in the learning process is necessary for their professional developments,'* (X=3.89) are the items with the lowest arithmetic averages in the scale. In the light of the answers of the students to the scale items, it can be stated that the students do not give so much importance to subjects such as the effect of mass media on learning in lifelong learning, participating in profession-oriented activities, lack of information, and self-motivation to learn.

Discussion, Conclusion & Implementation

A statistically significant difference was found between female and male students participating in the research in favour of female students. It shows that female students have higher lifelong learning tendency than male students.

A statistically significant difference was not found between the students in the 1st grade and 2nd grade and participating in the research according to class level variable. In the light of the results, it can be said that the students in the 1st grade and 2nd grade have similar attitudes about lifelong learning.

A statistically significant difference was not found between the students who are participating in the research and between 17-19 years old, 20-22 years old, 23-25 years old, and over 26 years old according to age variable. In the light of the results, it can be said that the students at different ages have similar attitudes about lifelong learning.

From the answers of the students participating in the research to the Lifelong Learning Attitude Scale, it was determined that there is a statistically significant difference between the students studying in the programs of Child Development, Business Administration, Postal Services, and Construction Technician in favour of the students studying in the programs of Child Development, Business Administration, and Postal Services according to the variable of the type of program.

From the answers of the students participating in the research to the Lifelong Learning Attitude Scale, it was concluded that there is a statistically significant difference between the students studying in Health Services School of Vocational Education (HSSVE), Yüksekova Vocational School (YVS), and Çölemerik Vocational School (ÇVS) in favour of the students studying in Health Services School of Vocational Education (HSSVE), and Yüksekova Vocational School (YVS) according to the variable of the vocational school.

From the arithmetic averages of the students' answers to the Lifelong Learning Attitude Scale, it was determined that the article 2, the article 9, the article 3, and the article 4 are the items with the highest arithmetic averages in the scale. In the light of the answers given to the scale items, it can be stated that the students give importance to subjects such as professional development and experience in lifelong learning, constantly changing knowledge, following the latest developments related to the profession, and relating a new subject with prior knowledge.

From the arithmetic averages of the students' answers to the scale items, it was determined that the article 16, the article 13, the article 7, and the article 17 are the items with the lowest arithmetic averages in the scale. In the light of the answers given to the scale items, it can be stated that the students do not give so much importance to subjects such as

the effect of mass media on learning in lifelong learning, participating in profession-oriented activities, lack of information, and self-motivation to learn.

In the light of the answers of the students to the scale items, it was determined that the general arithmetic average of the scale coincides with (Agree), namely, lower than expected (Strongly Agree). Therefore, it can be said that the students' attitudes about lifelong learning are just under expected.

Implementation

In the research, a significant difference was found in favour of female students according to gender. It should be pinpointed the reasons why male students have low lifelong learning tendency, and it should be come up with a solution.

It was determined that the students studying in some programs have low lifelong learning tendency. It should be pinpointed the reasons why the students studying in these programs have low lifelong learning tendency, and it should be come up with a solution.

The importance of the knowledge and learning should be explained to all students and it should be raised the awareness of them about lifelong learning. Activities related to professional development, personal learning and the importance of the knowledge should be conducted for students, and so, they should be encouraged to learn.

All students, teachers and academicians who have improved themselves, conducted the activity, and took part in activities about lifelong learning should be awarded the prize. It should be pinpointed the reasons why all students, teachers and academicians are unwilling for lifelong learning or to improve themselves. and all unpleasant situations should be resolved through various solution recommendations.

The curricula regarding lifelong learning or self-improvement should be revised by relevant institutions and organizations. Courses, seminars, symposiums, or in-service trainings about lifelong learning or self-improvement should be given to teachers and academicians, and incompetence of all educators in these issues should be eliminated.

References

Andresen, L., Boud, D, & Cohen, R. (1995). *Experience-based learning: Contemporary issues.* (Ed. G. Foley). Understanding Adult Education and Training, Sydney.

Avrupa Komisyonu, (2006). Recommendation of the European Parliament and of the council of on key competences for lifelong learning. http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:394:0010:0018:en:PDF Erişim Tarihi: 18.04.2015.

Borat, O, (2010). Hayat Boyu öğrenme kapsamında eğitim sektöründe beklenen gelişmeler. Millî Eğitim Bakanlığı Projeler Koordinasyon Merkezi. *Projeler Dergisi,* (2), 32-44.

Bostan, S, & Tabak, R, S. (2013). Dumlupınar Üniversitesi hemşirelik bölümü son sınıf öğrencilerinin yaşam boyu öğrenme davranışlarının belirlenmesi. *Kastamonu Eğitim Dergisi,* 21(2), 459-468.

Candy, P, C. (2003). *Lifelong learning and information literacy.* Report for U.S. National Commission on Libraries and Information Science and National Forum on Information Literacy.

Candy, P, C., Crebert, G, & O'Leary, J. (1994). *Developing lifelong learners through undergraduate education* (Commissioned Report No. 28). Canberra: National Board of Employment, Education and Training.

Çelik, S., Güleç, İ, & Demirhan, B. (2012). Yaşam Boyu Öğrenme nedir? Kapsam ve kapsamı üzerine bir değerlendirme. *Sakarya Üniversitesi, Eğitim Fakültesi Dergisi,* 2(3), 34-48.

Demiralay, R, & Karadeniz, Ş. (2008). İlköğretimde yaşam boyu öğrenme için bilgi okuryazarlığı becerilerinin geliştirilmesi. *Cypriot Journal of Educational Sciences*, 6, 89-108.

Demiralay, R, & Karadeniz, Ş, (2010). Bilgi ve iletişim teknolojileri kullanımının, ilköğretim öğretmen adaylarının bilgi okuryazarlığı öz-yeterlik algılarına etkisi. *Kuram ve Uygulamada Eğitim Bilimleri,* 10(2), 819-851.

Erdamar, G. (2011). *Eğitimde yeni yönelimler.* (Ed. Özcan Demirel). Ankara: Pegem Akademi.

Gencel, E, İ. (2013). Öğretmen adaylarının Yaşam Boyu Öğrenme yeterliklerine yönelik algıları. *Eğitim ve Bilim Dergisi,* 38(170), 237-252.

Hürsen, Ç. (2011). *Öğretmenlerin yaşam boyu öğrenme yaklaşımına yönelik görüş-tutum ve yeterlik algılarının değerlendirilmesi.* Yayımlanmamış Doktora Tezi, Yakın Doğu Üniversitesi, Lefkoşa.

Karakuş, C. (2013). Meslek yüksek okulu öğrencilerinin Yaşam boyu öğrenme yeterlikleri. *Eğitim ve Öğretim Araştırmaları Dergisi,* 2(3), 26-35.

Karasar, N. (2010). *Bilimsel araştırma yöntemi.* Ankara: Nobel Yayın Dağıtım.

Kaya, Z. (2010). *Eğitim bilimine giriş.* (Ed. Ö. Demirel & Z. Kaya). Ankara: Pegem A Yayıncılık.

Özkartal, M. (2012). Carpet narrations, animal motifs and the language of colors in Turkish epics. *Journal of Carpet Flatweaves, Fabric, Clothing and Embroderies, 4*(8), 92-102.

Özkartal, M. (2015a). Turkish mythology and its place in education of art. *International Journal of Turkish Education Sciences,* 3(5), 83-98.

Özkartal, Z. (2014). Carpet bussiness In Isparta (19-20th Centuries*). Elektronik Sosyal Bilimler Dergisi,* 2(1), 72-81.

Özkartal, Z. (2015b). A cultural heritage Yılankıran fountain of Isparta. *Akdeniz University Faculty of Fine Arts Journal,* 8(15), 26-36.

Polat, C, & Odabaş, H. (2008). Bilgi toplumunda yaşam boyu öğrenmenin anahtarı: Bilgi okuryazarlığı. *Küreselleşme, Demokratikleşme ve Türkiye Uluslararası Sempozyumu,* Akdeniz Üniversitesi, Antalya, 143–151.

Şişman, M. (2012). *Eğitim bilimine giriş.* Ankara: Pegem Akademi.

Şenyuva, E. (2013). Hemşirelikte yaşam boyu öğrenme: Algılar ve gerçekler. *Florence Nightingale Hemşirelik Dergisi,* 21(1), 69-75.

Teyfur, M. (2009). *Eğitim bilimine giriş.* Ankara: Anı Yayıncılık.

Torres, R, M. (2001). *Lifelong learning in the north, education for all in the south, international conference on lifelong learning, beijing.* www.unesco.org/education/uie/news/beijing.shtml Erişim Tarihi: 12.06.2015.

Uzunboylu, H., & Hürsen, Ç. (2011). *Öğretim ilke ve yöntemleri*. Ankara: Pegem Akademi.

Evaluation of the perceptions of students of faculty of education about adult education

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Abstract

The aim of this research is to determine the views of studentsof Faculty of Education about adult education by considering some demographic variables. The sample of the research constitutes 255 students studying at the Faculty of Education under Hakkari University in 2014-2015 school years. In this research, it was used 'General Scanning Model' which is the one of descriptive scanning models. Validity and reliability studies of the Survey of Adult Education consisting of 24 items and used in this research were re-conducted and Cronbach's Alpha internal reliability coefficient was calculated as 0.79. According to the results obtained from the research, such results have been reached that the students studying at the Faculty of Education optimistically look at adult education, and that providing training for adults will be beneficial, and adults will become happier when they feel useful.

Keywords: Adult education, lifelong learning, vocational training, faculty of education.

Introduction

Education is the main way to have competencies of accessing to information, applying and producing the knowledge. Therefore, lifelong learning has become a vital imperative for both individuals and nations (Miser, 2002, p. 56). Students and parents do not attach more importance to the period of student ship until when an individual was graduated from a secondary education school. However, when the individual was graduated from high school or university and began to work after 20 years old, the stage of taking responsibility starts and this stage brings financial and emotional difficulties. An adult individual is defined as an individual who can take responsibility, and has a sense of identity, life experiences, and a well-developed sense of self-responsibility (Duman, 1999). Adulthood is foreseen as a process including legal, biological and psychological elements. Adult education is based on psychological adulthood (Özdemir, 2003). Individuals between 18-20 years of age and over are regarded as adults in societies in general.

In order that adult individuals of a certain age continue their lives and meet basic needs of ones they are responsible for, they primarily need a work. Thus, vocational courses under the name of adult education are given for the adults of a certain age who cannot have any profession by some institutions and organizations. The first official institution was established as Public Education Department recognized by the law of The Ministry of National Education in 1926, and after a little while this unit was closed, and reconstituted with the name of Public Education Bureau in the early 1950s, Public Education Canter and Vocational Education Canter, opened in 1956, have provided the service to hundreds of thousands of adults in various places in Turkey (Yazar, 2012, p. 22).

The general purpose of adult education supported by institutions is that an individual has a profession, and financial and emotional requirements to continue his life. According to Duman (2000: 43), there are three basic purposes of adult education. The first of these purposes is to create a society composed of adults who have the level of knowledge, good manners, skill and competence the society need, and the second is to develop an understanding that overcomes

the problems preventing the survival and development of societies for adults, target group, in adult education, and that prepares them to solve these problems, and also, the third is to enable all adults to develop their own attitudes, knowledge, understandings and character is tics for the purpose of self-realization. When an adult individual has a job or a profession, he should not see himself as competent, but should constantly renew himself at every stage of his life, follow the latest developments in modern life, and be open to new ideas. Hence, an adult individual should acquire the understanding of lifelong learning.

To Coşkun and Demirel, (2012, p. 109), it is accepted in the understanding of lifelong learning gradually growing in importance for all individuals and societies that learning is not limited in respect of time and space, and that learning happens everywhere if individuals are willing to learn. Lifelong learning includes learning obtained from family in early childhood period, and in pre-school education, and at all stages of formal education, and in the period of elderly age; in brief all learning gained by an individual throughout life. Furthermore, according to Andresen, Boud and Cohen (1995), learning based on life and work experiences is included in lifelong learning.

Lifelong learning appealing to all age groups in the society, and supporting especially adult education has three basic elements in itself. These elements are continuity, creativity, and learning. Continuity; educational process starts at the first years of life and continues until death, and is that individuals gain qualifications for their interests and needs throughout all their lives. Individuals' educational futures and changes in their personalities are formed by the education had been previously received. Therefore, individuals should put their creativity on the learning process and sustain lifelong learning activities. Creativity is that individuals realize their own potentials and develop their creativity in order to adapt and adjust themselves to the change. The main objective of lifelong learning is to make individuals a part of life. Also, it is to unlock individuals' creative potentials against successful individuals in traditional schools and do an act for developing their creativity. Learning, one of the most important elements of lifelong learning, is individuals' learning on their own and by asking their own questions. Thus, schools must bear the responsibility to gain skills (determining the problems, making decisions, solving problems etc.), values and attitudes necessary for lifelong learning (Uzunboylu & Hürsen, 2011: 127; Demiralay & Karadeniz, 2008-2010; Teyfur, 2009: 374; Özkartal, 2012-2015a; Özkartal, 2014-2015b; Karakuş, 2013; Erdamar, 2011, p. 223-224).

Method

The problem sentence

At what level are the perceptions of pre-service teachers studying at the Faculty of Education about adult education?

The objective of the research

The objective of this research is to determine the perceptions of the pre-service teachers studying at the Faculty of Education about adult education by considering some demographic variables (gender, class level, age, type of department, and school graduated).

The population and the sample

The population of the research constitutes all students studying in the departments at Hakkari University, and the sample of this research constitutes 255 students studying in the departments of English Language Teaching, Primary School Teaching, German Language Teaching, Turkish Language Teaching, Religious Culture and Moral Knowledge Teaching, and Computer and Instructional Technology Teaching at the Faculty of Education under Hakkari University.

The research model

The Adult Education Scale developed by Yayla (2009), has been used in this research. The answers of the students participating in the research to the scale items depending on the demographic variables were calculated by using Anova test which is an F test, t-test and one-way variance analysis with the help of SPSS 20 statistical software package. In the research, t-test was used for binary variables, and Anova test was used when the study involves 3 or more variables. All likert questions in the scale that was used in the research were graded from positive (5) to negative (1), and from negative (1) to positive (5). According to the analyses carried out by considering this grading, t-test was used for binary variables, and Anova test was used when the study involves 3 or more variables in the research, When the analyses were made, it was paid attention to whether tests are parametric or nonparametric. When the data was interpreted, significance level of ($p<0.05$) was used, and the research data was interpreted according to this. The scale used in the research consists of five point likert type 25 items including (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree, and (5) Strongly Agree. Overall assessment of the scale used in the research was determined as below (Sarıgöz, et. al., 2015):

$$RO = \frac{HV - LV}{NO} = \frac{5-1}{5} = 0{,}8$$

RO: Range of Options

HV: The Highest Value

LV: The Lowest Value

NO: Number of Options

1.00 – 1.80: Strongly Disagree

1.81 – 2.60: Disagree

2.61 – 3.40: Undecided

3.41 – 4.20: Agree

4.21 – 5.00: Strongly Agree

In the research, 'General Screening Model', one of the descriptive screening methods was used. According to Karasar (2010: 77), general screening model is the screening arrangements carried out on a group, sample group or a paradigm or the entire universe in order to draw conclusion about the universe composed of numerous elements.

Results

In this part of the study, demographic data about the students who participated in the research, the data obtained about the scale used in the research, and the statistical findings about this data are presented.

Table 1
Demographic Data about the Students Participating in the Research

Type of Department	Number of Student		Gender		Class Level	
	N	%	N	%	N	%
English Language Teaching	40	15.69	Male =17	42.50	3rd Grade =21	52.50
			Female =23	57.50	4th Grade = 19	47.50
Primary School Teaching	45	17.65	Male =14	31.11	3rd Grade =25	55.56
			Female =31	68.89	4th Grade = 20	44.44
German Language Teaching	27	10.59	Male =15	55.56	3rd Grade =14	51.85
			Female =12	44.44	4th Grade = 13	48.15
Turkish Language Teaching	38	14.90	Male =19	50.00	3rd Grade =17	44.74
			Female =19	50.00	4th Grade =21	55.26
RCMK Teaching	77	30.19	Male =53	68.83	3rd Grade =39	50.65
			Female =24	31.17	4th Grade =38	49.35
Comp. & Instr. Tech. Teaching	28	10.98	Male =16	57.14	3rd Grade =8	28.57
			Female =12	42.86	4th Grade =20	71.43

From the demographic data about 255 students participating in the research in Table 1.40 of the students are studying in the department of English Language Teaching, 45 of them are studying in the department of Primary School Teaching, 27 of the mare studying in the department of German Language Teaching, 38 of them are studying in the department of Turkish Language Teaching, 77 of them are studying in the department of Religion Culture and Moral Knowledge Teaching, and 28 of the mare studying in the department of Computer and Instructional Technology Teaching.

