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Full Length Research Paper

Students' attitude to cloud-based learning in university diverse environment: a case of Russia

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The paper explores the ways how Russian students with different social background view the cloud-based foreign language learning. The empirical data was collected through questionnaires and in-depth interviews of students from metropolitan and regional universities, taking into account the students' family incomes, ethnic and religious affiliation. Quantative and qualitative methods were combined to interpret the survey results. Statistical Package for the Social Science (SPSS) was used to process statistic data. The paper reveals the issues the students feel sensitive about. The research findings lead to the conclusion that it is the students' family background in terms of metropolitan or remote region origin and income level that most affect their positive/negative attitude and also the degree of aptitude to cloud-based learning. The research findings aim to contribute to better understanding of the issues regarding the overall cloud-based course design and implementation.

Key words: Cloud-based education, technology-supported foreign language learning, cultural diversity, ducation.

INTRODUCTION

Modern technologies have been changing and influencing the world of education with the strong focus on flexible ways for learning communities to access and share the information with a view to produce a new knowledge that matters both for the community as a whole and for an individual in particular. It is cloud-based learning that recently has become one of the most used terms when discussing the future of education. Cloud-based learning goes beyond a local institution server usage for educational purposes and lays technological grounds for learning community members to store and share learning objects. Developing multicultural environment makes it of current importance for university graduates to master foreign languages and mediate

across national cultures when working in multilingual specific professional settings. Thus, foreign language as a discipline becomes a must for university degree programmes curricula. So, universities turn to cloud-based language learning worldwide. The above statements stem from current publications related to the issues under study.

Research topic

The present research subject matter is the analysis of university students' attitudes to the cloud-based learning in general and foreign language training, in particular.

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The research object is the study of the above learners' attitudes taking into account their affiliation to social, ethnic, religious groups as the latter create the educational institutions multicultural landscape.

Research hypothesis

The authors' practice experience related to technology-supported foreign language training at University level has led to the present hypothesis that includes the following interrelated statements:

1. Russian students have different level of awareness and experience of technology inclusion into the academic studies; the above awareness and experience mostly relate to students' metropolitan/regional origin and family background, and might not be sensitive to students' ethnic or religious affiliation;
2. Russian students' attitudes to cloud-based foreign language learning hardly depend on the learners' affiliation to ethnic or religious community and are related to students' social background;
3. Students' dislikes of the cloud as a learning tool largely depend on the students' social background with particular focus on their way of life within a particular socio-economic environment;
4. Regardless of student identities' affiliation and social background university learners potentially view the cloud as a tool that goes beyond communication and might contribute to their professional development;
5. Students' values regarding cloud related foreign language learning vary due to their life within a particular socio-economic environment, and students might have specific expectations related to the cloud-based environment that relate to social aspects of learning;
6. Russian students with poor socio-economic background might view the potential cloud-based digital environment as a tool to get better access to learning resources, to get fair assessment and evaluation through learning.

Research goal

The research is aimed to analyse in what way Russian students' socio-cultural identity and background might affect their attitude to cloud-based learning in general, and foreign language skills training, in particular. The above issue has not been the subject matter to any research so far. The research results are meant to be used as background for drafting recommendations for culturally diverse university community that strives to go in line with cloud-computing-focused educational mainstream.

LITERATURE REVIEW

Scholars argue that cloud computing is supposed to be

the mainstream of educational technology (Chang and Gütl, 2010; Mansuri et al., 2014; Pretlow and Jayroe, 2010; Rizzardini et al., 2012; Uden et al., 2013; Uden, 2014; Venters and Whitley, 2012). The above technology potential has become the subject matter for research with regard to various educational settings, including schools (Tan, 2009), universities (Bogdanovic et al., 2011), corporations (Kim et al., 2010).

Current research reveals that cloud computing technology influences students' overall academic studies and foreign language learning in a positive way (Warschauer, 2011; Lin et al., 2014). Nevertheless, some scholars underline that representatives of different cultures (ethnic groups, Eastern or Western affiliation) might show different attitudes to cloud-based phenomenon due to their identities specific features (Ess, 2008). Current researchers view the identity as a complex phenomenon and a reflective self-concept that an individual derives from his or her family background, ethnic and religious affiliation, way of life within a particular socio-economic environment, etc. (Sim et al., 2005).

Scholars point out that Information and communications technology (ICT) should be used for e-learning in a culturally acceptable way (Al-Doub et al., 2010; Baroud and Abouchdid, 2010; Liu et al., 2003; Misko et al., 2005). Nonetheless, a major attention is drawn to the fact that in the digital age people's attitude to web-based technologies and human behaviour in the digital community depend on the individuals' affiliation to a social group (Borstom and Sandberg, 2011). Both researchers and practitioners stress that students with social background that is characterized by poor/ or limited social economic opportunities are likely to suffer from limited computer and internet access (Gorski, 2003), and feel fear about being excluded from the ICT supported learning process (Clarke, 2002). The situation makes scholars and policy makers across the world explore the ways and tools to overcome learners digital divide (Aguinaldo, 2013; Gorski, 2003; Henning and Westhuizen, 2004; Odunayo, 2013; Slate et al., 2002; Solomon et al., 2003). Special emphasis is laid on possible ways to enhance technology-based social connectivity for educational purposes (Nissenbaum, 2009). Mention should be made that scholars should also highlight issues related to particular requirements regarding learning objects for web-based language teaching (Başal and Gürol, 2014; Warschauer, 2003). The current literature brief review has resulted in the present research topic, hypothesis, goal and methodology.

METHODOLOGY

The research included individual questionnaires and in-depth interviews of Russian students with different social, ethnic, religious backgrounds. Special emphasis has been laid on the findings interpretive paradigm, that draws special attention to individuals' opinions, their interpretations regarding the situations under study (Willis, 2007; Wong, 2006).

Participants' selection criteria

The selection criteria included metropolitan/ regional location of the university whose students participated in the survey, students' geographical origin (Muscovites, those who came to study at Moscow universities, students from universities of other Russian regions), respondents' ethnic affiliation, their family and socio-economic background. The total number of the students participating in the research practices amounted to 358 individuals with varied social background from 7 Russian Universities that differed in terms of their metropolitan/regional location. Moscow-based respondents were invited by the research team to participate in questionnaires and in- depth interviews on premises of Moscow universities whose leadership and faculty agreed to support the research initiative, motivate students to participate in surveys. Students from universities of other Russian regions were invited to participate in the research as part of their academic and scientific inclusion into Moscow –based students' forums and conferences as it was the simplest way to collect relatively comprehensive data from socially and culturally diverse community. As the research stages involved different techniques and numbers of participants, the participants' profile and research steps are described separately.

1st stage: Mixed questionnaires

The questionnaires appeared to be the initial step of the research. The goal of conducting questionnaires was to identify the general picture and basic perceptions of university students regarding their attitude to cloud-based foreign language learning, their experiences with regard to possible priorities and difficulties. The questionnaire combined closed-ended and open-ended questions. This "mixed" form of questionnaire was designed to get a larger number of respondents' answers while saving respondents' time. Those interviewed were asked first to indicate the chosen Yes/No answer option and then to provide their additional explanations regarding open-ended questions. The open-ended questions allowed the respondents to formulate their own answers which helped the researchers to specify the students' general perceptions regarding cloud-based learning. Thus, questionnaires made it possible to combine 'how' and 'why' questions, on the one hand, and 'who', 'how much/many', 'what and where', on the other. The individual questionnaire data was processed, provided that the respondent agreed to disclose his/her family, social, cultural background (average/well-off/low income family, parents as business men/ state officials/ doctors, teachers, etc., nationality/ethnic community). The questionnaire included the following questions:

1. Do you know about cloud as computer technology? Yes/No
2. What do you think of this technology?
3. Do you use cloud? Yes/No
4. How/Why (for what purposes) do you use cloud?
5. Do you know about cloud-based learning? Yes/No
6. What do you think of cloud-based learning?
7. Have you got any experience in cloud-based learning? Yes/No
8. If you have any experience in cloud-based learning, then specify the field and length of study, express your opinion about this form of learning (positive and negative sides, difficulties)
9. Would you agree to be included in cloud-based foreign language learning? Yes/No
10. If you do not agree to be included in cloud-based foreign language learning, please give your reasons.
11. If you agree to be included in cloud-based foreign language learning, please explain what you expect from this form of learning.
12. Do you think cloud-based and traditional foreign language courses differ from each other? Yes/No
13. What is the difference between cloud-based and traditional foreign language courses?

14. Do you think you need additional training skills to start cloud-based foreign language learning?

Each interview required approximately 30 to 50 min to complete. All interviews were completed within a three month period and processed electronically through the university data processing system.

Respondents' profile

The total number of respondents who agreed to identify themselves in terms of personal information about family, social, cultural background, amounted to 358 individuals. There was a balanced proportion of students from regional and metropolitan universities. The metropolitan or regional origin of students who represented Moscow universities was also counted. 30% of the participants across Russia identified themselves as well-off families, 48% of the respondents classified themselves as average income families, and 22% as low income families. 30% said their parents had their own business, 38% said their parents worked at state agencies, and the rest worked at public institutions as doctors, teachers, economists, etc. Among 358 respondents, 122 individuals attributed themselves to the Russian nationality, others identified themselves as representatives from Northeast Caucasian ethnic groups (66), Ukrainians (18), Tatars (34), Kalmyks (21), Kazakhs (11) Bashkirs (23), Kirgыз(14), Uzbeks (12), Azerbaijanis (17), Udmurts (11), Koreans (9).

It is interesting to note that respondents by their own initiative along with their nationality or ethnic group affiliation pointed out their inclusion into Western culture (38%), Muslim culture (40%), and Buddhist culture (22%). The respondents' original "terminology" is reproduced in the above sentence, though the authors of the article are aware of rather "conditional" division of the world major religions and cultures. This led us to the assumption that the world major religious cultures as philosophical framework for the world perception might be taken into account for present and further research, besides students' affiliation to ethnic groups and nationalities. The questionnaires revealed that 30% of the respondents were Muscovites, 30% came to study at Moscow universities, 40% were students from universities of other Russian regions.

2nd stage: In-depth interviews

The next stage included in-depth interviews with those university students who had refused to be involved in cloud-based foreign language learning at the questionnaire stage. These interviews allowed researchers to explore and understand individuals' personal claims regarding the subject under study.

In-depth interview particular questions aimed to understand reasons for the students' negative attitude, and also focused on such issues as learning objects quality, students' requirements to the teacher and to the peers, to the procedure and techniques in relation to cloud-based foreign language learning process and environment.

The total number of those who participated in in-depth interviews came to 71 students that amounted to 19.8% of the total number of the survey participants. All interviews were conducted by professional interviewers on the face-to-face basis. The answers of only those who agreed to identify themselves in terms of personal information about their family, social, cultural background were counted for research data.

Respondents' profile

13% of the 71 respondents identified themselves as those from well-off families, 73% of the respondents classified themselves as

Table 1. Percentage of students in clusters, characterizing students' awareness of cloud-computing in education.