Table 2
T-Test Analysis Results of the Students' Answers to the Scale of Adult Education (SAE) According to Gender

Gender	N	$\overline{X}$	Ss	Sd	t	p
Female	121	89.33	9.34	253	1.879	.061
Male	134	91.43	8.53			

p> 0.05

From the answers of the students participating in the research to the Scale of Adult Education (SAE) in Table 2, it can be said that there is no a statistically significant difference ($t_{(1.879)}$; $p_{(.061)}$; $p<0.05$) between female and male students in terms of their perceptions about adult education according to gender variable by looking at the t-test results.

Table 3
T-Test Analysis Results of the Students' Answers to the Scale of Adult Education (SAE) According to Class Level

Class Level	N	$\overline{X}$	Ss	Sd	t	p
1) 3rd Grade	124	89.45	8.72	253	1.711	.088
2) 4th Grade	131	91.37	9.13			

p> 0.05

From the answers of the students participating in the research to the Scale of Adult Education (SAE) in Table 3, it can be said that there is no a statistically significant difference ($t_{(1.711)}$; $p_{(.088)}$; $p<0.05$)between the students in the 3rd grade and 4th grade in terms of their perceptions about adult education according to class level variable by looking at the t-test results.

Table 4
Anova Test Analysis Results of the Students' Answers to the Scale of Adult Education (SAE) According to Age Variable

Age	N	$\overline{X}$	Ss	Varia. Source	Sum of Squares	Sd	Mean Square	F	p	Sign. Differ. (Tukey)
1) 17-20	40	89.48	9.16	Btw. Gr.	488.86	4	122.21	1.533	.193	
2) 21-24	143	89.96	8.51	Wit. Gr.	19935.83	250	79.74			
3)25-28	48	91.90	10.3	Total	20424.69	254				
4) 29-32	16	89.63	18.5							
5)33-over	8	96.63	6.28							

p> 0.05

From the answers of the students participating in the research to the Scale of Adult Education (SAE) in Table 4, it can be said that there is no a statistically significant difference between the students aged 17-20, 21-24, 25-28, 29-32 and 33-and over according to age variable by looking at the Anova test results [$F_{(1.533)}$, $p_{(.193)}$; p> .05].

Table 5
Anova Test Analysis Results of the Students' Answers to the Scale of Adult Education (SAE) According to the Variable of School Graduated

School Graduated	N	$\overline{X}$	Ss	Var. Source	Sum of Squares	Sd	Mean Square	F	p	Sign. Differ (Tukey)
1) Science H. Sch.	58	91.54	8.66	Btw. Gr.	98.00	3	32.67	.403	.751	
2)Vocat. H. Sch.	122	90.00	8.77	Wit. Gr.	20326.68	251	80.98			
3)Anat. H. Sch.	52	90.15	9.65	Total	20424.68	254				
4) Others	23	90.61	9.52							

p> 0.05

From the answers of the students participating in the research to the Scale of Adult Education (SAE) in Table 5, it can be said that there is no a statistically significant difference between the students graduated from Science High School, Vocational High School, Anatolian High School, and other high schools according to the variable of school graduated by looking at the Anova test results [$F_{(.403)}$, $p_{(.751)}$; p> .05].

Table 6
Anova Test Analysis Results of the Students' Answers to the Scale of Adult Education (SAE) According to the Variable of the Type of Department

Type of Department	N	$\overline{X}$	Ss	Variance Source	Sum of Squares	Sd	Mean Square	F	p	Sign. Differ. (Tukey)
1) CITT	28	90.82	8.22	Btw. Gr.	46.15	5	9.23	.113	.989	
2) RCMK T	77	90.79	8.45	Wit. Gr.	20378.53	249	81.84			
3) GLT	27	90.56	8.27	Total	20424.68	554				
4) ELT	40	89.63	11.48							
5) PST	45	90.11	9.08							
6) TLT	38	90.58	8.38							

p> 0.05

From the answers of the students participating in the research to the Scale of Adult Education (SAE) in Table 6, it can be said that there is no a statistically significant difference between the students studying in the departments of Computer and Instructional Technology Teaching. Religious Culture and Moral Knowledge Teaching, German Language Teaching, English Language Teaching, Primary School Teaching, and Turkish Language Teaching according

to the variable of the type of department by looking at the Anova test results [$F_{(.113)}$, $p_{(.989)}$; p> .05].

Table 7
Arithmetic Averages and of the Answers of the Students Who Participated in the Research to the Scale of Adult Education (SAE)

Adult Education Scale Items	$\overline{X}$	**Skill Level**
1. Physical conditions of schools offering adult education should be bettered.	4.31	Str. Agree
19. The Ministry of National Education should collaborate with universities.	4.24	Str. Agree
24. It should be benefited from other countries' educational policies in adult education.	4.22	Str. Agree
20. After the courses. the certificate should be awarded to each participant.	4.16	Agree
11. Adult education is a very serious issue.	4.06	Agree
9. Studies which will be made in the end of adult education. contribute to the national economy.	4.05	Agree
21. More research on adult education should be done.	4.04	Agree
18. The department of public education should be opened in the faculties of education.	4.02	Agree
7. It should be raised the awareness of public about adult education.	4.01	Agree
4. Adult education should be given by teachers who are expert in their fields.	3.92	Agree
8. All regulations concerning adult education should be revised.	3.92	Agree
10. Financial and social supports should be provided to individuals who complete the course.	3.88	Agree
23. Priority should be given to individuals unemployed in adult education.	3.86	Agree
2. In-service training regarding adult education should be given to all managers and teachers.	3.82	Agree
6. Managers in schools which will offer adult education should be knowledgeable about this topic.	3.81	Agree
3. All kinds of material needs should be satisfied in schools which will offer adult education.	3.69	Agree
22. All institutions offering adult education should be in communication and interaction with each other.	3.65	Agree
12. The support should be received from non-governmental organizations in adult education.	3.53	Agree
16. The number of institutions offering adult education should be increased.	3.51	Agree
13. Teachers and managers should devotedly work in adult education.	3.31	Undecided
5. Courses should be opened according to the needs in adult education.	3.30	Undecided
17. It should be concentrated on local studies in adult education.	3.23	Undecided
15. Weight should be given to adult education courses in all places of the country.	3.00	Undecided
14. The supports given to adult education by the Ministry should be increased.	2.89	Undecided

General Arithmetic Mean: 3.77

From the arithmetic averages of the answers of the students to the Scale of Adult Education (SAE) in Table 7, it was determined that the 1st article stating *'Physical conditions of schools offering adult education. should be bettered.'* (X=4.31), the 19th article stating *'The Ministry of National Education should collaborate with universities.'* (X=4.23), and the 24th article stating *'It should be benefited from other countries' educational policies in adult education.'* (X=4.22) are the items with the highest arithmetic averages in the scale. In the light of the answers given to the scale items, it can be said that the students attach more importance to the subjects such as the importance of physical conditions of schools offering adult education, working in cooperation between universities and relevant ministries in adult education, and other countries' policies on this topic and closely following all the latest developments.

Moreover, from the arithmetic averages of the answers of the students to the scale items in Table 7, it was determined that the 14th article stating *'The supports given to adult education*

by the Ministry should be increased.' (X=2.89), the 15th article stating *'Weight should be given to adult education courses in all places of the country.'* (X=3.00), and the 17th article stating *'It should be concentrated on local studies in adult education.'* (X=3.23) are the items with the lowest arithmetic averages in the scale. In the light of the answers given to the scale items, it can be said that the students do not give so much importance to subjects such as increasing the supports given to adult education by the Ministry, giving weight to adult education in all places of the country, and concentrating on local studies in adult education.

Discussion, Conclusion & Implementation

From the answers of the students participating in the research to the Scale of Adult Education, it was determined that there is no a statistically significant difference between the students in the 3rd grade and 4th grade according to class level variable. In the light of the students' answers to the scale items, it can be said that the students in the 3rd grade and 4thgrade have similar perceptions about adult education.

From the answers of the students participating in the research to the Scale of Adult Education, it was determined that there is no a statistically significant difference between the students according to age variable. In the light of the students' answers to the scale items, it can be said that the students of different age ranges have similar perceptions about adult education.

From the answers of the students participating in the research to the Scale of Adult Education, it was determined that there is no a statistically significant difference between the students graduated from different high schools according to the variable of school graduated. In the light of the students' answers to the scale items, it can be said that the students graduated from different types of schools have similar perceptions about adult education.

From the answers of the students participating in the research to the Scale of Adult Education, it was determined that there is no a statistically significant difference between the students studying in the departments of Computer and Instructional Technology Teaching, Religious Culture and Moral Knowledge Teaching, German Language Teaching, English Language Teaching, Primary School Teaching, and Turkish Language Teaching according to the variable of the type of department. In the light of the students' answers to the scale items, it can be said that the students studying in different departments have similar perceptions about adult education.

From the arithmetic averages of the answers of the students to the Scale of Adult Education (SAE), it was determined that the 1st article stating 'Physical conditions of schools offering adult education, should be bettered,' the 19th article stating 'The Ministry of National Education should collaborate with universities,' and the 24th article stating 'It should be benefited from other countries' educational policies in adult education,' are the items with the highest arithmetic averages in the scale. In the light of the answers given to the scale items, it can be said that the students attach more importance to the subjects such as the importance of physical conditions of schools offering adult education, working in cooperation between universities and relevant ministries in adult education, and other countries' policies on this topic and closely following all the latest developments.

From the arithmetic averages of the answers of the students to the scale items, it was determined that the 14th article stating 'The supports given to adult education by the Ministry should be increased.' the 15th article stating 'Weight should be given to adult education courses in all places of the country.' and the 17th article stating 'It should be concentrated on local studies in adult education.' are the items with the lowest arithmetic averages in the scale.

In the light of the answers given to the scale items, it can be said that the students do not give so much importance to subjects such as increasing the supports given to adult education by the Ministry, giving weight to adult education in all places of the country, and concentrating on local studies in adult education.

In the light of the answers of the students to the scale items, it was determined that the general arithmetic average of the scale coincides with (Agree), namely, lower than expected (Strongly Agree). Therefore, it can be said that the students' perceptions about adult education are just under expected.

Implementation

The students participating in the research have not given the expected attention to adult education, because they consider that they will have a profession in the future, and probably a job. However, adult education offers individuals who do not like their own professions an opportunity for getting a second profession in addition to providing them with occupation. All students and individuals should be informed about adult education and its purposes in this respect.

Especially individuals who are close to retirement while working, and do not want to be retired, since they do not want to have nothing to work, can set up their own businesses in spite of the retirement when they have a profession thanks to one of the institutions offering adult education. This might enable the workers who are close to retirement but not retired to retire, and the young ones to be employed.

Individuals who are working or retired, can earn income economically, and feel better psychologically when they have a new profession thanks to adult education.

All students studying at vocational schools in our country should be informed and it should be raised their awareness about that they do not just have to have a job related to the fields they are studying, and that they will have a second profession after getting trainings necessary, and practise two professions at will.

References

Andresen, L., Boud, D, & Cohen, R. (1995). *Experience-based learning: Contemporary issues.* (Ed. G. Foley). Understanding Adult Education and Training, Sydney.

Coşkun, Y, D, & Demirel, M. (2012). Üniversite öğrencilerinin Yaşam Boyu Öğrenme eğilimleri. *Hacettepe Üniversitesi, Eğitim Fakültesi Dergisi*, 42, 108-120.

Demiralay, R, & Karadeniz, Ş. (2008). İlköğretimde yaşam boyu öğrenme için bilgi okuryazarlığı becerilerinin geliştirilmesi. *Cypriot Journal of Educational Sciences*, 6, 89-108.

Demiralay, R, & Karadeniz, Ş. (2010). Bilgi ve iletişim teknolojileri kullanımının, ilköğretim öğretmen adaylarının bilgi okuryazarlığı öz-yeterlik algılarına etkisi. *Kuram ve Uygulamada Eğitim Bilimleri,* 10(2), 819-851.

Duman, A. (1999). *Yetişkinler eğitimi.* Ankara: Ütopya Yayınevi.

Duman, A. (2000). *Yetişkin eğitimi.* Ankara: Ütopya Yayınları.

Erdamar, G. (2011). *Eğitimde yeni yönelimler.* (Ed. Özcan Demirel). Ankara: Pegem Akademi.

Karakuş, C. (2013). Meslek yüksek okulu öğrencilerinin Yaşam Boyu Öğrenme yeterlikleri. *Eğitim ve Öğretim Araştırmaları Dergisi,* 2(3), 26-35.

Karasar, N. (2010). *Bilimsel araştırma yöntemi.* Ankara: Nobel Yayın Dağıtım.

Miser, R. (2002). Küreselleşen dünyada yetişkin eğitimi. *Ankara Üniversitesi Eğitim Fakültesi Dergisi,* 35(1-2), 55-60.

Özdemir, S, T. (2003). Tıp eğitimi ve yetişkin öğrenmesi. *Uludağ Üniversitesi Tıp Fakültesi Dergisi,* 29(2), 25-28.

Özkartal, M. (2012). Carpet Narrations. Animal Motifs and the Language of Colors in Turkish Epics. *Journal of Carpet Flatweaves, Fabric, Clothing and Embroderies,* 4(8): 92-102.

Özkartal, M. (2015a). Turkish Mythology and Its Place in Education of Art. *International Journal of Turkish Education Sciences,* 3(5), 83-98.

Özkartal, Z. (2014). Carpet Bussiness In Isparta (19-20th Centuries*). Elektronik Sosyal Bilimler Dergisi,* 2(1), 72-81.

Özkartal, Z. (2015b). A cultural heritage Yılankıran fountain of Isparta. *Akdeniz University Faculty of Fine Arts Journal,* 8(15), 26-36.

Sarıgöz, O., Cengiz, M, Ş, & Özkara, Y. (2014). The Evaluation of the Teachers' Views About Renewed Secondary School Education Curriculum. International Refereed Academic Social Sciences Journal, 15(5): 1-16.

Sarıgöz, O., Hacıcaferoğlu, S., Dönger, A., Cam, F, & Koca M. (2015). "Neither Employee Harassment Some Variables Levels Investigation Terms." The Journal of Academic Social Science, 3(14): 360-373.

Sarıgöz, O, & Özkara, Y. (2015). "The Critical Pedagogy and Principles About Teacher Candidates Investigation in Terms Variations of Some Opinions." The Journal of International Social Research, C/S, 8(39), 710-716.

Teyfur, M. (2009). *Eğitim bilimine giriş.* Ankara: Anı Yayıncılık.

Uzunboylu, H, & Hürsen, Ç. (2011). *Öğretim ilke ve yöntemleri*. Ankara: Pegem Akademi.

Yayla, D. (2009). Türk yetişkin eğitimi sisteminin değerlendirilmesi. http://www.meb.gov.tr/earged/earged/Yetiskin_Egitimi.pdf Erişim Tarihi: 18.05.2015.

Yazar, T. (2012). Yetişkin eğitiminde hedef kitle. *Dicle Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,* 4(7), 21-30.

An examination of the opinions of the students about lifelong learning competencies in terms of some variables

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Abstract

The aim of this research is to determine university students' views about lifelong learning competencies by considering some demographic variables. Stratified Sampling Model based on General Screening Model was used in the research which was carried out on the students studying in the vocational schools at Hakkari University. Lifelong Learning Competencies Scale was used in the research. The scale used in the research is composed of six sub-dimensions that are 'self-control competencies', 'learning-to-learn competencies', 'initiative and entrepreneurship competencies', 'acquiring knowledge competencies', 'digital competencies', and 'decision-making competencies'. The answers of the students participating in the research to the scale items depending on the demographic variables were calculated by using Anova test which is an F test, t-test and one-way variance analysis with the help of SPSS 20 statistical software package. In the research, t-test was used for binary variables, and Anova test was used when the study involves 3 or more variables. All likert questions in the scale that was used in the research are graded from positive (5) to negative (1), and from negative (1) to positive (5). According to the analyses carried out by considering this grading, t-test was used for binary variables, and Anova test was used when the study involves 3 or more variables in the research. In the result of the research, there were not found significant differences between the students in terms of their views depending on demographic variables and it was concluded that some lifelong learning competencies are known and adopted by the students but they do not know or are not aware of some competencies. Furthermore, such results have been reached in the research that the basic information of the students about lifelong learning competencies are not adequate and so courses in accordance with principles competencies and purposes of lifelong learning should be added to the curricula or the subjects in accordance with principles competencies and purposes of lifelong learning should be added to existing course content.

Keywords: Lifelong learning, lifelong education, competency, employment.

Introduction

Lifelong Learning (LLL) is an approach emerging as alternative to traditional methods. This approach bases on accessing to information and acquisition of knowledge by consciously using technology, and being aware instead of gaining information and knowledge in traditional ways. Also, LLL is an approach which aims continuing socio-cultural and professional developments of individuals. According to Toprak & Erdoğan (2012, p. 70), LLL is a fact that European societies have tried to develop mechanisms of education, and to embody professional development policies, and to build it as human resources-oriented since a half century. To Çelik, Güleç & Demirhan (2012, p. 40), LLL includes all kinds of learning activities undertaken throughout life in order to develop knowledge, skills and adults within personal, civic, social and employment-related perspectives. In opinion Şişman's (2012, p. 334), continuous increase in knowledge to be learned has led to mentioning the concept of LLL more often. Moreover, developments in the fields of science and technology, increase in communication opportunities, diversification of educational environments, and diversification of teachers' professional competencies have resulted in the acceptance of the concept of LLL.

According to Ayhan (2005, p. 10), the concept of LLL was used for the first time by John Dewey, Eduard Lindeman and Basil Yeaxle in the 1920s. Afterwards, the concept which was developed by a group of expert from UNESCO, has started to be strongly emphasized and used in the mid-1990s, and has been stated as 'learning from the cradle to the grave' (EC, 2003; Toprak & Erdoğan, 2012; Teyfur, 2009, p. 373). Different definitions of LLL have been made. Some of them are; According to Erdamar (2011, p. 220), LLL is to understand life and the self-knowledge, to gain new knowledge and skills, self-investment, to create something, to notice the world's new beauties, a learning habit and a behaviour pattern. To Soran, Akkoyunlu & Kavak, (2006: 202), LLL means to create a second opportunity for individuals and to provide advanced educational opportunities through updating basic skills. LLL is based on a voluntary basis, and the development of competence due to personal and professional reasons (Ireland Ministry of Education and Science, 2000). From point of view Koç's (2005), LLL is a learning habit and a way of behaviour. Organization for Economic Cooperation and Development (OECD) describes LLL as activities endless and needed to develop constantly and that have an important role in an individual's improvement and change (Ersoy, 2009, p. 9). These activities generally related to individual's area of interest or job, are continuous. LLL refers to a learning process that will continue everywhere and throughout the entire life in order to create new opportunities for individuals, provide advanced educational opportunities and adapt to continuously changing conditions (Polat & Odabaş, 2008, p. 144; Soran, Akkoyunlu & Kavak, 2006, p. 201).

It was set three basis objectives of LLL in the report of specialization commission on lifelong education or non-formal education according to The Eighteenth Five-Year Development Plan of State Planning Organization (DPT, 2001, p. 10; OECD, 1996, p. 87). These objectives are Personal Development, Social Integration and Economic Growth, Personal Development; lifelong education centres on individual. Thanks to it, the individual focuses on potential process of active learning through the strategy of lifelong learning. It also aims to offer an education in accordance with individuals' interests and needs by bestowing the rights of choice and initiative. Social Integration; LLL has remained as a process that has been benefitted by small groups until today. Lifelong education aims to reverse this situation, that is to say, to bring about the social integration by offering everyone an opportunity of LLL and contributing to the equality of opportunity and strengthening democratic basis of the society. Economic Growth; it includes necessary regulations in order to achieve the equality of opportunity and utilize opportunities in creating skill, increase productivity, encourage economic growth and creating new traces.

To Singh (2002), LLL has four purposes that are 'Knowing and learning', 'Learning to do', 'Learning to be', and 'Learning to live together'. When looking at purposes of LLL, it can be said that the purposes group around personal development and personal learning in general. In addition, European Parliament specified 8 basic skills and competencies for LLL on 18 December 2006. These basic skills and competencies are Communicating in Native Language, Communicating in Foreign Languages, Possessing Mathematical Competence and Basic Competence in Science and Technology, Digital Competence, Learning to Learn, Community and Citizenship Competencies, and Competencies of Entrepreneurial Intuitions, of Cultural Awareness, and of Power of Expression (Hürsen, 2011; Karakuş, 2013; Selvi, 2011; Demiralay & Karadeniz, 2008-2010; Gencel, 2013; Otten & Ohana, 2009; Demirel, 2010; Figel, 2007; Özkartal, 2012-2015; Hozjan, 2009; Coşkun & Demirel, 2012). In the Parliament, it was emphasized the necessity that individuals who will be trained according to LLL, receive education in accordance with the competencies, and have adequate information, consciousness, awareness and experience regarding these competencies.

Method

The objective of the research

The objective of this research is to determine the opinions of the students studying at the vocational schools about lifelong learning competencies by considering some demographic variables (gender, class level, age, type of program, and vocational school).

The population and the sample

The population of the research constitutes all students studying in the programs at Hakkari University, and the sample of this research constitutes 469 students studying in the programs of Child Development, and of Medical Laboratory Techniques, and of Medical Promotion and Marketing in Health Services School of Vocational Education, and in the programs of Business Administration, and of Accounting and Tax Applications, and of Postal Services in Yüksekova Vocational School, and in the programs of Computer Programming, and of Construction Technician, and of Laborant and Veterinary Healthcare in Çölemerik Vocational School at Hakkari University.

The research model

Lifelong Learning Competencies Scale developed by Hürsen (2011), was used in this research. The answers of the students participating in the research to the scale items depending on the demographic variables were calculated by using Anova test which is an F test, t-test and one-way variance analysis with the help of SPSS 20 statistical software package. In the research, t-test was used for binary variables, and Anova test was used when the study involves 3 or more variables. All likert questions in the scale that was used in the research were graded from positive (5) to negative (1), and from negative (1) to positive (5). According to the analyses carried out by considering this grading, t-test was used for binary variables, and Anova test was used when the study involves 3 or more variables in the research. When the analyses were made, it was paid attention to whether tests are parametric or nonparametric. When the data was interpreted, significance level of ($p<0.05$) was used, and the research data was interpreted according to this. The scale used in the research consists of five point likert type 25 items including (1) Strongly Disagree (2) Disagree, (3) Undecided, (4) Agree, and (5) Strongly Agree. Overall assessment of the scale used in the research was determined as below (Sarıgöz, et. al., 2015):

$$SA = \frac{EYD - EDD}{SS} = \frac{5-1}{5} = 0{,}8$$

RO: Range of Options

HV: The Highest Value

LV: The Lowest Value

NO: Number of Options

1.00 – 1.80: Strongly Disagree

1.81 – 2.60: Disagree

2.61 – 3.40: Undecided

3.41 – 4.20: Agree

4.21 – 5.00: Strongly Agree

In the research, 'General Screening Model', one of the descriptive methods was used. According to Karasar (2010: 77), general screening model is the screening arrangements carried out on a group, sample group or a paradigm or the entire universe in order to draw conclusion about the universe composed of numerous elements.

Results

In this part of the study, demographic data about the students who participated in the research, the data obtained about the scale used in the research, and the statistical findings about this data are presented.

Table 1

Demographic Data about the Students Participating in the Research

VS	Type of Program	Number of Students		Gender		Class Level	
		N	%	N	%	N	%
Health Services School of Vocational Education	Child Development	86	18.34	Male =0	00.00	1st Grade =34	39.54
				Female =86	100.0	2nd Grade =52	60.46
	Medical Lab. Techn.	33	7.04	Male =17	51.52	1st Grade =15	45.46
				Female =16	48.48	2nd Grade = 18	54.54
	Medical Pro. and Marketing	22	4.69	Male =7	31.82	1st Grade =15	68.18
				Female =15	68.18	2nd Grade = 7	31.82
Yüksekova Vocational School	Business Administration	44	9.38	Male =14	31.82	1st Grade =24	54.55
				Female =30	68.18	2nd Grade =20	45.45
	Accounting and Tax Applications	34	7.25	Male =14	41.18	1st Grade =19	55.88
				Female =20	58.82	2nd Grade =15	44.12
	Postal Services	53	11.30	Male =28	52.83	1st Grade =29	54.72
				Female =25	47.17	2nd Grade =24	45.28
Çölemerik Vocational School	Computer Programming	87	18.54	Male =51	58.62	1st Grade =43	49.43
				Female =36	41.38	2nd Grade =44	50.57
	Construction Technician	74	15.78	Male =74	100.0	1st Grade =26	30.95
				Female =00	00.00	2nd Grade =48	69.05
	Lab. and Vet. Healthcare	36	7.68	Male =18	50.00	1st Grade =16	44.44
				Female =18	50.00	2nd Grade =20	55.56

The data about the students participating in the research are seen in Table 1. 469 students participated in the research. From among these students, 141 students are studying in Health Services School of Vocational Education. 131 students are studying in Yüksekova Vocational School, and 197 students are studying in Çölemerik Vocational School.

Table 2

T-Test Analysis Results of the Students' Answers to the Lifelong Learning Competencies Scale (LLLCS) According to Gender

Gender	N	$\overline{X}$	Ss	Sd	t	p
Female	246	193.70	18.78	467	.076	.940
Male	223	193.58	16.67			

p> 0.05

From the answers of the students participating in the research to the Lifelong Learning Competencies Scale (LLLCS) in Table 2, it can be said that there is no a statistically significant difference ($t_{(.076)}$; $p_{(.940)}$; p>0.05) between female and male students in terms of their opinions about lifelong learning competencies according to gender variable by looking at the t-test results.

Table 3
T-test Analysis Results of the Students' Answers to the Lifelong Learning Competencies Scale (LLLCS) according to Class Level

Class Level	N	$\overline{X}$	Ss	Sd	t	p
1) 1st Grade	221	195.46	19.24	467	2.097	.037
2) 2nd Grade	248	192.02	16.26			

p< 0.05

From the answers of the students participating in the research to the Lifelong Learning Competencies Scale in Table 3, it can be said that there is a statistically significant difference ($t_{(2.097)}$; $p_{(.037)}$; p<0.05) between the students in the 1st grade and 2nd grade in favour of the students in the 1st grade according to class level by looking at the t-test results.

Table 4
Anova test analysis results of the students' answers to the Lifelong Learning Competencies Scale (LLLCS) according to age variable

Age	N	$\overline{X}$	Ss	Var. Source	Sum of Squares	Sd	Mean Square	F	p	Sign. Differ. (Tukey)
1) 17-19	144	195.78	16.78	Btw. Gr.	1301.24	3	433.75	1.374	.250	
2) 20-22	229	192.77	18.34	Wit. Gr.	146768.30	465	315.63			
3) 23-25	74	193.55	18.38	Total	148069.54	468				
4) 26-over	22	189.05	15.85							

p> 0.05

From the answers of the students participating in the research to the Lifelong Learning Competencies Scale in Table 4, it can be said that there is no a statistically significant difference between the students who are between 17-19 years old, 20-22 years old, 23-25 years old, and over 26 years old according to age variable by looking at the Anova test results [$F_{(1.374)}$, $p_{(.250)}$; p> .05].

Table 5
Anova Test Analysis Results of the Students' Answers to the Lifelong Learning Competencies Scale (LLLCS) According to the Variable of the Type of Program

The Type of Prog.	N	X	Ss	Varia. Sour.	Sum of Squares	Sd	Mean Square	F	p	Sign. Differ. (Tukey)
1) CD	86	193.7	18.6	Btw. Gr.	879.9	8	109.99	.344	.949	
2) MLT	33	193.3	18.9	Wit. Gr.	147189.5	460	319.98			
3) MPM	22	193.8	21.9	Total	148069.5	468				
4) BA	44	196.6	18.7							
5) ATA	34	192.5	18.1							
6) PS	53	191.7	17.2							
7) CP	87	194.8	16.3							
8) CT	74	193.1	16.5							
9)LVH	36	191.9	18.2							

p> 0.05

From the answers of the students participating in the research to the Lifelong Learning Competencies Scale in Table 5, it can be said that there is no a statistically significant difference between the students studying in the programs of Child Development, Medical Laboratory Techniques, Medical Promotion and Marketing, Business Administration, Accounting and Tax Applications, Postal Services, Computer Programming, Construction

Technician, and Laborant and Veterinary Healthcare according to the variable of the type of program by looking at the Anova test results [$F_{(.344)}$, $p_{(.949)}$; p< .05].

Table 6

Anova Test Analysis Results of the Students' Answers to the Lifelong Learning Competencies Scale (LLLCS) According to the Variable of the Vocational School

The Vocational School	N	$\overline{X}$	Ss	Variance Source	Sum of Squares	Sd	Mean Square	F	p	Sign. Differ. (Tukey)
1) HSSVE	141	193.67	19.12	Btw. Gr.	0.22	2	0.11	.000	1.000	
2) YVS	131	193.61	17.96	Wit. Gr.	148069.31	466	317.75			
3) ÇVS	197	193.64	16.74	Total	148069.53	468				

p> 0.05

From the answers of the students participating in the research to the Lifelong Learning Competencies Scale in Table 6, it can be said that there is no a statistically significant difference between the students studying in Health Services School of Vocational Education (HSSVE), Yüksekova Vocational School (YVS), and Çölemerik Vocational School (ÇVS) according to the variable of the vocational school by looking at the Anova test results [$F_{(.00)}$, $p_{(1.00)}$; p> .05].

Table 7

The Items with the Highest and the Lowest Arithmetic Averages According to the Answers of the Students Participating in the Research to the Lifelong Learning Competencies Scale

Lifelong Learning Competencies Scale Items	$\overline{X}$	Skill Level
42. Using computer to save information	4.09	Agree
37. Freely expressing opinions on a particular topic	4.07	Agree
20. Easily choosing the documents that contribute to professional development	4.01	Agree
44. Benefitting from internet tools like online journals. online videos and newswires	4.00	Agree
10. Offering creative thoughts to the problems which encountered in the professional life	3.97	Agree
24. Using language effectively in the process of learning	3.55	Agree
17. Being keen on every subjects related to professional field	3.52	Agree
6. Knowing how to motivate oneself for professional development	3.50	Agree
14. Recognizing available opportunities for professional development	3.32	Undecided
15. Knowing the learning activities necessary for professional development	3.28	Undecided
General Arithmetic Mean: 3.80		

From the arithmetic averages of the students' answers to the Lifelong Learning Competencies Scale in Table 7, it was determined that article 42 stating *'Using computer to save information'* (X=4.09), article 37 stating *'Freely expressing opinions on a particular topic'* (X=4.07), article 20 stating *'Easily choosing the documents that contribute to professional development'* (X=4.01), article 44 stating *'Benefitting from internet tools like online journals, online videos and news wires'* (X=4.00), and article 10 stating *'Offering creative thoughts to the problems which encountered in the professional life'* (X=3.97) are the items with the highest arithmetic averages in the scale. In the light of the answers of the students to the scale items, it can be said that the students see themselves as competent in the subjects related to lifelong learning competencies such as using computer, expressing opinions, choosing material, benefitting from the internet, and producing creative thoughts.

Moreover, from the arithmetic averages of the students' answers to the scale items in Table 7, it was determined that article 15 stating *'Knowing the learning activities necessary for professional development'* (X=3.28), article 14 stating *'Recognizing available opportunities for professional development'* (X=3.32), article 6 stating *'Knowing how to motivate oneself for*

professional development' (X=3.50), article 17 stating *'Being keen on every subjects related to professional field'* (X=3.52), and article 24 stating *'Using language effectively in the process of learning'* (X=3.55) are the items with the lowest arithmetic averages in the scale. In the light of the answers of the students to the scale items, it can be said that the students do not see themselves as competent in the subjects related to lifelong learning competencies such as using language effectively, sense of wonder, motivation, and seizing the opportunities.

Discussion, Conclusion & Implementation

In the end of the research, from the answers of the students participating in the research to Lifelong Learning Competencies Scale, it was determined that there is no a significant difference between female and male students depending on gender variable. In the light of the students' answers to the scale items, it can be said that female and male students have similar opinions about lifelong learning competencies.

From the answers of the students participating in the research to the Lifelong Learning Competencies Scale, it was determined that there is a statistically significant difference between the students in the 1st grade and 2nd grade in favour of the students in the 1st grade depending on the variable of class level. In the light of the students' answers to the scale items, it can be said that the students in the 1st grade have higher tendency toward lifelong learning competencies than the students in the 2nd grade. From the answers of the students participating in the research to the Lifelong Learning Competencies Scale, it was determined that there is no a statistically significant difference between the students depending on age variable. In the light of the students' answers to the scale items, it can be said that the students of different age ranges have similar opinions about lifelong learning competencies.

From the answers of the students participating in the research to the Lifelong Learning Competencies Scale, it was concluded that there is no a statistically significant difference between the students studying in different programs depending on the variable of the type of program. In the light of the students' answers to the scale items, it can be said that the students studying in different programs have similar opinions about lifelong learning competencies. From the answers of the students participating in the research to the Lifelong Learning Competencies Scale, it was concluded that there is no a statistically significant difference between the students studying in different vocational schools depending on the variable of the vocational school. In the light of the students' answers to the scale items, it can be said that the students studying in different vocational schools have similar opinions about lifelong learning competencies.

From the arithmetic averages of the students' answers to the Lifelong Learning Competencies Scale, it was determined that article 42 stating 'Using computer to save information', article 37 stating 'Freely expressing opinions on a particular topic', article 20 stating 'Easily choosing the documents that contribute to professional development', article 44 stating 'Benefitting from internet tools like online journals, online videos and new swirls', and article 10 stating 'Offering creative thoughts to the problems which encountered in the professional life' are the items with the highest arithmetic averages in the scale. In the light of the answers of the students to the scale items, it can be said that the students see themselves as competent in the subjects related to lifelong learning competencies such as using computer, expressing opinions, choosing material, benefitting from the internet, and producing creative thoughts.