Clusters, characterizing students' awareness of cloud-computing in education	Percentage (%)
Students who were aware of cloud-computing technology	76
Students who used the cloud-computing technology for data storage	32
Students who knew about cloud-based learning technologies	43
Students who did not use this technology on technical grounds	14
Students who stayed apart from the cloud to keep privacy	10

average income families, 14% as low income families. 11% said their parents had their own business, 12% said their parents worked in state agencies, and the rest worked at public institutions as doctors, teachers, economists, etc. Some respondents attributed themselves to Russians (18), others identified themselves as representatives of Northeast Caucasian ethnic groups (5), Ukrainians (7), Tatars (4), Kalmyks (6), Bashkirs (6), Kirgiz (4), Uzbeks (4), Azerbaijanis (4), Udmurts (5), Koreans (3), and Kazakhs (5). Respondents pointed out their inclusion into Western culture (36%), Muslim culture (36%), and Buddhist culture (28%). The questionnaires and in-depth interviews revealed that 5% were Muscovites who studied at Moscow universities, 40% of the respondents were students from other Russian regions universities, 55 % came to study at a Moscow university from other regions. In terms of research methods in-depth interviews made it possible to combine 'how' and 'why' questions, and 'who', 'how much/many', 'what and where', as well.

Data statistic processing

Multivariate statistical methods (cluster, discriminant and factor analysis) and correlation analysis were used to survey data processing. A cluster analysis was used to specify what homogeneous groups could be identified as regards students' attitude to cloud-based learning. A discriminant analysis then profiled the above clusters in terms of those factors that specify the student groups characteristics. A factor analysis helped to determine a meaningful set of variables. The correlation coefficient was taken into account to measure the association between variables. Statistical significance of the student groups with different attitudes to cloud-based learning was scrutinized. To assess the significance of differences, the Student t-test was applied. SPSS was used to process the surveys data through the above methods.

RESULTS

Students' awareness of cloud-based learning

The cluster analysis resulted in identifying various clusters as regards students' awareness of cloud-based technology and its learning potential (students' percentage is shown in Table 1). Mention should be made that among those 43% of the learners who knew about cloud-based learning technologies there were 20% of Moscow students who finished Moscow schools, 10% of the students who came to study at Metropolitan universities, 13% of the students from regional universities. The students came from average income families (29%) and well-off families (14%). The percentage was not sensitive to students' inclusion into any ethnic community ($p>0$,

01). As regards 14% of the students who did not use this technology on technical grounds there was equally balanced percentage of students from Moscow and regional universities, from families with different income level, and representatives of various ethnic cultural communities. Among those 10% of the respondents who stayed apart from the cloud to keep privacy there were students who came from well-off families and studied either at regional universities (89%), or in metropolitan universities (11%). Special emphasis was laid on those 43% of the learners who knew about cloud-based learning technologies. This percentage included Moscow students who finished Moscow schools (20%), students who came to study at Metropolitan universities (10%), students from regional universities (13%), the students who came from average income families (29%) and well-off families (14%). The percentage was not sensitive to students' inclusion into any ethnic community ($p>0$, 01).

Students' experience in cloud-based learning

The above figures (on students' knowledge regarding cloud-based learning technologies) were practically repeated in the respondents' answer to the question about students' experience in cloud-based learning. When specifying the field and length of cloud-based studies, students said they had used the technology under study for learning materials and personal portfolios storage at school. They evaluated clouding technology positively but mentioned that technical problems might often become a stumbling block (21% of the students who finished Moscow schools, 22% of the students who finished regional schools). 15% of the students who finished Moscow schools, and 17% of the students who finished regional schools pointed to the negative fact that cloud technology was used only for information storage and presentation purposes and was not used for class community communication. The percentage was not sensitive to students' inclusion into any ethnic or cultural community ($p=0.828$).

Students' attitude to cloud-based foreign language learning

The cluster analysis resulted in identifying the two

clusters as regards students' readiness to engage in cloud-based foreign language learning: 80% of the learners agreed to engage in cloud-based foreign language learning while 20% stated the opposite. The percentage was not sensitive to students' inclusion into any ethnic or cultural community ($p > 0,01$) though it reflected the difference between students in view of their socio-economic background. The discriminant analysis demonstrated as statistically significant ($\lambda = 0,113$ $\chi^2 = 4,00$ $p < 0,0000$, 85% of matches belonging to the class) students' families financial status. The reasons for students' negative attitude to cloud-based language learning were revealed later on at the in-depth interviews. 80% of the students agreed to be included in cloud-based foreign language learning, and provided a set of statements regarding their expectations on the proposed format of studies.

Students' expectations and values related to cloud-based learning

As a result of factor analysis, the following factors characterizing students' expectations were identified, the percentage of explained variance was equal to 54%.

1st factor - ability to set an individual plan for course study (0.834), mentioned by 65%, including 44% of the metropolitan students and 21% of regional university students, both groups from average and well-off families,

2nd factor - more individual approach of the teacher to the student (0.832), mentioned by 64%, including 34% of the metropolitan students and 30% of the regional university students, both groups from average and low income families,

3rd factor - sustainable communication and learning group members discussions in a foreign language with the focus on the future profession (0.827), mentioned by 49%, including 39% of the regional university students and 10% of the metropolitan students, both groups from average and low income families).

4th factor - learning under the teacher's guidance (0.804, 0.793), mentioned by 56%, including 41% of regional university students and 15% of the metropolitan students, both groups from average and low income families).

5th factor - foreign language learning through the real world situations related to future profession and not the artificial and abstracted textbooks tasks (0.793), mentioned by 75%, including 52% of the metropolitan students and 23% of the regional university students, both groups from average and well-off families.

6th factor - detailed assessment and transparent objective assessment through clear-cut instruments (0.783).

7th factor - social inclusion and elimination of the existing social/financial differences between group members (0.749), mentioned by 41%, including 29% of the regional university students and 12% of the metropolitan students, both groups from average and low income

families.

The above percentage was not sensitive to students' inclusion into any ethnic or cultural community ($p > 0,01$). All of the above parameters were mentioned by the students who came from average and low income families. Students from well-to-do families underlined the importance of the individual course plan, sustainable communication, and the real world situations efficiency for foreign language course. The comparison of Moscow universities students' points of view and other regional universities students' opinions reveals that Moscow students focus more on individual learning trajectories while regional universities students think of sustainable communication and learning group members discussions under the teacher's guidance. 65% of the respondents mentioned that they would prefer to choose a monitor to organize their intra group communication and discussions for learning activities. Among this percentage there were 55% of the students who represented regional universities and came from average and low income families and 45% of the students who represented metropolitan universities and had the same family financial status. When asked about the difference between cloud-based and traditional foreign language courses, all the respondents explained that the relevant difference concerned the extent to which the ICT technology might be used through the course. Besides, all the respondents underlined the importance of face-to-face classroom discussions and simulations in a foreign language, apart from virtual collaboration. 56 % of the respondents said they did not need any additionally trained skills to start cloud-based foreign language learning, 33% mentioned they needed specific instruction regarding the cloud-based learning procedure (step by step guidance with regard to each module content and assignments). Among these 33% of the respondents, 26% were students from regional universities and from low income families. The rest of the respondents were from metropolitan universities and from low income families. What is more among these 33% of the respondents there were students who affiliated themselves with Muslim, Buddhist and Western cultures.

Reasons for students' negative attitude to cloud-based learning

20% of the respondents stated they would not like to be part of cloud-based learning community. Special emphasis is laid to socio-cultural profile of the above group presented in Table 2. The data processing revealed that the figures summarizing the respondents' answers to the questionnaire and in-depth interview questions made it almost impossible to identify the fixed correlation between the students' ethnic or religious affiliation and their attitude to the cloud-based learning and relevant replies ($p > 0,01$).

Table 2. Socio-cultural profile of students who rejected the cloud-based learning.

Students' geographical origin	Percentage (%)	Reasons to reject cloud-based learning	Cultural/religious affiliation in %
Students who came to study at a Metropolitan university from other regions	80	They came to Moscow to enjoy the full time studies to communicate with prominent professors in person, to enjoy the face-to face interaction with peer	Western culture (40%), Muslim culture (30%), and Buddhist culture (30%).
Muscovites	5	Did not like to be involved in the cloud-based learning as they came from low income families and had limited opportunities to use internet at home, they were afraid that the university would not provide good Internet access on its premises and they would have to search for Internet access at additional cost.	Western culture (50%), Muslim culture (40%), and Buddhist culture (10%).
Students from regional Russian universities	15	Fear regarding local university technology equipment and teachers' possible lack of readiness to properly organize cloud-based learning.	Western culture (30%), Muslim culture (40%), and Buddhist culture (30%).

Statistics about significant difference regarding variables

The overall discriminant analysis included 27 variables, registering students' geographical origin (metropolitan students/students who came to study at a metropolitan university/ students from regional universities), ethnical/religious affiliation (Western/Muslim/Buddhist culture affiliation) and family income status (well-off/ average/ low income). Two canonical functions were identified and proved the significant difference for further interpretation: students' socio-economic status (0,61% dispersion, $p < 0,000000$), students' geographical origin (0,32% dispersion, $p < 0,000005$). The functions are allocated as follows: on the students' socio-economic status function variables regarding students from well-off and average income families are at the pole of positive attitudes, while variables regarding students from

low income families are at the pole of negative attitudes. As regards the students' geographical origin function variables linked to Metropolitan students are at the extreme pole of positive attitudes, variables linked to students from other regional universities and variables characterizing students who came to study at a Metropolitan University from other regions are switching to the pole of negative attitudes.

DISCUSSION

Russian universities are characterized by really varied student community, social identity representation, learners have different experience of technology inclusion into the academic studies. The survey results showed that Russian students' attitudes to cloud-based foreign language learning hardly depended on the learners' affiliation to

ethnic or religious community ($p > 0, 01$). The data regarding the Russian cloud-based university environment go in line with A. Clark's (Clark 2002) findings as regards social exclusion through on-line learning in British educational institutions due to students' different social background.

According to the questionnaires, students' awareness of the cloud computing as a learning tool might be related to students metropolitan/regional origin and family background, and it is not sensitive to students' ethnic or religious affiliation ($p > 0, 01$). Although, only half of those questioned regarded the cloud computing as a learning tool. Students' awareness of cloud computing educational potential might depend on the students' previous schooling experience as regards location (regional/metropolitan) as the questionnaire revealed that metropolitan students had wider experience related to cloud use for educational purposes ($p < 0,003$). These findings

regarding the Russian higher education are apt to prove J. Sim, R. Viden and P. Powell's data revealing that e-learning in general does not exclude social economic elitism, for instance, in UK higher education (Sim, Vidgen, Powell, 2005).