From the arithmetic averages of the students' answers to the scale items, it was determined that article 15 stating 'Knowing the learning activities necessary for professional development', article 14 stating 'Recognizing available opportunities for professional

development', article 6 stating 'Knowing how to motivate oneself for professional development', article 17 stating 'Being keen on every subjects related to professional field', and article 24 stating 'Using language effectively in the process of learning' are the items with the lowest arithmetic averages in the scale. In the light of the answers of the students to the scale items, it can be said that the students do not see themselves as competent in the subjects related to lifelong learning competencies such as using language effectively, sense of wonder, motivation, and seizing the opportunities.

In the light of the answers of the students to the scale items, it was determined that the general arithmetic average of the scale coincides with (Agree), namely, lower than expected (Strongly Agree). Therefore, it can be said that the students' opinions about lifelong learning competencies are just under expected.

Implementation

A significant difference was not found between the students participating in the research in terms of the age, the type of the program, and the vocational school. Also, the arithmetic average of the students' answers to the scale is very low. Because of this reason, the importance of lifelong learning and of all competencies necessary for it should be explained well to all students, especially university students, and it should be raised the awareness of them about this topic.

Courses regarding the importance of learning and the competencies necessary for learning in the modern world should be added to the curricula in all schools especially, and the students' knowledge and skills should be improved and it should be raised the awareness of them about this subject in order that they become successful in life .The support should be received from media organs initially, and then various institutions and organizations so that the public become aware of lifelong learning and its competencies. In order to achieve the goal of lifelong learning and teach its competencies well, especially relevant ministry and all other institutions and organizations should be organized and work cooperatively regarding this issue.

References

Ayhan, S. (2005). *Yaşam Boyu Öğrenme.* (Hazırlayanlar: Fevziye Sayılan & Ahmet Yıldız). Ankara: Pegem A Yayıncılık.

Coşkun, Y, D, & Demirel, M. (2012). Üniversite öğrencilerinin yaşam boyu öğrenme eğilimleri. *Hacettepe Üniversitesi, Eğitim Fakültesi Dergisi*, 42, 108-120.

Çelik, S., Güleç, İ, & Demirhan, B. (2012). Yaşam Boyu Öğrenme nedir? Kapsam ve kapsamı üzerine bir değerlendirme. *Sakarya Üniversitesi, Eğitim Fakültesi Dergisi,* 2(3), 34-48.

Demiralay, R, & Karadeniz, Ş. (2008). İlköğretimde yaşam boyu öğrenme için bilgi okuryazarlığı becerilerinin geliştirilmesi. *Cypriot Journal of Educational Sciences*, 6, 89-108.

Demiralay, R, & Karadeniz, Ş. (2010). Bilgi ve iletişim teknolojileri kullanımının. ilköğretim öğretmen adaylarının bilgi okuryazarlığı öz-yeterlik algılarına etkisi. *Kuram ve Uygulamada Eğitim Bilimleri,* 10(2), 819-851.

Demirel, M. (2010). İlköğretim programlarına Yaşam Boyu Öğrenme becerileri açısından eleştirel bir bakış. *1. Uluslararası Eğitim Araştırmaları Kongresi,* 18 Mart Üniversitesi, 1-3 Mayıs, Çanakkale, 1-25.

DPT. (2001). *Hayat boyu eğitim ve örgün olmayan eğitim, özel ihtisas komisyon raporu.* Ankara.

EC. (2003). *Implementing lifelong learning strategies in Europe: progress report on the follow-up to the council resolution of 2002 on lifelong learning,* Brussels.

Erdamar, G. (2011). *Eğitimde yeni yönelimler.* (Ed. Özcan Demirel). Ankara: Pegem Akademi.

Ersoy, A. (2009). *Yaşam boyu öğrenme ve Türkiye'de halk kütüphaneleri.* Yayımlanmamış Yüksek Lisans Tezi. Hacettepe Üniversitesi, Ankara.

Figel, J. (2007). *Key competences for lifelong learning-European reference framework, Luxembourg: Office for Official Publicatios of the European Communities.* Erişim 15 Nisan 2015. from:http://ec.europa.eu/dgs/education_culture/publ/pdf/ll-learning/keycomp_en.pdf

Gencel, E, O. (2013). Prospective teachers' perceptions towards lifelong learning competencies. *Ecucation and Science,* 38, 237-252.

Hürsen, Ç. (2011). *Öğretmenlerin Yaşam Boyu Öğrenme yaklaşımına yönelik görüş-tutum ve yeterlik algılarının değerlendirilmesi.* Yayımlanmamış Doktora Tezi. Yakın Doğu Üniversitesi, Eğitim Bilimleri Enstitüsü, Lefkoşa.

Hozjan, D. (2009). Key competences for the development of lifelong learning in the European Union. *European Journal of Vocational Training*, 46(1), 196-207.

Ireland Ministry of Education and Science. (2000). *Learning for life: white paper on adult education. july.* http://www.irishtimes.com/newspaper/special/2000/whitepaper/adult_educ.pdf Erişim Tarihi: 09.07.2015.

Karakuş, C. (2013). Meslek yüksek okulu öğrencilerinin Yaşam Boyu Öğrenme yeterlikleri. *Eğitim ve Öğretim Araştırmaları Dergisi,* 2(3), 26-35.

Karasar, N. (2010). *Bilimsel Araştırma Yöntemi.* Ankara: Nobel Yayın Dağıtım.

Koç, G. (2005). *Eğitimde yeni yönelimler.* (Ed. Ö. Demirel). Ankara: Pegem A Yayıncılık.

OECD. (1996). Lifelong learning for all: meeting of the education committee at ministerial level, 16–17 January, Paris.

Otten, H, & Ohana, Y. (2009). *The eight key competencies for lifelong learning: An appropriate framework within which to develop the competence of trainers it the field of European youth work or just plain politics?* IKAB, Erişim 229 Nisan 2015, From:http://www.salto-youth.net/downloads/4171881/Trainer_%20Competence_study_ final.pdf

Özkartal, M. (2012). Carpet narrations, animal motifs and the language of colors in Turkish epics. *Journal of Carpet Flatweaves, Fabric, Clothing and Embroderies,* 4(8), 92-102.

Özkartal, M. (2015). Turkish mythology and its place in education of art. *International Journal of Turkish Education Sciences,* 3(5), 83-98.

Polat, C, & Odabaş, H. (2008). Bilgi toplumunda yaşam boyu öğrenmenin anahtarı: Bilgi okuryazarlığı. *Küreselleşme, Demokratikleşme ve Türkiye Uluslararası Sempozyumu.* Akdeniz Üniversitesi, Antalya, 143–151.

Sarıgöz, O., Hacıcaferoğlu, S., Dönger, A., Cam F, & Koca M. (2015). Neither employee harassment some variables levels investigation terms. *The Journal of Academic Social Science,* 3(14), 360-373.

Selvi, K. (2011). Teachers' lifelong learning competetencies. *International Journal of Curriculum and Instructional Studies*, 1(1), 61-69.

Singh, M. (2002). *The global and international discourse of lifelong learning from the perspective of UNESCO.* (Ed. Harney. K. Heikkinen. A. Rahn. S. & Schemmann M.) Frankfurt: Peter Lang.

Soran, H., Akkoyunlu, B, & Kavak, Y. (2006). Yaşam boyu öğrenme becerileri ve eğiticilerin eğitimi programı: Hacettepe Üniversitesi örneği. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi,* 30, 201-210.

Şişman, M. (2012). *Eğitim bilimine giriş.* Ankara: Pegem Akademi.

Teyfur, M. (2009). *Eğitim bilimine giriş.* Ankara: Anı Yayıncılık.

Toprak, M, & Erdoğan, A. (2012). Yaşam Boyu Öğrenme: kavram, politika, araçlar ve uygulama. *Yükseköğretim ve Bilim Dergisi*, 2(2), 69-91.

The place of implicit knowledge and implicit learning in the construction of expertise in pre-service teacher education

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Abstract

In this study the answer of the question "How do we benefit from implicit knowledge and implicit learning in development of teaching expertise in pre-service teacher education?" was searched. Reflective thinking and implicit learning are two approaches that we encounter in professional expertise. In pre-service teacher education, the lack of studies that reveal the importance of implicit knowledge and implicit learning of developing teaching expertise attracts attention. Within this scope the aim of research is to examine the relationship between implicit knowledge and implicit learning and teaching expertise in pre-service teacher education by benefitting from theoretical framework and empirical studies done in these subject-matters. This article is a literature review study. Consequently the explanations and suggestions about definition of expertise and development and knowledge of expertise the role of implicit learning and implicit knowledge in the development of expertise as well as teaching expertise were given place.

Keywords: Pre-service teacher education, expertise, expert teacher, implicit knowledge, implicit learning.

Introduction

Effective teaching is directly related with effective and efficient usage of knowledge and skills regarding teaching profession in the teaching and learning process. Effective teaching can be defined as expert teacher at the same time. What knowledge and skills needed for expert teacher is still a discussed issue. Cochran-Smith (2000) emphasize the importance of examining continuous discussions in teacher education around three fundamental questions as "question of knowledge", "question of learning" and "question of outcomes". These three fundamental questions can be elaborated in the context of qualifications that an expert teacher must have. The main difference that separates experts from nonexperts is made use of their knowledge while solving complex problems. In this scope it can be said that knowledge structures and types are important factors in answering the question "How can teaching expertise be developed in pre-service teacher education?"

In the literature of professional expertise, as explaining superior performance and knowledge structure of an expert, reflective practicum (or thinking) and implicit learning (Ericson, 2006; Knight, 2002; Schön, 1987; Tomlinson, 1999a) are the two approaches we encounter. In addition to this, the importance of reflection in teacher education practicum and learning to teach have been emphasized more often since 1980s (Calderhead, 1987; Malderez & Wedell, 2007). It can be said that reflective practicum in pre-service teacher education has mostly take place in both international (Farrell, 2013; Lee, 2005; Parkison, 2009; Thiessen, 2000; Toom, Husu, & Patrikainen, 2014) and in Turkish literature (Aydın & Çelik, 2013; Duban & Yanpar Yelken, 2010; Kızılkaya & Aşkar, 2009; Köksal & Demirel, 2008; Semerci, 2007; Tok, 2008). On the contrary, it can be said that in pre-service teacher education, studies of implicit learning and implicit (tacit) knowledge is rather few. Especially while in Turkey the problem of knowledge and learning in pre-service teacher education is dicussed, it is thought that benefitting from literature regarding implicit learning and implicit knowledge is important and necessary. Tomlinson (1999a, 1999b) expressed that gaining of skilful capability in pre-service teacher education should be dealt with minimalist approach. Sternberg and Horvath (1995) expressed that educational researchers have a tendency of defining teaching expertise only in terms of conscious reflection/reflective thinking. In this sense the lackness of studies regarding the role of implicit learning and implicit knowledge in development of teaching expertise in

pre-service teacher education can be seen as a gap. By taking this implied lackness into consideration, the answer of the question "How do we benefit from implicit knowledge and implicit learning in the development of teaching expertise of prospective teacher in pre-service teacher education?" was searched in this study. Accordingly the aim of this paper is to suggest explanations and suggestions about the relationship between implicit knowledge and implicit learning and teaching expertise in pre-service teacher education by benefitting from theoretical framework and empirical research results done in these subject-matters. As a method this article is a literature review study. In this paper the answers of the following questions were searched:

1. How is expertise defined?
2. How is expertise developed?
3. What are the types of knowledge that have a role in the development of expertise and how knowledge of expert is represented in memory?
4. How do implicit learning and implicit knowledge have a role in the development of expertise?
5. How are skills and knowledge of an expert measured?
6. How do we develop expertise in pre-service teacher education?

Definition of Expertise

Since 1970-80s in which cognitive psychology showed development, studies on expertise have continued with increasing interest (Feldon, 2007). Studies of expertise that stand on book "Human problem solving" of Newell and Simon (1972) was used comprehensively in development of artificial intelligence programmes in time (Cited in Glaser & Chi, 1988). In cognitive psychology mental processes and abilities of human are defined with the term "expertise". In this study the term "expertise" is used to in order to distinguish more knowledgeable and skilled individuals (experts) from less knowledgeable and skilled individuals (novices) in a specific domain (Chi, 2006a). Experts became more knowledgeable and skilled via education, training and experience in a domain. In other words the ones having superior abilities genetically in a domain-specific (music, sport, art, science, chess etc.) and expertise abilities of individuals showing extraordinary performance (Chi 2006a, p.21-22) were left out of the scope of this research.

Ericsson and Towne (2010) defined expertise as knowledge, skill and opinions possessed by an expert in specific domain. Speelman (2014) stated expertise as people who have more knowledge and abilities than non-experts. According to Chi (2006b) expertise refers to the manifestation of skills and understanding resulting from the accumulation of a large body of knowledge. Some researchers (Dreyfus, 2004; Hoffman, 1996) define expertise as process of acquiring knowledge and skill that is continues gradually from the lowest of profiency (having no knowledge and ability) to the highest level and a continuation of the novice. Glaser and Chi (1988) manifested general characteristics of experts based on results of many studies of expertise as follows:

1. All of experts are firstly superior in their own domains. It is expressed that there are just very few proofs regarding experts can transfer their knowledge and abilities in their own domains to the other domains.
2. Experts perceive broad meaningful patterns regarding their own domains.

3. Experts are faster and more accurate than novices when solving problems or performing the skills of their domain.
4. Experts have excel short term and long term memory than novices.
5. Experts notice and represent the problem in their domain at a deeper (more principled) level than novices. The novices are in tendency of representing the problems at a superficial level.
6. Experts spend a lot of time to qualitatively analyzing problems.
7. Experts have self-monitoring skills effectively. Compared to the novice they can realise and correct their mistakes more quickly. They control their solutions. Experts can learn from their own mistakes (pp. xvii-xx).

Sternberg and Horvath (1995) on the other hand identified three fundamental standards that distinguish the prototype expert from non-expert. The first difference is that experts apply more effectively knowledge to problems within their domain than non-experts (knowledge criterion). The second one is experts have efficiency to solve problems within their domain in a short time with less cognitive effort (efficiency criterion). And the third one is insight. According to Sternberg and Horvath, the experts can produce faster, more appropriate and creative solutions to problems by using their own deeper knowledge of expertise than the novices. When definitions are examined, it can be said that expertise needs to have comprehensive accumulation of knowledge of a specific domain and effective and efficient usage of this knowledge.

Development of Expertise

The development of expertise is usually decided by looking at the qualitative shifts and stabilizations of knowledge and performance of experts and non-experts (Hoffman, 1996). The important criterion in acquiring of expertise is professional experience. Some researchers accept that at least ten years of experience is needed for progression from the novice to expert (Ericsson & Towne, 2010; Hoffman, 1996). On the contrary professional experience is not alone considered sufficient for development of expertise. Every experienced person in the profession cannot be an expert (Elliott, Stemler, Sternberg, Grigorenko, & Hoffman, 2011; Strenberg & Horvath, 1995). Especially according to the results of studies done in professional domain such as medicine, teaching, judicature, finance and academy. It is expressed that mostly there is not a significantly relationship between having long term experience and showing high quality performance (Ericsson & Towne, 2010).

The other indicator in the development of expertise is automatization. Experience provides automaticity in professional skills. According to Hoffman (1996) by means of professional practice and experience, an skills that shows intentional, conscious, effortful, and linear quality at the beginning turns out automatic pattern recognition and intuitional decision making in time. Automatization and intuitional decision making provide an expert to decide and solve a problem more effortlessly, fastly and nonconscious (Feldon, 2007; Hoffman, 1996). Hatano and Oura (2003), define solving similar problems in specific domain correctly and fast as routine expertise. They suggest adaptive expertise for development of expertise. The schemes of people having adaptive expertise are more flexible; they can transfer their knowledge and skills to different contexts; they can produce more creative and original solutions; they have an ability to reflect and manipulate familiar tasks Ericsson (2006) suggests deliberate practice for expert to achieve superior reproducible performance. Deliberate practice is to achive a task in a limited time period by focusing in order to develop actual performance and reduce harmful

effects of automaticity. Accordingly it can be said that the individuals should be offered tasks involving deliberate practice for adaptive expertise.

In studies of expertise it was seen as a problem to answer the question "How will expertise of a person in a specific domain be decided?" according to very subjective criterion or standards (for example quality of performance, his status among his colleagues, experience, education level, profession licence etc.) rather than operational definition (Ericsson, 2006; Feldon, 2007; Hoffman, 1996). Hoffman (1996) offered a kind of classification that goes gradually from the novice to expertise in ordere to make an operational definition "*Naivett,* Novice, *initiate, apprentice, journeyman, expert, master"*. Similarly Dreyfus (2004) has also proposed the model of expertise. The five stage model was summarized in Table 1.