It can be concluded that to some extent, students' dislikes of the cloud as a learning tool do not depend on the learners social, ethnic, religious, etc. affiliation and might arise from poor technical support ($p < 0,0001$). Besides, students' dislikes of the above technology might be related to privacy issues ($p < 0,001$), that concern mostly respondents who studied at regional universities and/or came from well-off families ($p < 0,04$). Thus, the present research data specify the importance of privacy matters for the cloud-based learning environment, though it was R. Sobel who previously indicated similar issues as relevant points with respect to web-based learning environment ethical aspects (Sobel 2012:48-49).

The questionnaire showed that vast majority of the respondents potentially viewed the cloud not just as a data storage instrument, but as a tool for communication in the learning environment with a view to learn foreign language for specific purposes related to future profession ($p < 0,01$). The above attitude was related neither to students' metropolitan/regional origin nor to their families' income level, or students' ethnic/religious affiliation ($p > 0,01$). The research data and its statics processing showed that it was not students' ethnic or religious affiliation but their families' financial status ($p < 0,01$), and students' regional/metropolitan origin ($p < 0,02$), that influenced the list of students' values regarding cloud related foreign language learning. Teachers, who are going to engage their students in cloud-based learning should take into account the fact that students who came from families with average and low income families made up a more detailed list of cloud-based foreign language learning values, drawing a specific attention to assessment issues ($p < 0,01$), structured multidirectional communication under the teacher's guidance ($p < 0,03$) while students from well-to-do families highly evaluated individual learning trajectories ($p < 0,02$) and real world professional challenges inclusion into the course ($p < 0,04$).

The above figures lay grounds on further elaboration of the scholars' implications as regards on-line learning assessment design (for instance see: McLoughlin, 2001; Wang, 2007) with particular emphasis on cloud-based learning environment and the above list of values as the basic criteria set for assessment. The survey results make the authors argue that students' refusal to be engaged in cloud-based learning is not affected by their inclusion in a specific ethnic or religious community and largely depends on the students' social background with particular focus on their regional/metropolitan origin ($p < 0,02$), and family income level ($p < 0,01$). The above figures make it possible to apply and specify with regard to cloud-based university learning environment the statements by such scholars as Slate et al. (2002) who

underline that in the digital age, people's attitude to web-based technologies and human behaviour in the digital community depend on the individuals' affiliation to a social group. The present survey data contributes to the above argument as the respondents' opinions prove that cloud-based technology affects learners' identity and shifts focus from their ethnic and religious self-perception onto the socio-economic aspects regarding students' identities, at least in view of Russian multi ethnical and multicultural student community.

The present research findings show that Russian students from families with limited social economic opportunities are sensitive to digital divide. The potential cloud-based digital environment is viewed by the above learners as a tool to get better access to learning resources ($p < 0,03$), to avoid unjust assessment and evaluation ($p < 0,01$) through learning activities that might be more visual due to the cloud-based environment specifics. Thus, the cloud-based foreign language learning can be viewed as a tool to enhance ICT-supported connectivity for developing a personality, forming social skills and maturity as students value cloud as a tool to increase social connectivity though fair assessment.

The present research has made it clear that learning objects for cloud-based learning should meet students' expectations in terms of their individual trajectories of learning, social inclusion and digital divide exclusion.

CONCLUSION AND RECOMMENDATIONS

The analysis of students' attitudes to cloud-based foreign language learning is important as the relevant data can contribute to teachers' awareness and planning of students' cloud-based cognitive activities in terms of learners' dealing with learning objects, processing the shared knowledge and choosing communication trajectories within the learning community. The cloud-based learning environment should be designed with the view to enhance human performance equally for representatives of varied social identities and improve students' self-esteem and self-confidence. The survey results made it possible to conclude that cloud-based foreign language learning requires integrated didactic and management efforts on the following aspects:

1. careful explanations as regards privacy issues
2. sustainable technology access check and control
3. varied trajectories of students' inclusion into learning activities and knowledge creation
4. each student's individual guidance by the teacher
5. real world tasks and situations for learning activities
6. need for a course facilitator/coordinator
7. shared knowledge tools
8. round up communication and discussion
9. tools to support each learner's social inclusion
10. time and room for individual reflection over learning process and outcomes

The surveys data lay grounds for offering possible recommendations for the teaching staff that plan to engage students in cloud-based foreign language learning. Teachers should offer the students a questionnaire before the cloud-based learning commencement to understand learners' views related to the technology under study. Students' social and cultural background should be analyzed by the teacher to think about possible micro groups for performing task-based assignments, the above group members should proportionally represent learners with different social background and learning experience.

Learning objects should be designed for students with different preferences regarding their style of learning and desired level of social inclusion and degree of aptitude to participate in knowledge sharing and creation in a foreign language. Learning objects should be designed with the view to foster students' foreign language skills related to future professional activities in particular professional settings. The teacher should be prepared to spend much more time for learning objects design and individual guidance and the faculty management should be made aware thereof in terms of balancing teacher's workload and salary level. The teacher should carefully observe the learners' multidirectional communication to prevent students from underestimated or exaggerated evaluations and foster positive shared learning environment. The teacher should lay emphasis on possible differences in students' attitudes and behaviour due to their varied social perceptions.

The teacher needs to make sure that each student feels part of the learning community, build a learning environment that encourages every students' contributions and allows time for individual's reflection over the learning process.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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Full Length Research Paper

An investigation of teacher candidates' metacognitive skills according to their year of study at Canakkale

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The aim of the present study was to investigate the differences in teacher candidates' metacognitive skills analyzed according to the year of study in their undergraduate program they were in. The research methodology in the study was survey. Among survey types, the cross-sectional design was used. The sample of the study included a total of 1072 students (322 male and 750 female) who studied in the Elementary Education, Science Education, and Preschool Teaching Divisions at the Canakkale Onsekiz Mart University, Faculty of Education, Department of Primary School Education during the spring semester of 2012 to 2013. Data was collected using the "Metacognitive Skills Inventory for Adults", which was developed by Schraw & Denisson (1994) and adapted into Turkish by Ozcan (2007). It was found that the metacognitive skill scores of teacher candidates who were studying in their third and fourth years were higher than those who attended first year and second year.

Key words: Faculty of Education, metacognitive skills, thinking, year of study.

INTRODUCTION

The constructivist learning approach requires developing students' metacognitive skills via courses. In Turkey, elementary education programs were developed in accordance with the constructivist approach in the academic year of 2004 to 2005. Therefore, it is expected that teacher candidates, who will practice constructivist applications in the classroom setting, have sufficient levels of metacognitive skills. The concept of metacognition was first established at the beginning of the 20th century by psychologists such as William James, Jean Piaget, Lev Vygotsky and John Dewey (Flavell and Quirk, 2006). Theory and research in the field of metacognition were composed of studies on metacognitive development, which were conducted in the early 1970's. This body of research, which was based on a broad

theoretical framework, included studies conducted by Brown et al. (1983), Flavell et al. (2002), Kuhn (1999), Moshman (1998), and Schneider and Bjorklund, (1998). Most of the developmental studies, which were included in the category of metacognition, examined children's metacognitions and investigated the factors affecting memory performance and the level of knowledge, focusing on the use of memory strategies in particular (Flavell, 2000; Flavell, 2004). Metacognitive theories constitute a subset of mental development theories which involve all of the mental development theories; however, they are not limited to the theories of cognition. Metacognitive theories are mental development theories that focus on the cognitive dimensions of the mind (Schraw and Moshman, 1995).

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LITERATURE REVIEW

The term metacognition refers to the awareness about one's own mental processes, the regulation and evaluation of one's own skills, and monitoring one's own thoughts (Bonds and Bonds, 1992). Generally identified as a deliberate mental activity and consciousness effectiveness (Martinez, 2006), it is defined as knowledge about cognition or a cognitive activity that regards itself as its own object and regulates a certain dimension of a cognitive activity (Flavell, 1985; Flavell et al., 2002; Flavell and Quirk, 2006).

It includes knowledge about the wise nature of humans, the nature of different cognitive tasks, and possible strategies which can be used for the solution of different tasks. In addition, it involves executive skills which enable the monitoring and regulation of one's own cognitive activities. Metacognition is an individual knowing not only something he or she did or didn't do, but also what the individual does in order to increase learning and solve situations of comprehension failure (Armbruster et al., 1983). Most of the studies on metacognition investigated children's metacognition, specifically their level of knowledge and use of memory strategies; however, the majority of such studies also examined children's metacognitions regarding language and communication, perception and attention, comprehension and problem solving (Flavell, 1999).

The development of metacognitive skills in students focuses more on task related mental activities (Flavell, 2000). According to Martinez (2006) metacognition is important for learners of all ages and, as pointed out by Larkin (2010), it has a positive effect on learning. Researchers have found that metacognitive skills play important roles in fields such as verbal communication, verbal persuasion, written understanding, written language acquisition, attention, memory, problem solving, self-control and self-education (Flavell, 1979). Metacognition is, therefore, necessary for successful learning (Schraw, 1998). Metacognition is generally divided into two components, namely the regulation of cognition and the knowledge of cognition (Schraw, 2009; Schraw, Olafson et al., 2012; Schreiber, 2005; Bruning et al., 1999). While the knowledge of cognition consists of conditional information, procedural knowledge, and explanatory information, the regulation of cognition consists of monitoring and planning (Schreiber, 2005). Metacognitive knowledge includes remembering, the pros and cons of the variables and conditions affecting different coding methods and memory performance, and one's beliefs on their own memory (Koriat, 2004). Metacognitive knowledge is defined as knowledge taken into memory regarding the goals and strategies of a person in their effort to continue cognitive efforts, which are declared information (Desoete and Veenman, 2006).

Metacognitive knowledge forms the basis of the belief system on which style of interactions, actions, and factors

would affect the results of cognitive effort, such as studying (Flavell, 1979). Metacognitive knowledge to goal related strategies and successful problem solving (Schraw, 1998). How metacognitive knowledge is used by students to make their own learning possible is important. The evaluation of metacognitive knowledge by teachers would be done more by informal methods. Teachers should evaluate the metacognitive knowledge of students deeply, quickly, and honestly in order to realize the general level of metacognitive knowledge in the classroom (Pintrich, 2002). Metacognitive knowledge is, in principle, not basically different from other information stored in long term memory (Flavell, 1979). Researchers have found a relationship between the school performances of students and metacognitive information (Schneider, 2010). Increasing age, memory performance, and metacognitive knowledge were also found to be related (Schneider and Lockl, 2004).

As mentioned above, metacognitive knowledge includes declarative, procedural and conditional information. Declarative knowledge refers to knowledge about oneself as a learner and about what factors can influence one's performance. Examples include taking notes, summarizing main topics, using memory improvement methods, and periodically self-testing (Bruning et al., 1999). Declarative knowledge is knowledge on distinctive learning characteristics that affect cognitive processes, which is knowledge one may have on their own abilities (McCormick, 2003). Procedural information reflects abilities and skills (Martin and Stapel, 1998). Conditional knowledge refers to knowing when and why to use declarative and procedural knowledge. This in turn allows the strategies to become more effective. Planning, categorizing strategies for problem solving, skills, and compensation regarding specific information, all include the evaluation of writing exercises (Vanderswalmen et al., 2010).