As it is seen in Table 1, according to the Five-Stage Model of Adult Skill Acquisition of Dreyfus expertise is a period that goes from the lowest level of competency to expertise. Within this period it can be said that experience quality practice and examples (cases) are important. Also for development of expertise it can be said that well-established complex and differential problem task or situations should be presented in educational practicum. As the number of examples and performance stored in the memory of expert increases, the examples in the memory can be recalled more accurate and faster (Speelman, 1998. p.142). As a result with the development of expertise the individual can acquire skill of recognising underlying causes of problem rapidly; distinguishing important information; discovering unchanging patterns in the task and making more accurate decisions before solving the problem (Hoffman, 1996).

*Table 1

Summary of Dreyfus the Five-Stage Model of Adult Skill Acquisition

Stages of Expertise	**Explanations**
Novice	The learners are taught objective facts. context-free tasks and rules that were seperated into elements by teacher Mostly verbal knowledge is acquired and the behaviours of learner is very rational and relatively inflexible; only is in tendency of conformity given rules and processes.
Advanced beginner	Learning context is important; an individual gains experience about coping with real situations and begins to develop a limited understanding regarding context. After the learner has seen enough numbers of examples. he can learn to realise new aspects regarding fact. He can realise similarities between contexts and establish episodic knowledge.
Competence	With increased experience. the number of processes and elements that the learner should be careful. The learner shouuld cope with many uncertain situations different from each other. This imposes an excessive load on learner. In order to cope with this load and achieve this task the learner prepares a plan according to specific aspect and determine his priorities. obtains the important elements of situation and can limit his task by ignoring unimportant elements; makes conscious and deliberate choices and avoid making a mistake. Their performances are not still very fast. fluent and flexible.
Proficiency	intuition and how-know ability is acquired. An individual can realise striking parts of situation and the aims he has to achieve but he does not know what to do. He has a few solution and he has not yet had enough experience with the outcomes of the possible responses. After searching important parts of the situation extemporally. he has to decide what he will do. A person at this level behaves intuitional about knowing and recognising pattern however he uses analytic and deliberate thinking periods in deciding.
Expertise	An expert can take and apply fast. intuitative. strategic and right decisions. Since he has rather wide and sufficient case repertory. he can see similarities and differences between many situations. They do not determine consciously what to do and what to attend. They can show the superior performance fluently and without any effort. Since they have implicit understanding they find difficulty to explain this performance.

**Table 1 was formed by researcher by summarizing studies of Berliner (2001, 2004) and Dreyfus (2004).*

Knowledge Types of Developing Expertise

As it was mentioned before, the main difference between experts and novices is the quality of knowledge acquired via education and experience. In related literature it is seen that knowledge types that an expert uses in solving of a problem can be classified in different ways and represented by different expressions (de Jong & Ferguson-Hessler, 1996). de Jong ve Ferguson-Hessler expressed knowledge types in terms of knowledge-in-use as conceptual knowledge, procedural knowledge, situated knowledge and strategic knowledge that can be used in solving of a problem. These knowledge types can be acquired as implicit and explicit knowledge and can be structured in the memory. In the scope of limits of study the mentioned knowledge types were shortly defined below, their analysis in details were not given place.

Conceptual knowledge is a knowledge that is structured in the memory as a result of the integrated storage meaningful dimensions chosen from known examples. Conceptual knowledge is more of the storage of verbal information (Tennyson & Cocchiarella, 1986). According to Tennyson and Cocchiarella conceptual knowledge is also an understanding of a concept's operational structure within itself and between related concepts. That is conceptual knowledge involves both "knowing that" (concept) and "knowing why" (principle). *Procedural knowledge,* is a knowing how the task is done and when it is done (McCormick, 1997). Procedural knowledge is developed by using of conceptual knowledge towards solving problems of domain-specific (Tennyson & Cocchiarella, 1986). The experts are in tendency of relying on their procedural knowledge in their actions and solving problems (Knight, 2002). Procedural knowledge is automating, intuitive and effective during solving of problem (de Jong & Ferguson-Hessler, 1996). As a result of study of Chi. Feltovich and Glaser (1981) it was obtained that the schemes experts using in problem solving contains more procedural knowledge (implicit knowledge); in response to this the schemes of novice mostly base on declerative knowledge and their solution methods are deficiently abstracted. *Situated knowledge* defines belief system of an individual and identity of the user within a given culture (Lave &Wenger, 1991 cited in Kim & Hannafin. 2008). Situated knowledge knowledge depends on used context and can be interpreted in this context and reflects implicit knowledge (Brown, Collins, & Duguid, 1989). *Strategic knowledge* represents interlaced facts, concepts, abilities of using processes and implicit knowledge in specific contexts and applications (Collins et al., 1989 as cited in Kim & Hannafin, 2008). Strategic knowledge is a knowledge that provides organizing of problem solving process by following problem solving stages (de Jong & Ferguson-Hessler, 1996). It can be said that strategic knowledge reflects implicit knowledge and wisdom of an expert.

Representation of an Expert's Knowledge in Memory

In studies of expertise, the quality of knowledge types mentioned above and how they are represented in memory is a focus point. Chase and Simon (1973), as a result of their study of memory performance of chess masters, expressed that the quantity and accuracy of knowledge are the basic factors of expertise (Cited in Feldon, 2007). In expertise researches generally observed differences between experts and novices in analyzing, defining and solving skills of problem and the question how novice specialize are focused (Chi, 2006b; Chi et al., 1981; Ertmer, Stepich, York, Stickman, Wu, Zurek & Göktaş, 2008). It is assumed that basic capacities and domain-general resoning abilities of experts and non-experts are little or very similar to each other (Chi, 2006a). However experts have more knowledge about their own domain and this knowledge is organized, integrated and structured (Chi, 2006a; Chi et al., 1981; Sternberg & Horvath, 1995). In studies done before it was expressed that experts can use this knowledge regarding their domain (or any other specific domain) in solving of complex problems and making decision effectively compared to non-experts (Boekhout, van Gog, van

de Wiel, Gerards-Last & Geraets, 2010; Chi et al., 1981; Hatano & Oura, 2003; Herbig & Büssing, 2004). Chi et al. (1981) examined the differences between expert and novice students' performances regarding categorization and sorting physics problems (problems of conservation of energy). They found that experts and novice students sorted differently the same physics problems. Experts focused on categorization problems by using appropriate physics principles that were relevant to problem solution. Whereas novice students categorized and sorted them according to the superficial features contained in the problem statement such as the presence of pulleys or inclined planes, it was also expressed that expert students used from cues in the problem their selection of the appropriate principle. However novices use the features explicitly stated in the problem.

Experts structure concepts and principles regarding their own domain at high order for producing effective and sufficient strategies. It is said that compared to novice experts can produce richer conceptual representations, have deeper knowledge about causal relations in the root of problem and can effectively use their specific knowledge and methods better according to the situation of problem (Chi et al., 1981; de Jong & Ferguson-Hessler, 1996; Feldon, 2007; Hoffman, 1996). Dreyfus (2004), expressed that it is predicted a chess master can play between 5-10 seconds without any disturbance in his performance and can distinguish approximately 100.000 pozition. Again experts can use their prior knowledge effectively compared to novice. For example in the study of Chase and Simon (1973) done with chess masters, it was obtained that prior knowledge of participants affect their producing high level and fast performance (Cited in Feldon, 2007). Feldon stated that subsequent studies of expertise in various domains have found similar results regarding the role of prior knowledge in performance.

The experts' knowledge are represented as mental models in memory. Mental model is the representation of knowledge in memory that is acquired as a result of human perceiving and interpretating the real world (Johnson-Laird, 2010). Mental models are dynamic, abstract and cognitive based representations (Hoffman, 1996). These representations are organized as visual images (icons) and symbol series (propositional networks. scripts or schemes) in memory (Hoffman, 1996; Sternberg & Horvath, 1995). Mental models affect decision making processes. Decision making skill on the other hand requires reasoning and deduction. Reasoning and deduction base on both intuitive (implicit) and deliberate thinking processes (Johnson-Laird, 2010). Rouse and Morris (1986) stated that when information are represented in memory as spatial, pictorial or images, it is difficult to verbalize a mental model; however when a mental model is represented as symbols (propositions involving causal relationships) or verbal, verbalization can be easier (Cited in Speelman, 1998). Speelman (1998) stated that experts having implicit knowledge cannot explain mental models responsible for performance with conscious awareness in contrast adaptive experts can express mental models verbally. Accordingly it can be said that an expert needs to examine mental models in order to understand especially implicit mental processes. However Speelman stated that mental models of experts cannot easily be taken out because there is the vague of definitions of them.

The Role of Implicit Learning and Implicit Knowledge in the Development of Expertise

Conceptual, procedural, situated and strategic knowledge types that were mentioned above are effectively used by experts in solving of a problem. In addition, these knowledge can be known partly implicit or explicit (Knight, 2002; Neuweng, 2004). For example Tomlinson (1999a) expressed that declerative and procedural knowledge which is necessary for professional development can be both implicit and explicit. In studies of expertise the presence and role of implicit knowledge are frequently mentioned (Björklund, 2007; Cianciolo,

Grigorenko, Jarvin, Guillermo, Drebot, & Sternberg, 2006; Elliott et al., 2011; Herbig & Büssing, 2004; Speelman, 1998).

Experts have a lot of knowledge about their own domains and they have to show this knowledge in order to improve their expertise. However in time experts lose their own consciousness regarding what they know, why they do and how they do. Experts cannot describe the rules and procedures that they use in achieving a task (Hoffman, 1996; Speelman, 1998). When experts are asked for fulfilling a task by focusing on specific elements or keeping to rules strictly, their performance of task retrogresses (Neuweg, 2004). Incompatibility between superior performance of experts and their verbal explanations is explained with their implicit knowledge. Speelman uses the term "implicit expertise" in order to define individuals having particular knowledge and skills that cannot be explained verbally but can be taken out with only performance tasks.

Problem solving and decision making processes of experts often perform in the nonconscious (Speelman, 1998). Deliberate thought and knowing are accepted as a necessary condition for skillful performance that needs the intelligent action however are not considered as a sufficient condition (Neuweg, 2004). An individual does not always show the effort with conscious awareness in acquiring knowledge and skills process. In other words people do not use conscious thinking processes in every intelligent action and cannot explain every intelligent behaviour. For example in a study conducted by Renkl et. al (1994) it was obtained that graduate students of economics (having explicit knowledge) were less successful than laymen in controlling in the computer based economic simulation (Cited in Neuweg, 2004).

Implicit knowledge is a knowledge that is resistant to conscious access and cannot be explained to other people consciously what it is and why it happened. Even a person may not explain this knowledge to himself (Taylor, 2007). Wagner and Sternberg (1985) defined implicit (tacit) knowledge as *the generally unspoken knowledge gained from experience which distinguishes more and less expert individuals in a particular domain*. (Cited in Cianciolo et al.. 2006). Implicit knowledge is important for an individual in choosing, shaping of context and in his accordance to the context (Sternberg & Horvath, 1995). Michael Polanyi defined implicit knowledge with this sentence "we can know more than we can say" (Cited in Reber, 1993). Accordig to Nonaka (1994) implicit knowledge has both cognitive and technical elements. Technical elements of implicit knowledge mostly represents concrete know-how, crafts, and skills that apply to specific contexts. Whereas the cognitive elements of implicit knowledge involves schemata, paradigms, beliefs and viewpoints that help individuals to perceive and express the real world, Nonaka expressed that cognitive elements of implicit knowledge is related with "mental models" presented by Johnson-Laird (2010).

Implicit learning has an important role in acquiring implicit knowledge. According to research results on implicit learning as individuals cannot recognise knowledge in the root of complex tasks they can achieve the task successfully (Reber, 1993). Process of acquiring knowledge and skill of human without deliberate, conscious awareness is explained as implicit knowledge (Mathews, Roussel, Cochran, Cook, & Dunaway, 2000). Reber (1993, p.5) defined implicit learning as the acquisition *of knowledge that take place largely independently of conscious attempts to learn and largely in the absence of explicit knowledge about what was acquired.* Implicit knowledge is obtained without conscious reflective strategies (Reber, 1989). In implicit learning, the behaviours of individuals become sensitive to the structural features of a situation and the adaptation process take place intentionally without using explicit knowledge about features of the situation (Pacton, Perruchet, Fayol, & Cleeremans, 2001). Lewicki, Czyzewska and Hill, (1997), expressed that in well established practices in education.

individuals can acquire various important skills without conscious awareness. However they cannot transfer this knowledge derived from experience easily to others.

Implicit learning is a fundamental process involved in different domains such as mother-tongue and foreign language (or second language) learning, category elaboration, reading and writing acquisition, and acquisition of knowledge about the physical world or social skills (socialization) in the literature (Pacton et al., 2001). Implicit learning also plays an important role in the pattern recognition, development of personality as well as acquiring expertise skills or professional experience (Lewicki et. al., 1997). Implicit learning was comprehensively examined in domains such as artificial grammar learning (Reber, 1993), serial reaction time tasks, motor learning (Seger, 1997) and dynamic systems tasks (Berry and Broadbent, 1988). Although implicit learning take place in real-life situations, it is stated that there is an important gap in transferring (generalising) of results derived from implicit learning studies to natural context learning (Pacton et al., 2001). Similarly in acquiring of expertise knowledge and skills regarding a profession in the real-world learning, it cannot be said that implicit learning is exploring sufficiently.

Interaction of Implicit and Explicit Knowledge

Complex mental abilities that is required by expertise are acquired as a result of balance and interaction between conscious (explicit) and unconscious (implicit) mental processes (Anderson, 1993; Reber, 1993; Tomlinson, 1999a), Polanyi (1966, p.4) classified knowledge of human in two ways as explicit and implicit knowledge. Explicit knowledge is a coded knowledge that can be transmitted via systemmatic language on the other hand implicit knowledge is personalized that is hard to formalize and transmit (Cited in Nonaka, 1994). Even the best experts are stated to make mostly deficient or inaccurate descriptions regarding problem solving because there is not always consistency between these two knowledges in mind (Mathews et al., 2000).

An expert needs to think both implicit, intuitional and deliberate reasoning in the presence of new problem situations (Knight, 2002; Tomlinson, 1999a). Schön (1987, p.22) explained that mental action and thoughts that are related to the professional artistry in two ways as knowing-in-action and reflecting-in-action. According to Schön *knowing-in-action* defines skillful performance that we cannot explain how we do the action and what we know. In other words knowing-in-action is an action that is resulted implicitly. However these implicit mental structures are dynamic and converted into explicit symbolic shape in the process of time. When we define what and how we know in action. We can convert it into explicit form. Schön stated that experts can produce solution by using deliberate analytic processes in action in the face of any problem. According to Schön (1987, p.26) reflection may not take place only in the action but middle or after of action. In order to search the structure of knowing in action, it can be said that reflection in action should be examined.

The knowledge that individuals derive and use are not in static structure. The knowledge types can be converted into each other. For example Anderson (1993) expressed that a human firstly acquires declerative knowledge and then declerative knowledge converts into procedural knowledge for development of cognitive skills. Similarly Nonaka (1994) stated that there is also a conversion between implicit and explicit knowledge. Especially in organizations, this transform was examined in terms of creation process of new knowledge. According to Nonaka (1994) the relation between explicit and implicit knowledge is like this: *1. From implicit knowledge to implicit knowledge; 2. From implicit knowledge to explicit knowledge 3. From explicit knowledge to implicit knowledge; 4. From explicit knowledge to explicit knowledge.* The conversion between implicit and explicit knowledge was summarized in Table 2 thereby

benefitting from different sources (Knight, 2002; Mathews et al. 2000; Nonaka, 1994; Nonaka & Toyama, 2003).

Table 2
Conversion between Implicit and Explicit Knowledge

	Implicit knowledge →	**Explicit knowledge**
Implicit knowledge	**Socialization** -Constructed via shared experiences socially -Acquired by observation. imitation. and practice -Learning from via master-apprentice relationship or peers -Can be personalized or cultural (social)	**Externalization** - Expressing by reflection or metacognition -Discursive consciousness or meaningful dialogue among individuals -Describing through metaphors. analogies. Storytelling, visualization. probing
Explicit knowledge ↓	**Internalization** -Explicit knowledge is converted into tacit knowledge through praxis and action –When this knowledge is used in practical situations. implicit knowledge is enriched -Can be placed into experiments or simulations -Conversion can be individual or organizational	**Combination** - Can be derived from direct instruction. books. networks etc. - By classifying (sorting) explicit knowledge - By adding new knowledge - By recategorizing and recontextualizing of explicit knowledge - Consciously think about concepts or read written documents in the domain

According to Nonaka (1994) there are two important factors that determine the quality of implicit knowledge of individuals. These are high quality experience and the knowledge derived from practical experience. Experiences derived from communities of practice, is a determiner factor in developing of implicit knowledge (Nonaka, 1994; Knight, 2002). However, familiar and routine practices does not increase the quality of implicit knowledge. Instead there should be diversified practices or learning situations. In order to produce a new knowledge or to increase the quality of knowledge, there should be a continuous interaction between implicit and explicit knowledge. However, it is expressed that especially some parts of implicit knowledge regarding with creativity, skillful performance and intuitional cannot be externalized (Taylor, 2007).