The regulation of cognition consists of three structures which are planning, regulation and evaluation. Planning includes separating resources and the selection of appropriate strategies. Planning also often involves setting activities related to the background information as goals. Regulation includes the self-testing skills required for controlling learning, as well as monitoring. Evaluation includes an individual's evaluation of the product information obtained as a result of his regulation of the learning process. Examples include re-evaluating one's options, and revising guesses (Bruning et al., 1999). Problem solving and critical thinking strategies make it possible for students to regulate their own learning through metacognitive skills. Examples include solving tests and evaluating the answers. Learning together helps with metacognitive monitoring and evaluation, and increases the use of cognitive strategies (Schraw, 2006). Metacognitive skills form the basis of lifelong learning (Flavell and Quirk, 2006). Metacognition is general, not field specific (Schraw, 1998).

Metacognition is used to define strategy selection and the monitoring of cognitive performance, belief, cognition on cognition, and the use of mind theories. Metacognition is vital in deciding which information is important and when resources should be expanded. The role of metacognition in general cognition is to provide a feedback loop in the implementation of strategies (Diana and Reder, 2004). Performing the mental activities which are related to education can help children become aware of their knowledge and the mental existence of others as well as themselves (Flavell et al., 1995). Metacognitive skills play important roles in reading and other fields of school learning. Metacognitive skills undergo important developments during youth and mid childhood (Flavell, 1985). Determining the level of metacognitive skill that teacher candidates possess can contribute to the determination of topics they find hard to learn during undergraduate study. The level of metacognitive skill a teacher candidate has affects his/her academic success during undergraduate education. Having an idea about one's self learning process would increase performance during undergraduate study. If a teacher candidate knows which strategy and methods work effectively for his/her self-learning process, his/her academic success would increase. Teacher candidates with high metacognitive skills could both perform in their chosen profession successfully and realize self-learning in their personal life, leading to increased confidence in teaching and learning.

Teacher candidates should develop metacognitive skills during undergraduate study, and they should have the necessary qualifications for teaching metacognitive skills. In order to offer students to develop metacognitive skills in formal education, teacher candidates should have the desired level of metacognitive proficiency. If the teacher candidate knows how he/she learned, he/she can then have a better idea on how to teach it. If teacher candidates know their own metacognitive skills, they can choose which strategy to use when learning something new.

In this context, metacognitive skills contribute to lifelong learning. When the learner has knowledge of his own learning process and controls it, high quality learning can be achieved. Teachers should have information on their own learning processes, become good role models to the learners, and undertake a role in teaching how to learn. A teacher with high metacognitive skills would use strategies, methods, and techniques appropriate for fostering metacognitive skills in the classroom environment. The courses teacher candidates take during undergraduate study are expected to increase their metacognitive skills. During this four-year course of study, the metacognitive skills of teacher candidates should positively develop. Teacher candidates are expected to gain these metacognitive skills in a certain process and speed starting from their freshman year. The number of studies evaluating whether the metacognitive skill levels of teacher candidate change according to their year of undergraduate study is limited. This study is expected to fill the gap which is the

Table 1. Descriptive statistics pertaining to the sample distribution.

Parameter	F	Percentage (%)
Gender		
Female	750	70
Male	322	30
Year of study		
First year	321	29.9
Second year	278	25.9
Third year	242	22.6
Fourth year	231	21.5
Total	1072	100

lack of the studies on metacognitive skills of students.

Purpose

In this study, whether the metacognitive skill level scores of teacher candidates' change according to their year of undergraduate study was evaluated. The hypothesis of this study is this: Is there any difference between the students whose classes are different?

METHODOLOGY

In this study, survey method was used in order to determine metacognitive skills of teacher candidates according to their year of study (Gay et al., 2009; Fraenkel and Wallen, 2006; Creswell, 2008).

Participants

The sample of the study included a total of 1072 students (322 male and 750 female) who studied at the Primary School Education, Science Education, and Preschool Education programs at the Canakkale Onsekiz Mart University. Information on the sample group is presented in Table 1.

INSTRUMENTS

Metacognitive skills inventory for adults

In order to measure the metacognitive skill levels of teacher candidates, the "Metacognitive Skills Inventory for Adults", which was developed by Schraw and Dennison (1994), and translated into Turkish (Schraw and Dennison, 1994; Özcan, 2007). The inventory consists of 52 questions and two sub scales, which are awareness of cognitive characteristics (17 questions) and regulation of cognitive skills (35 questions). In the reliability study of the inventory, the Cronbach Alpha coefficient was found to be .95. The inventory has Likert type responses in 5 categories (never, rarely, sometimes, frequently and always). There are no reversely worded questions in the inventory. The reliability of measurements taken at different times is approximately 99%. The Cronbach Alpha value of the Metacognitive Skills Inventory for Adults (.9384) was the highest

Table 2. Differences in the metacognitive skill scores of teacher candidates according to year of study (descriptive statistics).

Parameter	Year	N	Mean	Std. deviation
Regulation of cognitive skills	First year	309	3,6738	,45521
	Second year	269	3,6670	,44306
	Third year	225	3,7864	,43541
	Fourth year	211	3,7645	,49209
	Total	1014	3,7159	,45807
Awareness of cognitive properties	First year	311	3,7789	,48326
	Second year	271	3,7241	,43131
	Third year	230	3,8379	,44382
	Fourth year	214	3,8579	,46103
	Total	1026	3,7941	,45876
General Total	First year	309	3,6344	,43970
	Second year	268	3,6129	,41025
	Third year	225	3,7271	,41534
	Fourth year	204	3,7105	,45307
	Total	1006	3,6648	,43148

internal consistency coefficient, which was calculated for testing the inventory's total reliability. The Spearman Brown and Gutmann coefficients pertaining to the inventory were equal (Özcan, 2007). In addition to the survey questions, two were added to collect information about gender and study.

Data analysis

In the study, data was analysed after descriptive statistics computing was done for the independent variables. The one-way analysis of variance (ANOVA) was conducted in order to test the differences between year of study; whereas the least significant difference technique (LSD) which compute the smallest significant difference between two means, was used for determining between-group differences.

FINDINGS

In this section, findings regarding the teacher candidates' metacognitive skill scores by year of study are presented.

The analysis of the variance (one-way ANOVA) that related to metacognitive skills of the students who are in different classes, was presented. As seen in Table 2, the highest score for the "regulation of cognitive skills" belongs to the third-year students and the lowest to the second-year students. The highest score for the "awareness of cognitive properties" belongs to the fourth-year students and the lowest to the second-year students. In total, the highest score for the "metacognitive skills" belongs to third-year students and the lowest to the second-year students at Canakkale Onsekiz Mart University.

In this section, findings regarding the teacher candidates' metacognitive skill scores by year of study are presented. Is there any difference between the teacher candidates whose classes are different? As seen in Table 3, the metacognitive skill scores of teacher candidates showed significant differences by year of study. These differences were observed in the regulation of cognitive

Table 3. Present the results of one-way ANOVA and LSD test.

Parameter	Group	Sum of squares	df	Mean square	F	Sig.	LSD
Regulation of cognitive skills	Between groups	2.808	3	.936	-	-	-
	Within groups	209,749	1010	,208	4.508	.004*	3-4
	Total	212,557	1013	-	-	-	-
Awareness of cognitive characteristics	Between groups	2,710	3	,903	4,335	.005*	3-4
	Within groups	213,008	1022	,208	-	-	-
	Total	215,718	1025	-	-	-	-
General total	Between groups	2,306	3	,769	-	-	-
	Within groups	184,797	1002	,184	4,168	.006*	3-4
	Total	187,103	1005	-	-	-	-

p<.01*

skills and awareness of cognitive characteristics sub scales and total scores. The differences originated from the teacher candidates who attended third year and fourth year in the regulation of cognitive skills and awareness of cognitive characteristics sub scales and the total scale.

DISCUSSION

The purpose of this study was to determine the differences in teacher candidates' metacognitive skills according to their year of study. When we examined the differences in metacognitive skill scores by year of study, we observed that the differences originated from the teacher candidates who attend third year and fourth year were in the regulation of cognitive skills and awareness of cognitive characteristics sub scales and the total scale. According to this finding, it can be said that the metacognitive skill scores of teacher candidates who attend third year and fourth year are higher than those who attend first year and second year. It can be concluded that the Primary School Education, Science Education, and Preschool Education bachelor degree programs contribute to the enhancement of metacognitive skills in teacher candidates.

The results of other studies are similar to ours. Tüysüz et al. (2008) found that mean metacognitive scores of the primary school education students who were in their second, third and fourth years were higher than of those who were in their first year. Alcı and Yuksel (2012) determined that the differences in metacognitive awareness scores of English teacher candidates originated from students who were in their second year and fourth year. Sezgin et al. (2009) reported that there were significant differences in metacognitive skill scores of primary school education students according to the year they were in the undergraduate course. The authors found that the scores of second-year, third-year, and

fourth-year students who attended fourth year, third year and second year were higher than of those who attended first year. Contrary to our results, Aydın and Coşkun (2011) could not find a significant relationship between metacognitive skill levels of geography teacher candidates and class in school. Baykara (2011), could not find significant differences in metacognitive learning strategies of English teacher candidates according to their class in school.

CONCLUSION

It was presumed that the courses taken by teacher candidates during the third and fourth years of education increased their metacognitive skill levels. Teacher candidates take main courses (Introduction to Mathematics, Physics, Biology, Atatürk's Principles and the History of Revolution, etc.) and pedagogical courses (Introduction to Teaching, Educational Psychology, Educational Sociology, Teaching Methods, etc.) in their first and second year; whereas they take more specific courses in their own area of interest during the third and fourth years. In the first and second years of education, teacher candidates take general and pedagogical courses, they are not active at all in means of teaching and they take courses in classroom settings where the teacher candidate is a passive listener. In addition, during the third and fourth years, instructors confer more responsibility to teacher candidates. Teacher candidates prepare projects, applied research, and seminars and give lectures. We think that the difference between third and fourth-year students and other years can be explained by the facts mentioned above. We think that our study findings would be beneficial for researchers who study in the field of teacher training. In addition, our study results can be utilized by managers and academicians who work at faculties of education and executives at the Ministry of Education in order to increase the quality of education

provided for teacher candidates.

Conflict of interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Adaptation of economy attitude scale to Turkish culture: Validity and reliability study

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Economics affects us no matter what role we play in social life. Its foundation as a science was laid by the studies of Adam Smith, and since history it has become one of the disciplines accepted in university curriculums. Scarcity, opportunity costs and abandoning something in order to obtain another one are the core concepts of this discipline. These three concepts represent the heart of Economics and generally defined as “distribution of scarce sources”. The purpose of this study is to examine the psychometric features of the discipline; the Economy Attitudes Scale is composed of two dimensions and 28 items measuring the attitudes towards economy subject of the students developed by 1979 United States Economy Education Joint Counsel. Totally, 500 Social Studies teacher candidates from Kilis, Adıyaman, Niğde and Gaziantep University participated in the program. After the translation processes, experts’ opinion was taken for validity of language. Exploratory and confirmatory factor analysis studies were made for construct validity. The results of exploratory factor analysis revealed that the scale explained 56.936% of the two dimensions. The model adaptation of two-dimensional structure was tested via confirmatory factor analysis and the adaptation index is at good level (RMSEA=.081, GFI=.96, CFI=.98, AGFI=.96, NFI=.95, NNFI=.97, SRMR=.70). These sub-dimensions are *the attitude towards economy course and complex economy attitudes*. In conclusion of the reliability analysis of the scale, internal consistency coefficient was found as .87. The findings support that the scale shows a sufficient internal consistency and teacher candidates carry a sufficient validity in measuring the attitudes towards economics course.

Key words: Economy attitudes scale, economy education, economics education, validity and reliability.

INTRODUCTION

Calvin Coolidge says “*economics is the preparations that we make today in order to meet developments in the future*” (John Calvin Coolidge, Jr. 4 July 1872 - 5 January 1933. 29th Vice President and 30th President of United States). What kind of preparation is mentioned here? It is not wrong to make preparations for developments, with the potential to penetrate all fields of life; they affect and

will affect all people without exception. According to Schug and Walstad (1991), economics affects us no matter what roles we play in social life (worker, civil servants, shopkeepers, consumer, producer, citizens). What does this preparation contain and how should the education discipline known as Economics?

The foundations of Economics were laid by the studies

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of Adam Smith (especially *Wealth of Nations*, 1776). From history till date, Economics has been one of the disciplines available and accepted in university curriculum (Hodkinson and Perera, 1996). Scarcity, opportunity costs and abandoning something to obtain another thing are the core concepts of this discipline. These three concepts represent the hearth of the course and generally described as “distribution of scarce resources” (Mergendoller et.al., 2000).

Social sciences education researchers addressed widely what economics and economics education are and what the concepts are composed of. Limited resources, limitless requests and production, consumption, distribution and exchange movements are the important headings of economy and economics. For example, according to Martorella et al. (2005), economy is related to production, consumption and exchange. Michaelis (1988) also expressed that economic system is a way of production and usage of the people in a country. Parker (2001) expressed that economy is a work about production, distribution, exchange and consumption of the goods and services of which people are in need in scarcity conditions. While Naylor and Diem (1987) are drawing attention to the fact that all societies have to overcome scarcity problem, Garcia and Michaelis (2001) defend that being shared of the countries' sources by the people equally is a serious economic problem. Singer (2003) expressed economics as a controversial topic besides mentioning the production and distribution of goods. According to him, economy examines how the people produce and distribute the goods they need in order to remain alive. Turner (1999) points out that there is a connection between economics literature and the instruments of capitalist economy system. The mentioned instruments are listed as follows: the effect of technology on the society; global commerce and economic cohesion; environmental effect on economic decisions; the role of governments in managing modern economies; the relationships between private companies and their employees; the distribution and usage of limited sources and individual investment strategies; money and exchange, credit, banking transactions, budget and making economic plan.

Economics aims to provide economy insight and problem solving skills required for solving both social and economic problems (Walstad, 1979). Siegfried and Fels (1979) noted that one of the purposes of economics is to make the students have extensive knowledge about political issues and to increase the sensitivity towards political, economic and social system. Schug and Walstad (1991) said the purpose of economics is to teach the logic of economy and to help practice it. If the students are taught the logic of economics, they will be able to analyze economic events in more explicit way.

The conditions affecting the success of students in economics negatively/positively have occupied and are occupying the agenda of the educators.

Mann and Fushfeld (1970) emphasize that effective educator incites the students to examine beliefs, emphasize value problems about economic topics and transform them into active discussion environment. Siegfried (1979), Siegfried and Fels (1979), Charkins et al. (1985), Becker (1997) and Kennedy and Siegfried (1997) emphasize the quality of education and the connection between teaching-learning methods and highlight that different students learn the most suitable teaching strategy related to teaching economics in all license programs via traditional lecture method, which offers alternative learning methods. Benzing and Christ (1997) express that 44% of the academicians who participated in the research answered the question, “*How do the students learn best?*” as “*if they participate in the course and extracurricular activities*”. Armento et al. (1996) mention the necessity of the interdisciplinary economy education and being treated in a logical way and discovered from different ideological viewpoints.

Again according to Armento et al. (1996), economic subjects are complex and embedded into social, political and historical contexts of life. The subjects must be thought and studied in the ways reflecting this richness. The role of social sciences class is to support the students to think logically about important economic matters rather than being hasty and dogmatic and inciting them to being thoughtful and aware of the inquiry and appreciation. Wyk (2012) suggests that the way of being successful by students of economics is to develop innovative teaching applications that will make the classroom more entertaining and attractive and to integrate the data from real world, simulated economy games, cartoons with the subject of economy, quizzes about economy and case studies with teaching content.

Purpose

Economy that is effective in all decisions makes our lives and determines every kind of role that we play in daily life. But, there is no link between the disciplines in social sciences and being located in social sciences teaching license program as more than one (Economy, General Human and Economic Geography, Turkey Human and Economic Geography); and there is no measurement tool adapted and developed to be used by social sciences educators in local literature. This is the main reason for conducting this study.

As it is said by a young banker in an interview on television, “the purpose of the market is not to solve social problems”. When we put growth instead of development, market instead of planning, the subject and purpose of the economy change; while the welfare of people/society is being regarded as a problem, the speculations made over monetary magnitudes and stocks gain value (Müfit, 2010). To what degree do lecturers who access economy over only monetary values and

certain terms and who are trained in economics-business teach economy lesson to social sciences teacher candidates and what kind of acquisitions do the students have in the lesson remain a serious gap in local literature. Another purpose of this study is to take the first step in order to fill this gap and bring measurement tool that social scientists who are interested in the subject can benefit in Turkey.

METHOD AND MATERIAL

Sample

The adaptation study of Economy Attitude Measure to Turkish was done in fall semester in 2012-2013 education years. While making adaptations, seven (7) different sample groups were used, and psychological measurement tool adaptation process composed of seven (7) steps of Deniz (2007) was used. First of all, it was accepted that scale development study will be more difficult than adaptation study in terms of usability. The second step is the process of permission and it was given permission from Prof. William Walstad (Ph.D) playing an important role in development study of the scale by explaining that it is aimed at making an educational study via e-mail (wwalstad1@unl.edu) on 7/8/2013. The scale was developed by The Joint Council on Economic Education-JCEE in 1979. Prof. Walstad was both inside the study as Project Manager of Working Group to perform the development study and one of the two authors of the study narrating how the scale is developed (Soper and Walstad, 1983). Therefore, Prof. Walstad was chosen to give permission due to these reasons.

The third step includes translator choice that each item is researched in terms of English-Turkish coherence under the scope of language validity study of Economy Attitude Scale. In order to do this, five (5) volunteer lecturers were identified as translators who speak both languages fluently, familiar with the cultures studied (English and Turkish), knowledgeable about the scaled structure. All of the translators have doctorate degree in the fields of English teaching and English Language and Literature.

The forth step is the translation process. The application about translation is conducted as translation from the source language (English) to target language (Turkish) and then to source language again. In advanced translation performed from the source language to the target language, the translators mentioned the 3rd item chosen. The five (5) lecturers conducted the translation from the source language to target language (advanced translation) independent of each other (Harkness, 2010). Following this process, Economy Attitude Scale Translation Validity Suitability Degree Form whose English original items were written on the left and Turkish translations were written on the right was formed. With the help of this form, six (6) English language specialists formed by instructors and lecturers were asked to read the original items of the scale carefully at first; then their translation and the extent their translation meets the original item in terms of meaning and content (if it meets completely, it is 10; if it is not, the range of 0 is used). Taking the suggestions of the experts into account, the necessary changes in Turkish translation were made. Turkish form item number saves its order in the original form in terms of all points like item order. In the next process, 5 (five) lecturers having doctorate degree in the fields of Turkish Teaching and Turkish language and Literature scaled the suitability and intelligibility levels of each items in Turkish form for Turkish grammar in terms of Turkish language rules by using Economy Attitude Scale Language and Meaning Validity Suitability Degree Form (if each item corresponds to Turkish completely in terms of grammar and understandability, the range of 10 is used; if it does not correspond it, the range of 0 is used.). By taking into account the opinions of the experts, the necessary changes are

made in Turkish translation and the last shape is given to the Turkish form of the scale. And then, a researcher and a translation expert examined both the translation texts and agreed that the texts expressed the original scale items of the texts enough. Following the advanced translation, the back translation made from target language to source language was conducted by two expert lecturers independent of each other. It has been detected that the four translation texts obtained are consistent in terms of meaning and concept.

The fifth step is to review and detect the linguistic equality. The adapted form of the scale has been revised and when four translation texts were evaluated together, it was seen that Turkish text meets the original expressions in English text enough in terms of meaning. And then it was passed to the linguistic equality studies of the scale between English and Turkish versions. In this process, totally 50 (22 of which are third and 28 of which are fourth class) students receiving education in Gaziantep University Faculty of Sciences of the Department of Western Languages and Literature Department of English Language and Literature applied the English and then Turkish forms of the scale in two weeks. The results obtained from both applications have shown that the difference in all of the items in terms of test-retest responses is not statistically significant.

It was passed to content validity study of the scale. For this, 10 volunteer lecturers having one of the features that (i) working as a lecturer in the departments of education in universities and (ii) being graduated from doctorate degree in the field of education have expressed their opinion. 2 of the lecturers work in guidance and counseling, 2 of them in education administration and supervision, 2 of them in education programs and training and 2 of them in the department of measurement and evaluation in education.

The sixth step is pilot implementation process. In this process, 54 second-grade students receiving education in Gaziantep University Faculty of Education Department of Elementary Social Studies Teacher Education program, Turkish form that had been detected to be consistent in terms of meaning and concepts were applied every two weeks. The results obtained from both applications indicated that all of the items except for the difference in the responses of test-retest answers to 16th and 17th items were not statistically significant. In the item analysis transition made afterwards, this situation was not taken into consideration. In conclusion of this application, it was verified that the scale provided appearance and language validity (Küçükahmet, 2005).