Measuring Experts' Knowledge and Skills

It is stated that in traditional researchers to obtain differences between performances of an expert and a novice, psychometric tests that measure general abilities of an individual such as intelligence, cognitive/perceptual abilities are used. However these researches are criticised since they cannot stand their explanations regarding observed performance differences on steady theoretical framework (Ericsson &Towne, 2010). Expertise skills not completely but mostly are not found related with general mental abilities. Because an expert person in domain-specific may possess low abilities outside their domain of expertise (Hoffman, 1996). In contrast Kaufman (2007) suggested to examine cognitive and physical abilities as well as individual differences in the context of various psychological approaches in order to understand the nature of expertise comprehensively. Therefore in the reaserches, the criteria for defining an expert must also be searched in detail. But it is expressed that performance assessment criteria that define expert show differences according to domains and are inconsistently applied among situations (Feldon, 2007). Feldon stated that the studies of

expertise participants generally are the ones that can achieve one or a few of the criteria (e.g. Task performance, his status among colleagues or experience) that define expert.

In order to provide a novice to perform like an expert when they come across similar situations in the future measuring of superior performances of an expert becomes important (Ericsson & Towne, 2010). Ericsson and Towne expressed that measuring of expert's performance of may be possible by standardized tasks under controlled conditions. For revealing an expert's knowledge and its representation in mind. techniques for accessing that knowledge should be constructed closer to the expert's mode of access that knowledge (Speelman, 1998). It was also reported that studies of expertise are mostly conducted experimentally and generally the tasks such as recalling, perceiving, categorizing and verbal reports are used (Chi, 2006b). These tasks are familiar tasks or contrived tasks.

One of the most important problems encountered in measuring of expert knowledge is how implicit knowledge is measured (Speelman, 1998). In researches if implicit knowledge of an expert is not taken into consideration. it can be said expertise will be defined incompletely. Especially when the role of implicit knowledge in developing a product. problem solving and decision making is taken into consideration. revealing implicit knowledge of an expert becomes more importance. Neuweg (2004) mentioned that the externalising of an expert's implicit knowledge would enable us to shorten a beginner's learning process. However since what experts say is different from what they do. it is hard for them to explain their problem solving methods to novice (Speelman, 1998). Hoffman (1996) said carefully prepared learning tasks are needed since we cannot rely on one method to reveal implicit knowledge. to definite implicit reasoning processes and to demonstrate expertise. In order to reveal expert's knowledge structure, methods such as concurrent or retrospective verbal reports. questionnaire forms, interviews are suggested (Ericsson & Towne, 2010; Speelman, 1998). These methods are generally used after an expert accomplished a task or left the task and they needed to define processes involving performance of task of an expert. However expert knowledge is context-sensitive and since these methods are used in out of the situation where the task achieved. they are criticised not to give access opportunity to the knowledge of expertise totally (Speelman, 1998). The other method to take out expert knowledge is think aloud protocols. This method is preferred to get more records (Berry, 1987; as cited in Speelman, 1998, p.138). In this method, it is suggested that more information about thinking processes occurring during performance and the nature of these processes rather than following the performance of an expert, will be obtained. However there are also some limitations in thinking aloud protocols. These limitations were summarized from different sources (e.g. Bainbridge, 1977; Berry, 1987) by Speelman as follows:

1. Protocols are incomplete. They provide information about expert knowledge. but not the full range of knowledge. That is they cannot indicate the limits of an expert's knowledge. ….
2. Experts often cannot verbalize as fast as they can reason. and so they may leave out steps in their reasoning process. or leave out things that seem "obvious" to them.
3. Experts may not mention all of the information attended during performance. This can lead to unexplained behaviour.
4. Providing a protocol may not be possible if the task itself involve some form of verbal communication.

5. Experts need experience at thinking aloud to provide effective protocols. Giving a running commentary often can be a demanding secondary task. As a result, mental capacity may be limited fort the task of interest and so performance of this task could be affected.(…).
6. Having to provide a commentary during performance changes the task situation and so may affect the way in which the task is performed. Experts may become self-conscious and this could affect their method of operation. (…) (pp.138-139).

There are also various scale development studies to assess implicit knowledge of expert (Cianciolo et al., 2006; Elliot et al., 2011; Insch. McIntyre & Dawley, 2008). According to Wagner and Sternberg (1985) knowledge tests resembling general or academic intelligence tests can be used to measure implicit (tacit) knowledge of an expert in development of expertise (Cited in Cianciolo et al., 2006). Another technique that came out in recent years is Repertory Grid Technique (RGT) that bases on Personal Construct Psychology Theory developed by Kelly (1955) (Björklund, 2007, 2008; Herbig & Büssing, 2004; Rozenszajn & Yarden, 2015). For example Rozenszajn and Yarden (2015) used Repertory Grid technique to elicit and probe biology teachers' tacit views about the relationships between their content knowledge and pedagogical content knowledge. In another study carried out by Herbig and Büssing (2004). They used RGT to measure their implicit knowledge and to examine explicit and implicit knowledge of successful (good) and unsuccessful (poor) nurses. It is also implied that naturalistic methods (observation, interview etc.) can be used to examine implicit knowledge and skills of expert teachers in addition to experimental ones (Elliot et al., 2011; Smith & Strahan, 2004). Smith and Strahan (2004), carried out a case study to measure three expert teachers and obtain more comprehensive data. They examined expert performance of teachers by taking criterions in prototype approach that Sternberg and Horvath (1995) suggested. As a result both quantitative and qualitative methods can be used to examine expertise in teaching. The most important problem here is how the criterions will be determined that help us to decide about implicit knowledge of expert. In future studies we have to express clearly why and which knowledge of an expert we coded as the implicit knowledge. Moreover it is carefully important to prepare complex problem situations or scenerios that are used in study of expertise because the experts usually use prototypes of previous examples (or cases) to explain their decisions and actions in encountered problems (Hoffman, 1996). Consequently in order to elicit the experts' knowledge, how experts use their knowledge and how they represent that knowledge can be examined by using qualitative and quantitative methods.

It is seen that the issues such as conscious thinking or reflection and expertise have been examined in teacher education studies with increasing interest since 1970s (Björklund, 2007; Jonsson & Lennung, 2011; Tomlinson, 1999a). In addition to this pre-service teacher education has more or less effect in acquiring expert's knowledge and skills (Jonsson & Lennung, 2011). Jonsson and Lennung examined whether the analytical skills of prospective teachers had developed throughout education. At the end of research it was stated that the performances of prospective teachers performed the same level during the first and the last semester; that these skills did not improve during pre-service teacher education. They found that pre-service teacher education programme is insufficient in developing skills needing this kind of expertise. Therefore in Turkey, the effect of pre-service teacher education curriculum in acquiring expert's knowledge and skills can be questioned.

The most important factor in educating of pre-service teachers is knowledge types that they should have and their quality. Skills to use of conceptual knowledge, procedural knowledge, situational knowledge and strategic knowledge is said to be effective in development of teaching expertise. Professional development and study require an

accordance between these different knowledge types (Knight, 2000). Shulman (1986) classified basic knowledge types that an effective teacher has to have as knowledge of content, pedagogic content knowledge and curricular knowledge. Shulman stated that these knowledge that a teacher has to have can be represented in real classroom settings as conceptual knowledge. procedural knowledge, situational knowledge and strategic knowledge. Representation styles of knowledge stated by Shulman coincide with knowledge types that an expert can use in problem solving and decision making process. The situations encountered in real classroom settings mostly require making decision and fast, concrete, accurate and effective solutions of a teacher (Korthagen & Kessels, 1999). Korthagen and Kessels expressed that both epistemic knowledge and phronesis should be used in real classroom settings. Practical knowledge of teachers was explained with phronesis (practical wisdom/mind) concept of Aristotle (Elliot et al., 2011; Korthagen & Kessels, 1999). Phronesis is perceptional rather than conceptual. it is situational and mostly stands on unconscious actions (Korthagen & Kessels, 1999). Accordingly it can be said that practical wisdom (phronesis) contains implicit knowledge and values. Elbaz (1991) expressed that teachers' knowledge is non-linear, imbued with personal meanings, and mostly implicit (Cited in Korthagen & Kessels, 1999).

Conditions such as teaching that needs special professional knowledge and skill is a complex environment to contex-sensitive (Tomlinson, 1999a). According to Tomlinson such situations require problem solving via conscious deliberation. Conscious problem solving and reflective thinking convert to be intuitive with practice at the end. Again implicit knowledge is a situational knowledge since it is derived via practicum achieved at specific contex (Björklund, 2008; Nonaka, 1994). In other words it can be said that teacher's knowledge can be represented in mind both as explicit and implicit knowledge and teachers may need implicit knowledge as well as explicit knowledge in real classroom settings which is to be socio-cultural context-sensitive (Brown et al., 1989; Kim & Hannafin, 2008). For development of teaching expertise teachers' implicit knowledge can be revealed via reflections and discussions (Elliot, 2011).

Implicit knowledge is derived via interactions with others and with experience in a community of practice (Knight, 2002; Mathews et al. 2000). However acquisition of implicit knowledge is more dependent upon the ability to learn from that experience (Elliot et al., 2011). In this sense pre-service teacher are said to be acquired expertise primarily at faculty via education, experience and practice. During this period, knowledge that will support development of teaching expertise can be acquired in implicit and explicit way. Accordingly past experiences of teachers and pre-service teachers (Minstrell, 1999) will affect the quality of implicit knowledge. Although the importance and the role of implicit knowledge in development of teaching expertise is frequently emphasized in literature (Elliot, 2009; Korthagen & Kessels, 1999; Minstrell, 1999; Torff, 1999; Tsui, 2003) it cannot be said that implicit knowledge was studied on comprehensively. In contrast, Elliot et. al (2011) suggested that investigation of implicit knowledge will be an important step for holistic understanding of effective teaching components.

How is teaching expertise of a teacher decided? About this subject Sternberg and Horvath (1995), said that researchers limit expertise mostly with reflective thinking/practicum and compare experts and nonexperts by using a simple list (ad hoc). So it can be said criterions to identify expertise should be defined by standing on a rather careful and theoretical basis. Also it may be difficult to identify the boundaries of them in because expertise is context-sensitive. Again in teaching expertise different stages (such as pre-school, primary school, high school etc.) require different skills. In addition to implicit knowledge of teachers reflect not only knowledge and skills but also values, beliefs and individual aims (Elliot et al., 2011; Korthagen

& Kessels, 1999; Neuweng, 2004). Accordingly expertise of teacher can be examined in terms of both teaching and interpersonal relations, the creation of positive classroom environments, behaviour management. socio-cultural context of classroom (Elliot, 2009; Elliot et al., 2011; Strenberg & Horvath, 1995).

Implicit knowledge is a knowledge in use (Neuweg, 2004). Expert educators can show their expertise by placing their own implicit knowledge into teaching practicum. Acquiring of implicit knowledge is achived mostly by good examples, reflective (explicit) knowledge is achieved from our own reflecting ideas, books and formal teachings (Mathews et al., 2000). This knowledge can reflect others mostly via demonstration, examples and practices (Elliot et al., 2011). Accordingly practices and authentic learning experiences in real classroom environment are effective in acquiring of implicit knowledge and skills of prospective teachers.

It can be said that revealling implicit knowledge in teaching expertise is important. Some of knowledge and skills that prospective teachers acquire implicitly may not be inconsistence with scientific knowledge about teacher education (Torff, 1999). The implicit knowledge derived from past experiences may be inaccurate or show difference from scientific knowledge in the domain. That is why teacher educators aim to make these inaccurate implicit knowledge explicit and conceptualise them correctly (Korthagen & Kessels, 1999). From this point of, it can be said that teacher educators have an important responsibility in acquiring implicit knowledge in pre-service teacher education.

It is expressed that expert and novice teachers show differences in producing solutions for the issues such as within class interactions, learning-teaching processes, classroom management etc. (Elliot, 2009). For example in the study of Elliot and others found that experienced teachers and novices do not differ significantly in terms of the ability to identify good solutions to situational problems, however they differ significantly in their skills at identifying poor solutions to these same problems. As a result they suggested that implicit knowledge in this particular domain is not so much a matter of learning how best to approach a problem so much as it is about learning how to avoid making a really bad decision. In this study it was expressed that only one year in teacher education can reduce many differences between expert and novice.

Conclusion

In this research the role and importance of implicit knowledge and implicit learning in teaching expertise in pre-service teacher education is focused. Teaching expertise can lead effective and efficient learning outcomes. The most determinant element of teaching expertise is teacher's knowledge. Teacher's knowledge is largely implicit. Implicit knowledge can be known as the reason of differences in performances of new beginner teachers, expert and novice teachers. Therefore it can be said that acquiring implicit knowledge of prospective teachers is important in terms of developing teaching expertise. Implicit knowledge can be observed in teaching practicum, problem solving and decision making processes of teacher. Since this knowledge is derived via experiences sensible to experiences necessary importance should be given to the teaching practicum for prospective teachers. Also, implicit knowledge has individual, perceptual and intuitional features. So prospective teachers can have inaccurate implicit knowledge, values or beliefs via his past experiences during pre-service education. This situation may affect his teaching implementations when he starts teaching.

Implicit knowledge is a personal knowledge as well as a knowledge that is shared as collectively and culturally and can be derived from our interactions from other people (Nonaka. 1994). In this sense most of the knowledge that prospective teachers derive from more experienced teacher educators, is also implicit. Elliot and others (2011), mentioned that

professional knowledge and skills of prospective teachers should be acquired by mentors. However the knowledge of expert teacher educators is largely represented implicitly (Elliot et al., 2011; Strenberg & Horvath, 1995). So the interactions of prospective teachers with experienced teacher educators can be examined in terms of implicit learning and implicit knowledge. In pre-service teacher education how novice learners be specialized in terms of both knowledge and problem solving, decision making process and value and attitude can be examined. It can also be said that insufficient studies in Turkey regarding implicit dimension of teaching expertise is an important gap whereas this subject is mostly discussed and examined in abroad (Brevik, 2014; Elliot et al., 2011; Hoekstra, Beijaard, Brekelmans, & Korthagen, 2007; Smith & Strahan, 2004; Tsui, 2003). Also implicit knowledge should be examined in scope of Episteme versus Phronesis conflict which is mostly mentioned in teacher education (Korthagen & Kessels, 1999). As a result via qualified teaching practicum interaction and conversion of explicit and implicit knowledge can be given chance. In this study the relationship between implicit knowledge, implicit learning, expertise and teaching expertise are followed. In this context this study can be considered as a source for empirical studies that will be done in the future.

References

Anderson, J. R. (1993). *Rules of the mind*. Hillsdale, New Jersey: Lawrence Erlbaum Associates. Inc.

Aydın, M., & Çelik, T. (2013). Sosyal bilgiler öğretmen adaylarının yansıtıcı düşünme becerilerinin bazı değişkenler açısından incelenmesi. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, 34*(II), 169-181.

Brown, J. S., Collins, A., & Dugid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, *18*, 32-42.

Berliner, D. (2001). Teacher expertise (Chap.3). In F. Banks, & A.S. Mayes (Eds.). *Early professional development for teachers* (pp. 20-26). London: The Open University & David Fulton Publishers.

———— (2004). Describing the behavior and documenting the accomplishments of expert teachers. *Bulletin of Science, Technology & Society*, *24*(3), 200-212, doi: 10.1177/0270467604265535

Berry, D. C., & Broadbent, D,E. (1988). Interactive task and the implicit –explicit distinction. *British Journal of Psychology*, *79*, 251-272.

Björklund, L. (2007). *The intuitive practitioner: Cognitive aspects on the development of expertise.* Paper presented at the the 13th International Conference on Thinking, Norrköping, Sweden. doi:10.1.1.101.5882 .

———— (2008). The repertory grid technique: Making tacit knowledge explicit: Assessing creative work and problem solving skills. In H. Middleton (Ed.). *Researching technology education: methods and techniques* (pp. 46-69). Rotterdam, Netherlands: Sense Publishers. Retrieved from http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-69231.

Boekhout, P., van Gog, T., van de Wiel, M,W. J., Gerards-Last, D., & Geraets, J. (2010). Example-based learning: Effects of model expertise in relation to student expertise. *British Journal of Educational Psychology*, 80, 557–566. doi:10.1348/000709910X497130

Brevik, L. M. (2014). Making implicit practice explicit: How do upper secondary teachers describe their reading comprehension strategies instruction? *International Journal of Educational Research*, *67*, 52–66

Calderhead, J. (1987). The quality of reflection in student teachers' professional learning [Abstract]. *European Journal of Teacher Education*, *10*, 3. doi:10.1080/0261976870100305

Chi. M. T, H. (2006a). Two approaches to the study of experts' characteristics. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman (Eds.). *Cambridge handbook of expertise and expert performance* (pp. 21-30). New York: Cambridge University Press. Retrieved from http://chilab.asu.edu/publish.html.