In conclusion of the language validity study of Economy Attitude Scale, the theoretical universe of this study is Turkish teachers since it is planned to be applied on Turkish teachers. But the workable universe of the study includes teacher candidates continuing to two Education Faculties. Totally 406 classes of social sciences teacher candidates, 200 of which is male and 206 of which is female and whose ages range from 19 to 23 continuing the lessons in the Faculty of Education in Kilis and Adıyaman Universities in 2012-2013 education years and who were chosen deliberately as sample participated in the study voluntarily for validity and reliability analysis. Following that the missing or incorrect answers are omitted from the study, statistical analysis was made on 400 teacher candidates. In the literature, in the choice of sample size, it is seen that different researchers have different suggestions. It was stated that the sample size can be identified according to Büyükoztürk (2007) $n / k > 2$ formula. Here, n represents participants, k represents the item number in the scale and it is recommended that the result to be obtained must be greater than 2. When the formula is applied to this study, $406/28 = 14.52$ and $14.52 > 2$ are obtained. Şencan (2005) defends that the sample volume must be as big as being five events for each sample. Considering that the total variable (item) number in the scale is 44, it is reached to the conclusion of $28 \times 5 = 140$ and in this case, it is understood that 406 participants are enough. Bademci (2011) expresses that the sample size must be formed by at least

400 people for reliability and validity estimates or studies. Guadagnoli and Velicer (1988), Altunışık et al. (2005), Büyüköztürk et al. (2008), Kalaycı (2008), Kuş (2009) and Arsalani et al. (2011) left the identification of sample size to the researchers. Following the completion of seventh and the last step, it was passed to be transferred of the interpretations with the results of statistical transitions for the identification of validity and reliability of the study.

Data collection tools

In this study, the data and Economy Attitude Scale (JCEE, 1979) were collected via Economy Attitude Scale Translation Validation Compliance Rating and Economy Attitude Scale Language and Meaning Validation forms prepared and applied by the researcher.

Economy Attitude Scale (EAS): In 1979, with the increase in the pressures on economy education the Joint Council on Economic Education-JCEE has been charged with developing a measurement tool formed by two divisions and measuring the attitudes and sensorial domain of the students and made suitable for the country. The commission developed Economy Attitude Scale formed by 28 items (Survey on Economic Attitudes-SEA). There are two sub-dimensions of the scale. The first dimension of EAS intensifies on the attitudes of economy as a discipline or course (Attitudes toward Economics-ATE). The second sub-dimension aims to measure the quality of joint economy attitudes of the students (Economic Attitude Sophistication-ECAS). Each part of EAS consists of 14 items and the scale is in the type of 5 point Likert (Soper and Walstad, 1983).

The first steps in the scale development process, project manager to carry out the study and to select the Working Committee. In addition, a National Advisory Committee was charged to evaluate the decisions of this committee. Working Committee decided to have two separate divisions. One of them would measure ATE and the other one would measure ECAS. As a working domain ATE would intensify the answers of the individuals related to the economy and would measure the effect of the answers to the discipline. A member of Working Committee has just completed the development process of an ATE scale and adaptation process to the country. Following the last version of ATE, Working Committee decided that this measurement tool would be extremely suitable for evaluating the attitudes related to the discipline with these slight changes. About the second part of EAS, Working Committee examined the big part of current measurement tools again. This investigation included all of the researches. However, in this situation, it cannot access a satisfactory tool completely. It has been understood that some tools have reading level problems and another part of it has measurement qualities that can be questioned. As an example to the last problem, the measurement tools developed in order to measure liberal or protective attitudes is understood to have questionable validity towards the problem of identifying whether it represents "liberal" or "protective" viewpoint attitude expression (Soper and Walstad, 1983).

Economy Attitude Scale with two parts began to be applied nationally in May 1979. In 67 high schools chosen from all the geographical regions of the country, the application was carried out. Purdue University Measurement Research Center (MRC) identified the sample and tests and demographic data was collected under the scope of cooperation with Joint Council. In conclusion of the measurements, the internal consistency coefficient of the Attitudes towards Economy (ATE) was found high (Cronbach's $\alpha = .88$). The internal consistency coefficient of Complex economic attitudes (ECAS) was found on the lower level (Cronbach's $\alpha = .66$). When this finding is compared to ATE in terms of ECAS, this was not an expected situation because it was evaluating the variable opinions about various economy subjects and short term measurement transitions. Nevertheless, the whole of the item correlation of the scale is statistically significant (0.01) and the

estimated reliability is good compared to many affective measurements (Soper and Walstad, 1983; Phipps and Clark, 1993).

In 1980, the reliability studies were conducted as pretest-posttest in Missouri-St. Louis and Northern Illinois Universities and from the data obtained from the groups participated in the study Cronbach alpha value was found to be high. Therefore, it was understood that the reliability and internal consistency coefficient of EYT and ECAS scales were at desired level (Soper and Walstad, 1983).

The first reliability calculation of ECAS was conducted on a small group consisting of 13 economists and so it was aimed to reveal the failures in the development process. In order to test the content validity of ECAS, a scale consisting of 20 items (231 people) was sent to all the administrators of Joint Council and Central Administrators. While 14 of the 20 items were the ones randomly chosen from ECAS items, and the remaining 6 items were the ones that were previously rejected by the economy specialists. The administrators were asked for stating whether they agreed with the scale items or they evaluated the answering as unacceptable. Unanswered scales were sent back in an envelope and together with the additional information (Soper and Walstad, 1983).

While making consensus on the 14 items, it could not be made consensus on 6 items previously rejected. 149 of the 231 administrators (64.5%) returned. As expected, it was achieved consensus on 14 items and related to these 14 items, the answers as *I agree* or *I do not agree* at the rate ranges from 70.3 to 99.3%. The mean is 85.8%. It was answered to 6 "confounding" items at the changing rate from 25.2 to 67.8%. In Pearson correlation coefficient calculation conducted to measure the distinctiveness of two sub dimensions, of the measurements for both sub-dimensions in only one of the measurement (76 people from Missouri-St. Louis University and 110 people from Northern Illinois University for 4 times each) significant difference at the level of 0.05 was found and was concluded that ATE and ECAS were enough for measuring different things (Soper and Walstad, 1983).

Being more positive of the Attitudes towards Economy (ATE) may be a desired conclusion for economy lesson. However, taking an undesired result from the whole class should not be evaluated as "bad" or "wrong". ATE only submits classroom sensitivity index that may have beneficial information related to economy for the teachers and the researchers. Similarly, complex economy attitude (ECAS) is neither the measurement of "true" opinions list nor it has been designed for compelling the students to adapt to the consensus of the economists related to economy. ECAS simply evaluates how well the students adopt the opinions related to the current status of the information or to what extent they are inclined to adopt these opinions. High ECAS note may not be an explicit result of a course or program and even it should not be. Moreover, there is a serious danger: Economy Attitude Scale (EAS) users may feel they have to take a glance to numerical values before and after (Soper and Walstad, 1983).

Another statistical study related to Economy Attitude Scale was conducted by Phipps and Clark (1993). The authors used two different data sets for this application. For the analysis, two data sets were used. The first data was obtained from national adaptation sample of Economy Literacy Test (Test of Economic Literacy-TEL; Soper and Walstad, 1987). The mentioned data was collected in winter and spring semester. They were the same with the data produced from the sample paired for their own analysis by Walstad and Soper (1989) and consisting of 1630 participants and pretest-posttest applications of which were conducted. The original data was paired for all of the answers to EAS pretest-posttest, and it was benefited from the data obtained from a sample consisting of 1507 participants. The second data set obtained from the study of Clark and Hingsmith (1991) was formed by the extensive data consisting of the answers given by 995 high school students taking economy lesson in 1990-1991 academic years. 814 of 995 students completed the test and factor analysis was made over these answers. All the students in the sample have taken the economy lesson in

which the extensive curriculum materials produced by National Economy Education Council were used. At the same time, factor analysis was applied to extensive data in order to test healthy findings of EOT data analysis (Phipps and Clark, 1993).

Factor analysis was made separately both for all of the 28 items of Economy Attitudes Scale (EAS) and The Attitudes towards the Economy (ATE) and Complex Economy Attitudes (CEA) that are subscales. The sample sufficiency coefficient of KMO and Cronbach's alpha internal consistency coefficient were calculated for each subscale separately (Table 1 See Appendix). The results of facto analysis verify the assumption of Soper and Walstad (1983): ETE and CEA are separate dimensions (Phipps and Clark, 1993).

The analysis of the data

All the statistical transitions of the study were conducted through SPSS 16.0. While evaluating the study data, descriptive statistical methods (Mean, Standard Deviation) were used.

FINDINGS

I-Study Group-Study

The linguistic equivalence of EAS and test-retest application performed for linguistic and appearance validity studies were conducted on two separate groups ($n=50$ and $n=54$) (Table 2 and 3 See Appendix).

According to the tables, the difference in terms of test-retest answers in all questions are not statistically significant ($p>0,05$). In Table 3, the results of the application verifying that the scale ensures language and appearance validity are given.

According to the table, the first test mean ($x=2,000$) of the question that is 16th item as "the health services must be free for all the citizens" was found higher than retest mean ($x=1,780$) ($t=2,124$; $p=0,038<0,05$). The first test mean of the question that is 17th item as "The Banks Should not Compel the Consumers to Pay Interest for the Credits" ($x=1,590$) was found lower than retest mean ($x=1,890$) ($t=-3,287$; $p=0,002<0,05$). In other questions, the difference in terms of test-retest answers are not statistically significant ($p>0,05$). 16th and 17th items having statistically significant difference have been taken into account in validity and reliability studies.

Cronbach's alpha value was calculated for internal consistency test of EAS.

Study group consists of the students from the Department of Social Sciences Teaching in Kilis and Adiyaman Universities. Under this scope, 406 social sciences teacher candidates were assigned as the participants of the study and when incorrect and blank papers were excluded, the descriptive factor analysis was conducted over 400 pieces of data.

II- Cronbach's alpha value was calculated for internal consistency test of EAS-Study Group-Transition-Study

In internal consistency test conducted over 28 items with

400 teacher candidates Cronbach's alpha value was found to be .63. So, 4, 5, 9, 15, 16, 20, 23 and 28th items with low factor load were omitted from the scale. In Cronbach's alpha test conducted again with remaining 20 items, following the internal consistency coefficient value that was found to be .84 the items of 13, 14, 18 and 19 with low factor level were omitted from the scale and the test was repeated for the third time. Cronbach's alpha value of test result conducted over 16 items was calculated as .86. The items of 2 and 12 were omitted from the scale at this level since their factor load is low and the same test was repeated with 14 items for the fourth time and extremely high value as .873 was found (Peterson, 1994; Şencan, 2005). So, with the scale form consisting of 14 items whose internal consistency coefficient was high, it was passed to descriptive and confirmatory factor analysis tests.

In order to detect the construct validity of Economy Attitude Scale, descriptive factor analysis was conducted.

The descriptive factor analysis results conducted in order to detect the construct validity of EAS was conducted with 400 social sciences teacher candidates in Kilis and Adiyaman University Faculty of Education.

III-Study Group-Transition

In order to reveal the construct validity of the scale, descriptive and confirmatory factor analysis method was conducted on the samples different from each other. In conclusion of Barlett test conducted ($p=0.000<0.05$), it was detected that there was a relationship between the variables taken to factor analysis (Altunışık et al., 2005). In conclusion of the test conducted ($KMO=0.874>0.60$), it was detected that sample size was enough for factor analysis application (Ekici, 2009). According to Kaiser (1974), .70 or a higher KMO coefficient is enough for conducting factor analysis and .80 or a higher value is excellent. In factor analysis application, varimax method was chosen; the structure of the relationship between the factors remained the same. In conclusion of the factor analysis, the variables were gathered under 2 factors whose total explained variance was 56.936%. Scree plot test also verifies this. That Economy Attitude Scale is a valid and reliable tool according to alpha found related to the reliability and to variance value explained was understood. Factor structure belonging to the scale is seen in Table 4 and Figure 1 See Appendix.

In factor analysis evaluation of Economy Attitude Scale, being taken of the factors with eigenvalues greater than one, being high of the factor loadings indicating the weight of variables within the factor, being not closed to each other of the factor loadings for the same variable were taken into account. The reliability coefficient of the factors forming the scale and being high of the explained variance rates indicates that the scale has a strong factor structure. The items in the first factor were taken as Attitude towards Economy Course. The reliability of 7

items forming this factor was identified as $\alpha = 0.873$ and explained variance value was as 28.621%. The items in the second factor were taken as Complex Economy Attitudes. The reliability of 7 items forming this factor was identified as $\alpha = 0.861$ and explained variance value was 28.315%. While calculating the points of the factors in the scale, after the values of the items in the factor were summoned, they were divided into item number (arithmetic mean) and factor points were obtained.

Confirmatory factor analysis (CFA) test applied to detect the construct validity of Economy Attitude Scale was conducted with 100 social sciences teacher candidates studying in Niğde University Faculty of Education. CFA test of EAS was applied on a different sample because the most common problem in the structural analysis of the items designed for measuring personality features, attitudes, psychotherapy or the other clinical findings is the inclination of being rejected were tested by using CFA model when the structures obtained through Descriptive Factor Analysis (DFA) were tested statistically. The typical scenario of a well-planned research is like this: First, an understandable and replicable CFA model is one of the first studies. Then, a DFA model based on this CFA solution and the results showing that the model does not fit in well are tested in a new sample. Nevertheless, the adaptation may be bad when it is made DFA compatible with the same sample that CFA offers a good solution (Ferrando and Lorenzo, 2000). Considering the risk that Ferrando and Lorenzo draw the attention CFA model was analyzed over a different sample via DFA together with the results showing that the model is compatible and the obtained results are given as follows.

Transition

The findings related to the validity studies of Economy Attitude Scale were tested on a different sample with DFA; the model belonging to two-factor structure consisting of 14 items on the theoretical basis. In DFA executed over 14 items, positive factor loading in all the items was provided. So, the adaptation indexes obtained in conclusion of DFA applied in order to be tested of 14 items and two latent variables [Goodness of Fit Index = GFI], were adjusted, Adjusted Goodness of Fit Index=AGFI, Comparative Fit Index=CFI, Normed Fit Index=NFI, Non-normed Fit Index=NNFI, Standardized Root Mean Square Residual=S-RMR to Root-Mean-Square Error of Approximation=RMSEA] were examined and Chi-square value was found to be ($\chi^2=265,15$, $N=400$, $sd=73$, $\chi^2/df=3,6$, $p=0,000$) significant. Fit Index Values were found at high levels: RMSEA=0,081, GFI=0,96, CFI=0,98, AGFI=0,96, NFI=0,95, NNFI=0,97, SRMR=0,070 (Dickey, 1996; Stapleton, 1997; Byrne, 1998) (Figure 2 See Appendix).

The saturated model was obtained by using Modification Indexes for DFA, the items that “1st I like

reading the articles related to Economy subjects” and “8th Economy is a loss of time” are extremely similar. It was seen that the items “3rd I like Economy course” and “I like 10th Economy” are very similar. “25th Inflation resulted from greedy business/trade union leaders” and “26th The Businesses have too much benefit” are the questions that are theoretically to each other (Figure 3 See Appendix).

According to DFA result, it was observed that the item factor loadings ranges from 0,49 to 0,91 and R^2 values ranges from 0.24 to 0.83 (Table 5 See Appendix).

DISCUSSION

Economics is seen in social sciences teaching license program as a course under more than one course topics; however it creates a serious gap in local literature related to what the teacher candidates' attitudes towards the lesson or what they think generally about economy. That the attitudes towards economy were examined seriously by economics specialists and educators is understood from the national literature. That the attitudes towards economics were examined in a serious way by economics specialists and educators is understood from international literature. The researches intensify on solving the mystery of non-cognitive behavior in economics. In the examination of human behavior, the researchers giving importance to the senses at least as much as cognition defends that only this reason can better the rightness of these anxieties related to the subject. As we are witnessed in our daily life for several times, even if the individuals understand the results of the economy activities and policies, they may behave “unreasonable” in economic sense. Therefore, while the attitudes towards economy were examined, the senses as well as the cognitive domain affecting behaviors especially when the options have matters of public interest, they must not be ignored. Moving from this point, the aim of this study is to adapt Economy Attitude Scale developed to measure the attitudes towards economy course by Joint Council of Economy Education in 1979 on the sample consisting of 400 teacher candidates. The study was conducted in eight processes.

First of all, it was accepted that scale development studies would be more difficult than adaptation study in terms of usability, and then, it was taken permission from Prof. William Walstad (Ph.D.) who played an important role in scale development study. In the third step, five (5) volunteer lecturers were identified as translators who speak both languages fluently. The forth step is translation process. The application about translation is conducted as translation from the source language (English) to target language (Turkish) and then to source language again. Following this process, Economy Attitude Scale Translation Validity Suitability Degree Form and Economy Attitude Scale Language and Meaning Validity Suitability Degree Form were developed.

Considering the suggestions of the specialists, the necessary changes were made in Turkish translation and the last form was given to the Turkish form of the scale. And then it was detected that four translation texts were consistent in terms of meaning and concept in conclusion of forward and backward translation processes.

In the fifth step, when the four translation texts were evaluated together, it was seen that Turkish text corresponds to the original expressions sufficiently in terms of meaning. And then the linguistic equivalence study between English-Turkish forms of the scale was conducted over English Literature students.

In the content validity study, 10 volunteer faculty members expressed positive opinions. In the sixth step, in conclusion of the application conducted with 54 teacher candidates, it was verified that the appearance and language validity of the scale were ensured. 400 social sciences teacher candidates participated in the study voluntarily for validity and reliability analysis.

In internal consistency test conducted for four times with 400 teacher candidates Cronbach's alpha value was found extremely high as .873. So, it was passed to descriptive and confirmatory factor analysis tests applied on different samples via a scale from with high internal consistency coefficient and consisting of 14 items.

Barlett test indicated the relationship between the variables taken to factor analysis and KMO test indicated that sample size was sufficient for factor analysis application. In factor analysis application, varimax method was chosen and the structures of the relationship between the factors were ensured to remain the same. In conclusion of factor analysis, the variables were gathered under two factors.

In DFA conducted over 14 items, positive factor loading was ensured in each factors. Fit index values were found to be RMSEA=0,081, GFI=0,96, CFI=0,98, AGFI=0,96, NFI=0,95, NNFI=0,97, SRMR=0,070.

By using Modification Indexes for DFA, saturated model was obtained. It is seen that the items of 1, 8, 3 and 10 are very similar. 25 and 26th items are seen to be the questions close to each other theoretically. According to DFA result, it is seen that item factor loadings range from 0,49 to 0,91 and R² value ranges from 0,24 to 0,83.

As a conclusion, the Turkish form of Economy Attitude Scale can be evaluated as a scale having sufficient validity coefficient and validity indicators at acceptable level as its original. It is thought to be a beneficial tool that can be used in the researches to be conducted on Social Sciences and Class teacher candidates and performing the researches in which the scale will be used will ensure important contributions to the measuring power of this scale.

Conflict of Interests

The author has not declared any conflict of interests.

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Appendix

Table 1. Kaiser-Meyer-Olkin coefficients of sampling adequacy and cronbach's alpha (Phipps and Clark, 1993, 1998).

Data Set	KMO coefficient	Cronbah's alpha
TEL		
ATE pretest	.91	.88
ATE posttest	.90	.86
EAS pretest	.70	.64
EAS posttest	.71	.68
Capstone		
ATE pretest	.91	.87
ATE posttest	.91	.90
EAS pretest	.69	.60
EAS posttest	.73	.68

Table 1. English test-retest results (n=50).

	Test		Retest		t	P
	Mean	SD	Mean	SD		
1. I enjoy reading articles about economic topics.	3,140	1,125	3,160	1,267	-0,227	0,821
2. Economics is dull.	3,180	1,004	3,120	0,982	0,339	0,736
3. I enjoy economics.	3,160	1,095	3,060	1,132	0,711	0,481
4. On occasion I read an unassigned book in economics.	2,900	1,093	3,000	1,143	-0,430	0,669
5. I would be willing to attend a lecture by an economist.	2,540	1,110	2,740	1,259	-0,849	0,400
6. Economics is one of my favorite subjects.	3,640	1,083	3,620	1,193	0,134	0,894
7. I use economic concepts to analyze situations.	3,380	1,123	3,180	1,224	1,219	0,229
8. Studying economics is a waste of time.	3,540	1,147	3,560	1,181	-0,080	0,937
9. Economics is practical.	2,800	0,990	2,680	1,058	0,573	0,569
10. Economic ideas are dumb.	3,460	1,092	3,340	1,042	0,579	0,565
11. Economics is easy for me to understand.	3,300	1,015	3,120	1,118	1,323	0,192
12. Economics is a very difficult subject for me.	2,840	1,095	2,900	1,147	-0,425	0,673
13. I hate economics.	3,420	1,012	3,360	1,120	0,535	0,595
14. Economics is one of my most dreaded subjects.	3,160	1,037	3,220	1,016	-0,343	0,733
15. People should not have to pay taxes.	3,140	1,309	3,260	1,175	-0,704	0,485
16. Free medical care should be provided for all citizens*.	1,840	1,017	1,900	1,055	-0,363	0,718
17. Banks should not charge interest on loans to customers.	2,020	0,915	2,200	1,143	-0,802	0,426
18. If everybody had more money, we'd all be better off.	2,680	1,253	2,620	1,292	0,387	0,700
19. Most people who don't have jobs are too lazy to work.	3,300	1,165	3,040	1,355	1,391	0,171
20. Most unemployed people are lazy.	3,300	1,147	3,340	1,222	-0,292	0,771
21. Government should control the price of gasoline.	1,920	0,986	2,160	0,912	-1,695	0,096
22. When a strike occurs, government should step in and settle the dispute.	2,340	1,081	2,260	0,986	0,481	0,632
23. People should not be told how to spend their money.	2,540	1,129	2,700	1,147	-0,850	0,399
24. Profits should not be regulated by government.	2,860	1,143	2,920	1,027	-0,252	0,802
25. Inflation is caused by greedy business/union leaders.	2,100	0,886	2,200	0,969	-0,626	0,534
26. Business makes too much profit.	2,400	0,881	2,300	0,974	0,590	0,558
27. When a business gets big, it should be controlled by government.	2,580	1,126	2,640	1,191	-0,394	0,695
28. New factories are not needed.	4,040	1,049	3,880	1,206	1,135	0,262

*Word "Americans" was changed with word "citizens" for Turkish students.