Chi, M. T, H. (2006b). Laboratory methods for assessing experts' and novices' knowledge. In K. A. Ericsson, N. Charness, P.J. Feltovich, & R.R. Hoffman. (Eds.). *Cambridge handbook of expertise and expert performance* (pp. 167-184). New York: Cambridge University Press. Retrieved from http://chilab.asu.edu/publish.html.

Chi, M. T, H., Feltovich, P. J., & Glaser, R. (1981). Categorization and representation of physics problems by experts and novices. *Cognitive Science*, *5*,121-152.

Cianciolo, A. T., Grigorenko, E. L., Jarvin, L., Guillermo, G., Drebot, M. E., & Sternberg, R, J. (2006). Practical intelligence and tacit knowledge: Advancements in the measurement of developing expertise. *Learning and Individual Differences*, *16*, 235–253.

Cochran-Smith, M. (2000). The future of teacher education: Framing the questions that matter. *Teaching Education*, *11*(1), 13-24. doi:10.1080/10476210050020327

De Jong. T., & Ferguson-Hessler, M, G, M. (1996). Types and qualities of knowledge. *Educational Psychologist*, *31*(2),105—113.

URL: http://dx.doi.org/10.1207/s15326985ep3102_2

Dreyfus, S. E. (2004). The five-stage model of adult skill acquisition. *Bulletin of Science. Technology & Society*, *24*(3), 177-181. doi: 10.1177/0270467604264992

Duban, N. & Yanpar Yelken, T. (2010). Öğretmen adaylarının yansıtıcı düşünme eğilimleri ve yansıtıcı öğretmen özellikleriyle ilgili görüşleri. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *19(*2), 343–360.

Elliott, J. G. (2009). The nature of teacher authority and teacher expertise. *Support for Learning, 24*(4).

Elliott, J. G., Stemler, S. E., Sternberg, R. J., Grigorenko, E. L., & Hoffman, N. (2011). The socially skilled teacher and the development of tacit knowledge. *British Educational Research Journal*, *37*(1), 83–103. doi: 10.1080/01411920903420016

Ericsson. K. A. (2006). The influence of experience and deliberate practice on the development of superior expert performance. In K.A. Ericsson, N. Charness, P.J. Feltovich, R. R. Hoffman (Eds). *Cambridge handbook of expertise and expert performance* (pp. 685–706). Cambridge. UK: Cambridge University Press.

Ericsson, K. A., & Towne, T,J. (2010). Expertise. *WIREs Cognitive Science*, *1*(3), 404–416.

doi: 10.1002/wcs.47

Ertmer, P. A., Stepich, D, A., York. C. S., Stickman, A., Wu. X.L., Zurek, S., Goktas, Y. (2008). How instructional design experts use knowledge and experience to solve ill-structured problems. *Performance Improvement Quarterly*, *21*(1), 17-42. doi: 10.1002/piq.20013

Farrell, T.S.C. (2013). Reflecting on ESL teacher expertise: A case study. *System, 41*, 1070-1082. http://dx.doi.org/10.1016/j.system.2013.10.014.

Feldon, D, F. (2007). The implications of research on expertise for curriculum and pedagogy. *Educational Psychology Review*, *19,* 91-110. doi 10.1007/s10648-006-9009-0

Glaser, R., & Chi, M, T, H. (1988). Overview. In M.T.H. Chi, . R. Glaser, & M, Farr (Eds.). *The nature of expertise* (pp. xv-xxviii). Hillsdale, NJ:Erlbaum. Retrieved from https://books.google.com.tr/books?

Hatano, G., & Oura, Y. (2003). Commentary: Reconceptualizing school learning using insight from expertise research. *Educational Researcher*, *32*(8), 26-29.URL: http://www.jstor.org/stable/3700083

Herbig, B., & Büssing, A. (2004). The role of explicit and implicit knowledge in work performance. *Psychology Science*, *46*(4), 408–432.

Hoekstra, A., Beijaard, D., Brekelmans, M., & Korthagen, F. (2007). Experienced teachers' informal learning from classroom teaching. *Teachers and Teaching: Theory and practice*, *13*(2), 189–206. doi: 10.1080/13540600601152546

Hoffman, R, R. (1996). How can expertise be defined? Implications of research from cognitive psychology. In R. Williams, W. Faulkner, & J. Fleck (Eds.). *Exploring expertise* (pp. 81–100). Edinburgh, Scotland: University of Edinburgh Press. Retrieved from https://www.culik.com/.../Defining%20Expertise.pdf

Insch, G, S., McIntyre. N., & Dawley, D. (2008). Tacit knowledge: A refinement and empirical test of the academic tacit knowledge scale. *The Journal of Psychology*, *142*(6), 561-579.

Kaufman, S. B. (2007). Commentary on Ericsson et al. investigating the role of domain general mechanisms in the acquisition of domain specific expertise. *High Ability Studies*,*18*(1), 71–73.

Kızılkaya, G., & Aşkar, P. (2009). The development of a reflective thinking skill scale towards problem solving. *Education and Science*, *34*, 154.

Kim, H., & Hannafin, M. J. (2008). Situated case-based knowledge: An emerging framework for prospective teacher learning. *Teaching and Teacher Educ*ation, *24*,1837–1845.

Knight, P. (2002). A systemic approach to professional development: Learning as practice. *Teaching and Teacher Education*, *18,* 229–241.

Korthagen, F.A.J., & Kessels, J.P.A.M. (1999). Linking theory and practice: Changing the pedagogy of teacher education. *Educational Researcher*, *28*(4), 4-17.

Köksal, N., & Demirel, Ö. (2008). The contributions of reflective thinking to pre-service teachers' teaching practice. *Hacettepe University Journal of Education 34,* 189-203.

Johnson-Laird, P,N. (2010). Mental models and human reasoning. *Proceedings of the National Academy of Science (PNAS), 107*(43), 18243–18250.

Jonsson, A., & Lennung, S. A. (2011). Investigating the development of analytical skills in teacher education. *Educational Measurement and Evaluation Review*, *2*, 3-17.

Lee, H. J. (2005). Understanding and assessing preservice teachers'reflective thinking. *Teaching and Teacher Education, 21*, 699–715.

Lewicki, P., Czyzewska, M., & Hill, T. (1997). Nonconscious information processing and personality. In D. C. Berry (Ed.). *How implicit is implicit learning* (pp. 49-72). UK: Oxford University Press.

Malderez, A., & Wedell, M. (2007). *Teaching teachers: Processes and practices*. London: Continuum International Publishing Group.

Mathews, R. C., Roussel, L. G., Cochran, B. P., Cook, A, E., Dunaway, D, L. (2000). The role of implicit learning in the acquisition of generative knowledge. V. Honavar (Action Ed.). *Journal of Cognitive Systems Research, 1,* 161-174.

McCormick, R. (1997). Conceptual and procedural knowledge. *International Journal of Technology and Design Education,* 7, 141-159.

Minstrell, J. (1999). Expertise in teaching. In R.J. Sternberg & J. A. Horvath (Eds.). *Tacit knowledge in professional practice* (pp. 215-230). Mahwah. NJ: Lawrence Erlbaum Associates. Inc.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, *5*(1).

Nonaka, I., & Toyama, R. (2003). The knowledge-creating theory revisited: Knowledge creation as a synthesizing process. *Knowledge Management Research & Practice*, *1*, 2–10.

Parkison, P. T. (2009). Field-based preservice teacher research: Facilitating reflective professional practice. *Teaching and Teacher Education*, *25,* 798–804.

Pacton, S., Perruchet, P., Fayol, M., Cleeremans, A. (2001). Implicit learning out of the lab: The case orthographic regularities. *Journal of Experimental Pyschology: General, 130*(3), 401-426.

Reber, A. S. (1989). Implicit learning and tacit knowledge. *Journal of Experimental Psychology: General*, *118*(3), 219-235.

Reber, A. S. (1993). *Implicit learning and tacit knowledge: An essay on the cognitive unconscious*. Oxford: Oxford University Press.

Rozenszajn, R., & Yarden, A. (2015). Exposing biology teachers' tacit views about the knowledge that is required for teaching using the repertory grid technique. *Studies in Educational Evaluation, 47*, 19–27.

Schön, D. A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions.* San Francisco: Jossey-Bass.

Seger, C. A. (1997). Two forms of sequential implicit learning. *Consciousness and Cognition*, *6*, 108–131. No: CC960285.

Semerci, Ç. (2007). Öğretmen ve öğretmen adayları için yansıtıcı düşünme eğilimi (yande) ölçeğinin geliştirilmesi. *Educational Sciences: Theory & Practice*, *7*(3), 1351-1377.

Shulman, L, S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, *15*(2), 4-14. URL: http://www.jstor.org/stable/1175860.

Smith, T. W., & Strahan, D. (2004). Toward a prototype of expertise in teaching: A descriptive case study. *Journal of Teacher Education*, *55*(4), 357-371. doi: 10.1177/0022487104267587

Speelman, C. P. (1998). Implicit expertise: Do we expect too much from our experts? In K. Kirsner, M. Anderson, C. Speelman, M. Maybery, A. O'Brien-Malone (Eds.). *Implicit and explicit mental processes* (pp.135-149). Mahwah. NJ: Lawrence Erlbaum Associates Inc.

————(2014). The acquisition of expertise in the classroom: are current models of education appropriate? *Frontiers in Psychology*. doi:10.3389/fpsyg.2014.00580

Sternberg, R. J., & Horvarth, J, A. (1995). A prototype view of expert teaching. *Educational Researcher*, *24*(6), 9-17.

Taylor, H. (2007). Tacit knowledge: Conceptualizations and operationalizations. *International Journal of Knowledge Management*, *3*(3), 60-73.

Tennyson, R. D., & Cocchiarella, M,J. (1986). An empirically based instructional design theory for teaching concepts. *Review of Educational Research*, *56*(1), 40-71.

Thiessen, D. (2000). A skillful start to a teaching career: a matter of developing impactful behaviors, reflective practices, or professional knowledge? *International Journal of Educational Research,* Chap, *4*(33), 515-537.

Tok, Ş. (2008). The impact of reflective thinking activities on student teachers' attitudes toward teaching profession. performance and reflections. *Education and Science, 33*(149).

Tomlinson, P. (1999a). Conscious reflection and implicit learning in teacher preparation: I Recent light on an old issue. *Oxford Review of Education*, *25*(3), 405–420.

————(1999b). Conscious reflection and implicit learning in teacher preparation: II Implications for a balanced approach. *Oxford Review of Education*, *25*(4), 533–544.

Toom, A., Husu, J, & Patrikainen, S. (2014). Student teachers' patterns of reflection in the context of teaching practice. *European Journal of Teacher Education,* doi:10.1080/02619768.2014.943731

Torff, B. (1999). Tacit knowledge in teaching: Folk pedagogy and teacher education. In R.J. Sternberg & J.A. Horvath (Eds.). *Tacit knowledge in professional practice* (pp. 195-213). Mahwah. NJ: Lawrence Erlbaum Associates. Inc.

Tsui, A. B., (2003). *Understanding expertise in teaching: Case studies of ESL teachers.* New York: Cambridge University Press.

The metaphors of preservice teachers about the concept of communication

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Abstract

The main purpose of this study was to determine the views of preservice teachers who had taken the courses of ''Effective Communication'' and ''Human Relations and Communication'' about the concept of communication through metaphors. The study group was composed of the preservice teachers who were attending the class of ''Effective Communication'' in the departments of primary school teaching and early childhood education and the class of ''Human Relations and Communication'' in the department of social sciences teaching. The study was a qualitative one. In order to collect the data. forms with a statement as ''Communication is like ..... because .....'' were distributed to 58 preservice teachers who were willing to participate in the study and they were asked to complete the statement. Then, a content analysis was implemented on the data collected through the forms with the statements given by the preservice teachers. The metaphors created by the preservice teachers were examined by their common features. Forty-five valid metaphors were categorized under five categories by their common features, considering the rationale. Except for the categories in the study, a process that was found to be considered was described as reflective, information source, and problem-solving tool. In the study, the most common metaphors were categorized under the category of ''Necessity'' and ''Process Requiring Attention''.

Keywords: Communication, preservice teachers, metaphors.

Introduction

Communication is described as an interactional process that enables the exchange of information, views, emotions and beliefs through verbal and written expressions, mimics, gestures, images, etc. between individuals, groups or communities (Demiray, 1994). This interactional process is an indispensable element of human life, and a social need. A healthy communication process underlies many of the problems of humans in both private and professional lives.

As in all stages of human life, communication has an important role in the stage of education as well. Communication in education is the most significant element of education. It is very effective in teaching the academic skills and knowledge targeted, and in classroom management. A teacher, in order to implement his or her own tasks successfully, must have not only the knowledge about the theory of psychology and communication, but also the communication skills (Yavuzer, 2003). Communication skills include all of the effective reaction and listening skills that enable someone to encode and transmit his or her own messages accurately, and to make sense of the messages received accurately (Deniz, 2003).

Within classroom, learning occurs during the process of teaching and learning. A successful teaching and learning process means a successful communication process. Effective in-class communication is a process that aims that teacher ensures a persistent behavioral change in his or her students' cognitive, affective and psychomotor behaviors in accordance with his or her curriculum. In modern education system, the communication type needed to be established in classroom is a mutual or effective communication. In this process, both sides might conditionally be either recipient or transmitter (Olgun, 2005). Effective communication is also the key for a successful classroom management. In order to enable students to be ableto learn, teachers must create a notable, reliable and comfortable classroom environment.

Successful teachers could turn a boring teaching material into an interesting material through their communication skills. However, some teachers might turn an interesting material into a boring material due to the lack of that skill (Ungureanu, 2011). At this point, one of the most critical variables in improving student's learning is to provide students with high-quality teachers. One of the factors that determine the quality of teachers is whether the teachers have the verbal or nonverbal communication skills. The need for teachers to have the communication skills was suggested by NBPTS (1999), INTASC (1992), and NCATE (1992) as the required standards in teacher training and teaching skills. These standards explicitly emphasize the importance of communication in teacher training (Hunt, Simond & Cooper, 2002). A modern effective teacher is a teacher who values ''the human'' as much as the teaching, who can establish effective communication with himself or herself and with the environment, and who has the responsibility to raise individuals with the ability to solve the problems faced and with high self-confidence. Also, it is a desirable condition for both sides that an effective communication occurs between a teacher and a student, and this has an important role in terms of education (Güven & Akyüz, 2001). Communications training is needed for academic, individual and professional success (Morreale & Pearson, 2008). In pre-service, the communications class is provided for preservice teachers to have the communication skills, which are highly important in teaching-learning process. It is expected for the students who took the course of communication to understand the importance of communication and what communication means, and have the communication skills. The reason why this study was implemented is that it was intended to determine what communication —which has an important role in education— means for the preservice teachers who took the communications course through metaphors, as metaphors help identifying how concepts are perceived. Accordingly, the main purpose of this study was to determine the views of preservice teachers who had taken the courses of ''Effective Communication'' and ''Human Relations and Communication'' about the concept of communication through metaphors.

Method

Research Design

In this study, phenomenology, one of the research designs suitable for qualitative research methodology, was used. In phenomenological studies, the phenomena that are recognized but on which there is no deep and extensive understanding, are focused on (Yıldırım & Şimşek, 2011, p. 72).

Study Group

The study group was composed of fifty-eight preservice teachers who were attending the class of ''Effective Communication'' in the departments of primary school teaching and early childhood education, and the class of ''Human Relations and Communication'' in the department of social sciences teaching.

Data Collection

In order to collect the data, forms with a statement as ''Communication is like …,.. because …….'' were distributed to fifty-eight preservice teachers who were willing to participate in the study, and they were asked to complete the statement. With the expression ''like'' in the sentence, it was intended to create a metaphor; and with the expression ''because,'' it was intended for the metaphor to be based on a reasonable cause.

Data Analysis

The processes of content and data analysis were implemented in four stages as ''naming,'' ''eliminating,'' ''categorizing'' and ''establishing the validity and reliability.'' Before analyzing

the data, the forms completed by the preservice teachers were designated as ''PT1'' (Preservice Teacher 1) and ''PT2'' (Preservice Teacher 2). The metaphors created by the preservice teachers were encoded by the number on the form.

In the second stage, the statements completed by the students were examined, and the forms of thirteen preservice teachers who had not provided any explanations by stating a reason were excluded from the analysis. Forty-five metaphors with justified explanations were obtained.

In the third stage, the statements completed by the preservice teachers were reviewed. The created metaphors were examined by their common features. The valid metaphors were categorized under five categories by their common features, considering the rationale.

In the fourth stage, in order to establish the validity of study results, the data analysis process was described and the metaphors obtained in the study were listed.

Furthermore, in Findings section, the examples that are thought to ideally express each of these five categories were described. In order to establish the reliability of the study, and to determine whether the metaphors under the five categories were falling into these categories, the metaphor categories established by a different researcher were contrasted. After the comparison based on agreement and disagreement, the reliability level was found to be at .90.(Reliability = Agreement / Agreement + Disagreement) (Miles & Huberman, 1994).

Results

The preservice teachers created 45 metaphors about the concept of communication. The metaphors created by the preservice teachers are shown in Table 1.

Table 1

Metaphors of Preservice Teachers about the Concept of Communication and Their Percentages

Metaphor	**f**	**%**	**Metaphor**	**f**	**%**
1- Shopping	2	4.44	16-Lemon	1	2.22
2- Key	2	4.44	17-Music	1	2.22
3-Driving a car	2	4.44	18-Breathing	5	11.11
4-Love	1	2.22	19-Oxygen	3	6.66
5-Mirror	2	4.44	20-Teacher	1	2.22
6-Food	2	4.44	21-Window	1	2.22
7-Brain	1	2.22	22-Psychlogist	1	2.22
8-Glass	1	2.22	23-Travelling	1	2.22
9-Marriage	2	4.44	24-Water	3	6.66
10-Photograph	1	2.22	25-Traffic	1	2.22
11-The sun	1	2.22	26-Soil	1	2.22
12-Light	1	2.22	27-USBCable	1	2.22
13-Medicine	1	2.22	28-Cooking	1	2.22
14-Heart	1	2.22	29-Eating	3	6.66
15-Book	1	2.22			
Total	45				100

The primary school teacher candidates who participated in the study created 45 valid metaphors. However, the number of metaphors decreased to 29 after the metaphors with the same name and similar rationale were grouped.

Table 2
Categories of Metaphors

Kategori	**f**	**%**
Necessity	20	44.44
ProcessRequiringAttention	10	22.22
Reflective	5	11.11
Information Source	3	6.66
Problem-Solving Tool	7	15.54
Total	45	100

The metaphors created by the preservice teachers with a similar rationale were grouped under the same category. Thus, the produced metaphors were collected under five categories.

Table 3
Necessity

Metaphor	**f**	**%**
Shopping	2	4.44
Food	2	4.44
Heart	1	2.22
Breathing	5	11.11
Oxygen	3	6.67
Water	3	6.67
Soil	1	2.22
Eating	3	6.67
Total	20	44.44

Under the category of ''Necessity,'' eight metaphors (shopping, food, heart, breathing, oxygen, water, soil, eating) were produced. Example statements written about these metaphors are shown below:

Communication is like shopping, because people must have the things they need physically. For this reason, they go shopping. Also, they need communication for the things they need emotionally, such as telling and wanting to hear love words (PT 6).

Communication is like food, because human life cannot be sustained without food. As we need food when we are hungry, we also need communication to explain our thoughts and emotions. Communication is necessary for meeting both our needs and the other side's needs (PT 12).

Communication is like the heart, because the heart is the indispensable organ of human body. The heart is important for our lives. The heart constantly pumps blood throughout our body. Our body gets the food needed for itself through blood. Communication, like the heart. is also essential for our lives. Through communication, we meet both our physical and psychological needs (PT 15).

Communication is like breathing, because communication is as essential for our lives as breathing. As people cannot live without breathing, they cannot live without communicating either. People want to express themselves. We cannot stand not talking (PT 13).

Communication is like oxygen, because as people need oxygen to live, they need communication as well. We need to talk, share our problems, joy and wishes (PT 21).

Communication is like water, because people cannot continue their lives without drinking water. As such, when there is no communication, the things people establish in their hearts and brains create problems. As the pain disappears when we drink water, there would be no problems when there is communication. Like drinking water, we always need to talk, share our problems. In short, both are necessary for life (PT 24).

Communication is like soil, because soil is one of the most essential sources for our lives. The fruits, vegetables and everything that we eat wouldn't be able to be grown without soil, and we wouldn't be able to live. As people could not meet many of their needs without soil, they could not get along with and solve their problems without communication, and there would be no love and respect; therefore, there would be no life (PT 32).

Communication is like eating, because eating is a necessity in human life. When we are hungry, we get angry and stressful; however, when we are full, we get happy. As we get happy when we are full, we also would feel peaceful when we could share some feelings with others and at least if we could make the other person smile (PT 41).

Table 4
Process Requiring Attention

Metaphor	**f**	**%**
Driving a car	2	4.44
Love	1	2.22
Marriage	2	4.44
Lemon	1	2.22
Music	1	2.22
Travelling	1	2.22
Traffic	1	2.22
Cooking	1	2.22
Total	10	22.22

Under the category of ''Process Requiring Attention,'' eight metaphors (driving a car, love, marriage, lemon, music, travelling, traffic, cooking) were produced. Example statements about these metaphors are given below:

Communication is like driving a car, because if we don't give attention while driving, we may cause accidents. This is an undesired situation. If we don't pay attention to the words we use while communicating, we may also cause undesired situations (PT 2).

Communication is like love, because it makes people both happy and sad. When a healthy communication is established, people get peaceful; on the other hand, when an unhealthy communication is established, it causes separation (PT 8).

Communication is like marriage, because two people must understand each other within the framework of respect and love for a happy marriage. There is no room for selfishness in marriage; there is a need to think reciprocally. Likewise, for an effective communication, people need to understand each other and show each other respect and love (PT 10).

Communication is like a lemon, because a lemon is both sour and sweet. If we use too much lemon in a meal, the meal would be too sour and it would not be so tasty. If we use lemon sufficiently, the meal would be tasty. Likewise, when we establish a successful communication, it's sweet, but if we cannot establish it well, then some unpleasant situations may occur (PT 27).

Communication is like music, because as we hear nice words like a melody when we tell the person we are communicating with nice words, when we tell bad words, then we will have to hear bad sounds like the sound of an untuned violin (PT 28).

Communication is like travelling, because there are also various ways in communication. Just as there is a possibility to have an accident while travelling, there is also a possibility to be misunderstood in communication. Just as we need to follow the rules and take measures while travelling, we also need to be careful while communicating (PT 33).

Communication is like traffic, because in traffic, if we don't follow the rules, we may have an accident. If traffic is not organized and rule-based, it may cause chaos. Likewise, there are some rules to be followed for a successful communication with people. We need to pay attention to the language we use, and be kind (PT 45).

Communication is like cooking, because while cooking, the more we follow the instructions and measures, and add our love into it, the better the result will be. Likewise, the more optimal and warmer our talking style, gestures and mimics are, the more pleasant the feedback will be (PT 1).

Table 5

Reflective

Metaphor	**f**	**%**
Mirror	2	4.44
Glass	1	2.22
Photograph	1	2.22
Window	1	2.22
Total	5	11.11

Under the category of ''Reflective,'' four metaphors (mirror, glass, photograph, window) were produced. Example statements about these metaphors are given below:

Communication is like a mirror, because it shows people themselves. When we look in a mirror, our physical features are reflected. Likewise, when we communicate with people, the way we treat them would be reflected in the same way. If we greet someone passing by, then he or she would greet us the same way, and if we communicate with him or her, then he or she would communicate with us too (PT 5).

Communication is like glass, because it shows us the person we are communicating with, or vice versa. The language and words we use give the person we are communicating with an opinion about us, and the language and words he or she uses give us an opinion about that person (PT 19).

Communication is like a photograph, because photographs show us persons, events, situations and eras. They provide us an opinion about subjects and persons. Likewise, the communication style people use gives us an opinion about people (PT 23).

Communication is like a window, because when we look through a window, we could see inside. Likewise, we could see inside of a person through communication. People's communication skills provide us insight about who actually they are (PT 36).

Table 6

Information Source

Metaphor	**f**	**%**
Book	1	2.22
Teacher	1	2.22
USB Cable	1	2.22
Total	3	6.66

Under the category of ''Information Source,'' three metaphors (book, teacher, USB cable) were produced. Example statements about these metaphors are given below:

Communication is like a book, because a person in communication, like a book, would try to reach the person he or she is communicating with as he or she is, and he or she would address that person. He or she is full of emotions, experiences, words and transmissions. He or she

makes the other person think about various things, makes him or her feel various emotions, and makes him or her learn new things (PT 39).

Communication is like a teacher, because teachers are both recipient and sender. They transfer information and give messages to other people, and they also receive messages from those people; however, they give messages themselves more. Likewise, communication is also reciprocal. Information is given and received (PT 44).

Communication is like a USB cable because it enables information or various things to be transmitted from two different points. Likewise, communication enables the information transmission. We both send and receive information (PT 17).

Table 7

Problem-Solving Tool

Metaphor	f	%
Key	2	4.44
Brain	1	2.22
The Sun	1	2.22
Light	1	2.22
Medicine	1	2.22
Psychologist	1	2.22
Total	7	15.54

Under the category of ''Problem-Solving Tool,'' six metaphors (key, brain, the sun, light, medicine, psychologist) were produced. Example statements about these metaphors are given below:

Communication is like a key, because just as there is always a key to open a door, the key we can use for solving all kinds of problems. There is no single problem that couldn't be solved or door that cannot be opened through communication. However, just as the same key cannot open every door, we also must choose our communication technique well in different situations (PT 3).

Communication is like the brain, because if we have a healthy brain, then we would think healthy, and produce solution ways. Similarly, if we have high communication skills, then we would solve the problems we face more easily. If we don't have, then we would always face problems (PT 30).

Communication is like the sun, because just as the people can see everything easily and implement their tasks, similarly, people would understand each other, express themselves better, and solve their problems through communication (PT 14).

Communication is like light, because when we put a light on, we get rid of the darkness and our environment get illuminated. Similarly, communication eliminates the obstacles, and enables us to see our environment and get enlightened (PT 29).

Communication is like medicine, because when we become ill, we get better by using medicine. Likewise, we would feel relaxed after communicating with people when we feel bad (PT 42).

Communication is like a psychologist, because people go to psychologist, share their problems and get relaxed when they cannot cope with their problems. Similarly, a healthy communication would make us feel relaxed as if we went to a psychologist, and make us feel good (PT 11).

Discussion, Conclusion & Implementation

The metaphors the preservice teachers who participated in the study produced, were categorized under five categories. The categories in the study were names as Necessity, Process Requiring Attention, Reflective, Information Source, and Problem-Solving Tool. In the study, the most common metaphors were categorized under the category of ''Necessity'' and ''Process Requiring Attention.''

Communication is a need. In other words, communication has a vital role in human life. Examining the example statements about the metaphors produced by the preservice teachers under the category of Necessity, it could be suggested that they related the concept of communication more to social needs. Maslow examined the human needs by their significance in a consecutive sequence. According to this sequence, reorganized in 1970, there is Physiological Needs in the first place. Security in the second place. Love and Belonging in the third place. Self-Respect in the fourth place. Intellectual Access in the fifth place, and Self-Actualization Needs in the sixth place (Ülgen, 1995). At this point, communication is equal to Love and Belonging, which is in the third place in the sequence, because an individual is in need of being accepted as a member of the community, and this could be achieved through communication.

Most commonly produced metaphors in the second place were categorized under the category of Process Requiring Attention. People who cannot manage the communication process can hardly get along with. A teacher's contribution level who cannot manage the communication process well in classroom and does not show enough attention to this process, would decrease. Communication management is a process that requires attention. Students must voluntarily be engaged with the classroom tasks without mocking them, making them blush, causing them damage. In communication, it is not only what you tell but also how you tell it. The things told must display mutual respect, and should not be depressing, offending and humiliating. The value given to the students must be reflected in the things told (Başar, 2005).

Most commonly produced metaphors in the third place were categorized under the category of Problem-Solving Tool. In order to solve the social and individual problems, people must exchange views and communicate with each other. While communicating, they must have conversational and discussion skills. If they don't have these skills, it's hard to solve the problems in a humanistic way (Işık, 2013). Therefore, it is highly important for an individual to have the communication skills in solving the problems faced.

Some of the metaphors produced by the preservice teachers were categorized under the categories of ''Reflective'' and ''Information Source.'' Most people cannot know what to tell, and when and how to tell it. Our communication style gives message to the other side about us and it would be understood whether we have the communication skills or not. Whether an individual has the communication skills provides the other person with positive or negative opinions about that individual. This could be described as the reflective feature of communication. Another feature of communication is that communication is the process of transmitting emotions and views mutually (Dökmen, 2003). Some of the metaphors produced by the preservice teachers suggested this feature of communication.

In conclusion, given the metaphors suggested in the study and the categories established based on these metaphors, it could be suggested that the preservice teachers who had taken the course of Communication understood the features and importance of communication. Communication is a social need, a source of information, and a problem-solving tool for people. The process of communication must be paid attention for a healthy communication.

The factors hindering the communication must be excluded from the process (Memişoğlu, 2004; Akbaşlı, 2012; Hoşgörür, 2004; MEB, 2011; Demir, 2003; Arslan, 2011). To achieve this, all people must have professional knowledge about how to manage the communication process. Especially when it comes to the profession of teaching, this becomes even more important. In preservice training for preservice teachers, it must be focused on improving the communication skills, and studies about how they reflect the training they had in their profession must be conducted.

References

Akbaşlı, S. (2012). Sınıf içi iletişim ve etkileşim. *Sınıf yönetimi* (Ed. R. Sarpkaya). Ankara: Anı Yayıncılık.

Arslan, F. (2011). *Sınıf yönetiminde öğretim elemanlarının iletişim davranışlarına ilişkin öğrenci görüşleri (Selçuk Üniversitesi İlahiyat Fakültesi Örneği)*. Yayınlanmamış Yüksek Lisans Tezi. Selçuk Üniversitesi, Konya.

Başar, H. (2005). *Sınıf yönetimi*. Ankara: Anı Yayıncılık.

Demir, K. (2003). *Örgütlerde İletişim Yönetimi*. Yönetimde Çağdaş Yaklaşımlar (Ed. C. Elma, K. Demir). Ankara: Anı Yayıncılık.

Demiray, U. (1994). *İletişim ötesi iletişim*. Eskişehir: Turkuaz Yayınları.

Deniz, İ. (2003). *İletişim becerileri eğitiminin ilköğretim 8. sınıf öğrencilerinin iletişim becerisi düzeylerine etkisi*. Yayınlanmamış Yüksek Lisans Tezi, Gazi Üniversitesi, Ankara.

Dökmen, Ü. (2003). *İletişim çatışmaları ve empati*. İstanbul: Sistem Yayıncılık.

Güven, A. & Akyüz, Y, M. (2001). Öğretmen adaylarının iletişim ve problem çözme becerilerine ilişkin görüşleri. *Ege Eğitim Dergisi,* 1(1), 13-22.

Hoşgörür, V. (2004). İletişim. *Sınıf Yönetimi* (Ed. Z. Kaya).Ankara: Pegem A Yayıncılık.

Hunt, S. , Simond, C, & Cooper, P. (2002). Communication and teacher education: Exploring a communication course for all teachers. *Communication Education,*51(1), 81–94.

Işık,M., & Biber, L. (2013). İletişim, İletişim Süreci ve İletişim Çeşitleri. *Genel ve Teknik İletişim* (Ed.Metin Işık). Konya: Eğitim Yayınevi.

Memişoğlu, S, P. (2004). Sınıfta İletişim ve Grup Etkileşimi Süreci. *Sınıf Yönetimi* (Ed. M. Şişman-S. Turan). Ankara: Pegem A Yayıncılık.

MEB. (2011).*Mesleki Gelişim İş Hayatında İletişim.* http://mebk12.meb.gov.tr/meb_iys_dosyalar/74/01/265684/dosyalar/2013_10/23100123_ihayatndailetiim.pdf (Erişim Tarihi:15.07.2015)

Miles, MB, & Huberman, AM. (1994). Qualitative Data Analysis (2nd edition). Thousand Oaks. CA: Sage Publications.

Morreale, S, P, & Pearson, J, C. (2008). Why communication education is important: The centrality of the discipline in the 21st century. *Communication Education*, 57(2), 224-240.

Olgun, F, B. (2005). *Sınıf öğretmenlerinin sınıf içinde etkili iletişim ortamı yaratma ve iletişimde fırsat eşitliği sağlama becerilerinin değerlendirilmesi.* Yayınlanmamış Yüksek Lisans Tezi, Cumhuriyet Üniversitesi, Sivas.

Ungureanu, M, M. (2011). *Proceedings of the Scientific Conference AFASES.* May 2011, 510-511, 2p.

Ülgen, G. (1995). *Eğitim psikolojisi birey ve öğrenme.* Ankara: Bilim Yayınları.

Yavuzer, H. (2003). *Çocuk psikolojisi.* İstanbul: Remzi Kitabevi.

Yıldırım, A, & Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.

DİZİN