Table 3. Turkish test-retest results (n=54).

	Test		Retest		t	p
	Mean	SD	Mean	SD		
1. I enjoy reading articles about economic topics.	3,500	1,240	3,390	1,309	0,799	0,428
2. Economics is dull.	2,810	1,245	2,890	1,093	-0,522	0,604
3. I enjoy economics.	3,350	1,084	3,220	1,058	1,224	0,226
4. On occasion I read an unassigned book in economics.	2,590	1,141	3,040	1,331	-2,898	0,005
5. I would be willing to attend a lecture by an economist.	1,930	1,286	2,200	1,323	-1,613	0,113
6. Economics is one of my favorite subjects.	3,780	1,076	3,800	1,122	-0,142	0,888
7. I use economic concepts to analyze situations.	3,150	1,156	3,240	1,063	-0,759	0,451
8. Studying economics is a waste of time.	3,540	1,193	3,500	1,112	0,280	0,780
9. Economics is practical.	2,590	1,125	2,800	1,071	-1,667	0,102
10. Economic ideas are dumb.	3,310	1,079	3,200	1,155	0,814	0,419
11. Economics is easy for me to understand.	3,260	1,049	3,310	0,987	-0,394	0,695
12. Economics is a very difficult subject for me.	2,830	1,129	3,000	1,182	-0,894	0,375
13. I hate economics.	3,200	1,234	3,260	1,136	-0,331	0,742
14. Economics is one of my most dreaded subjects.	3,350	1,291	3,330	0,911	0,105	0,917
15. People should not have to pay taxes.	3,410	1,381	3,040	1,440	1,995	0,051
16. Free medical care should be provided for all citizens*.	2,000	1,099	1,780	0,984	2,124	0,038
17. Banks should not charge interest on loans to customers.	1,590	0,836	1,890	0,984	-3,287	0,002
18. If everybody had more money, we'd all be better off.	2,980	1,325	2,930	1,242	0,293	0,771
19. Most people who don't have jobs are too lazy to work.	3,240	1,181	3,300	1,312	-0,375	0,709
20. Most unemployed people are lazy.	3,410	1,125	3,570	1,238	-1,176	0,245
21. Government should control the price of gasoline.	1,440	0,769	1,540	0,693	-1,093	0,279
22. When a strike occurs, government should step in and settle the dispute.	1,690	0,748	1,610	0,529	0,753	0,455
23. People should not be told how to spend their money.	2,700	1,298	2,650	1,246	0,282	0,779
24. Profits should not be regulated by government.	2,560	0,984	2,260	0,935	1,659	0,103
25. Inflation is caused by greedy business/union leaders.	2,870	1,318	2,410	1,125	2,305	0,025
26. Business makes too much profit.	2,280	0,811	2,350	0,781	-0,942	0,351
27. When a business gets big, it should be controlled by government.	2,480	1,161	2,300	1,093	0,936	0,354
28. New factories are not needed.	4,310	1,130	4,460	0,905	-0,797	0,429

Table 4. Attitude scale factor structure related to economy course.

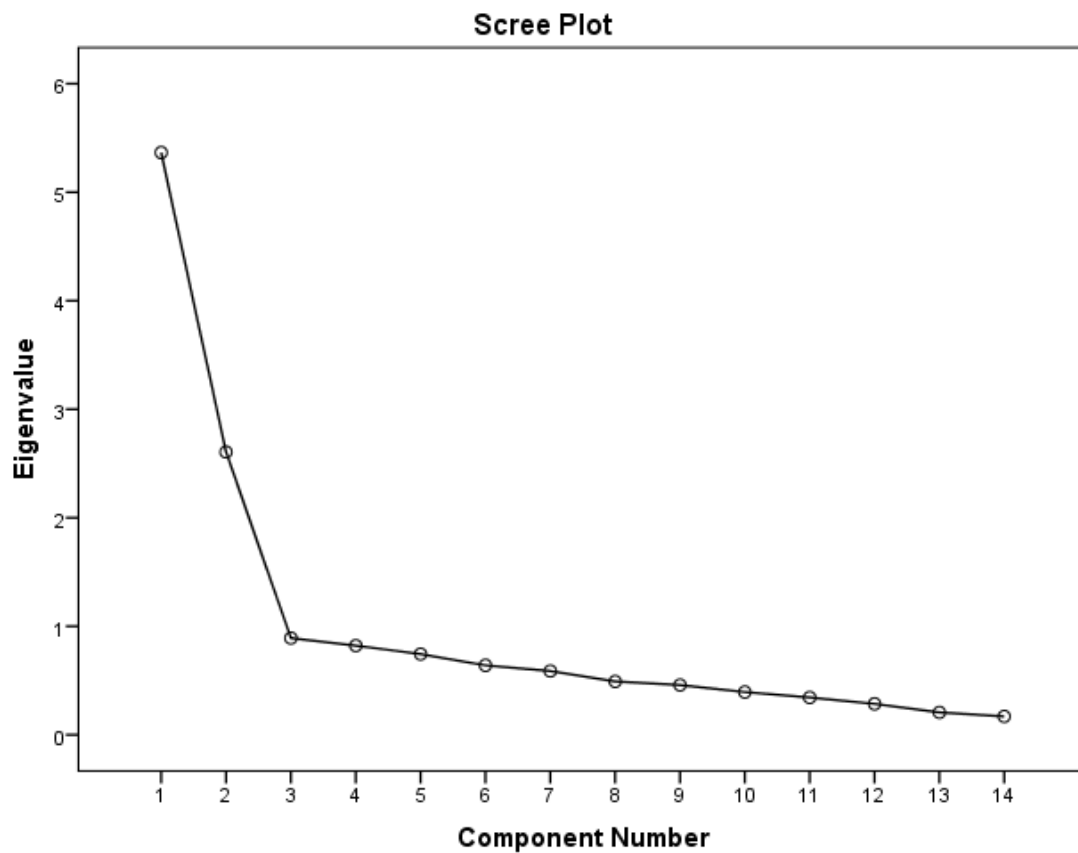
Dimension	Item	Factor Load	Explained Variance	Cronbach's Alpha
Attitude toward economics (eigenvalue=5.366)	1. I enjoy reading articles about economic topics.	0,784	28,621	0,873
	3. I enjoy economics.	0,797		
	6. Economics is one of my favorite subjects.	0,746		
	7. I use economic concepts to analyze situations.	0,617		
	8. Studying economics is a waste of time.	0,763		
	10. Economic ideas are dumb.	0,795		
	11. Economics is easy for me to understand.	0,658		
Economic attitude sophistication (eigenvalue=2.605)	17. Banks should not charge interest on loans to customers.	0,721	28,315	0,861
	21. Government should control the price of gasoline.	0,829		
	22. When a strike occurs, government should step in and settle the dispute.	0,829		
	24. Profits should not be regulated by government.	0,645		
	25. Inflation is caused by greedy business/union leaders.	0,664		
	26. Business makes too much profit.	0,741		
	27. When a business gets big, it should be controlled by government.	0,633		

Total Variance 56.936%.

Table 5. The attitude scale towards economy course, factor loadings obtained via DFA and explained assumptions.

Dimension	Item	Factor Load	Explained Variance	Cronbach's Alpha
Attitude toward economics (eigenvalue=5.366)	1. I enjoy reading articles about economic topics.	0,784	28,621	0,873
	3. I enjoy economics.	0,797		
	6. Economics is one of my favorite subjects.	0,746		
	7. I use economic concepts to analyze situations.	0,617		
	8. Studying economics is a waste of time.	0,763		
	10. Economic ideas are dumb.	0,795		
Economic attitude sophistication (eigenvalue=2.605)	11. Economics is easy for me to understand.	0,658	28,315	0,861
	17. Banks should not charge interest on loans to customers.	0,721		
	21. Government should control the price of gasoline.	0,829		
	22. When a strike occurs, government should step in and settle the dispute.	0,829		
	24. Profits should not be regulated by government.	0,645		
	25. Inflation is caused by greedy business/union leaders.	0,664		
	26. Business makes too much profit.	0,741		
	27. When a business gets big, it should be controlled by government.	0,633		

Total variance 56.936%.

**Figure 1.** Scree plot test.

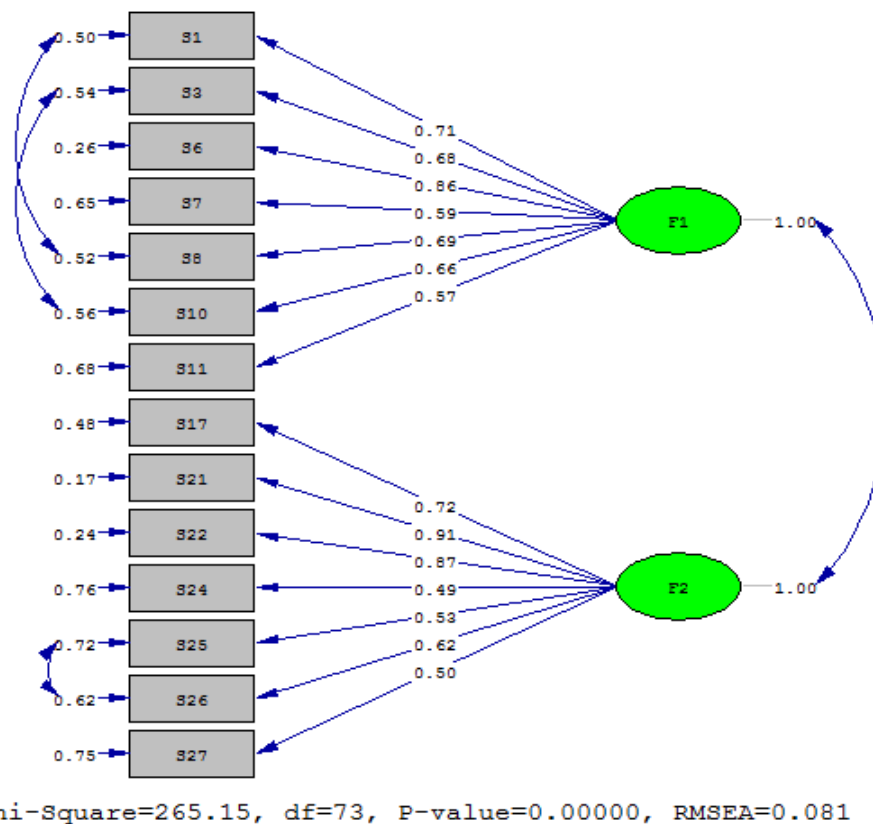


Figure 2. Attitude scale related to economy course DFA factor loadings.

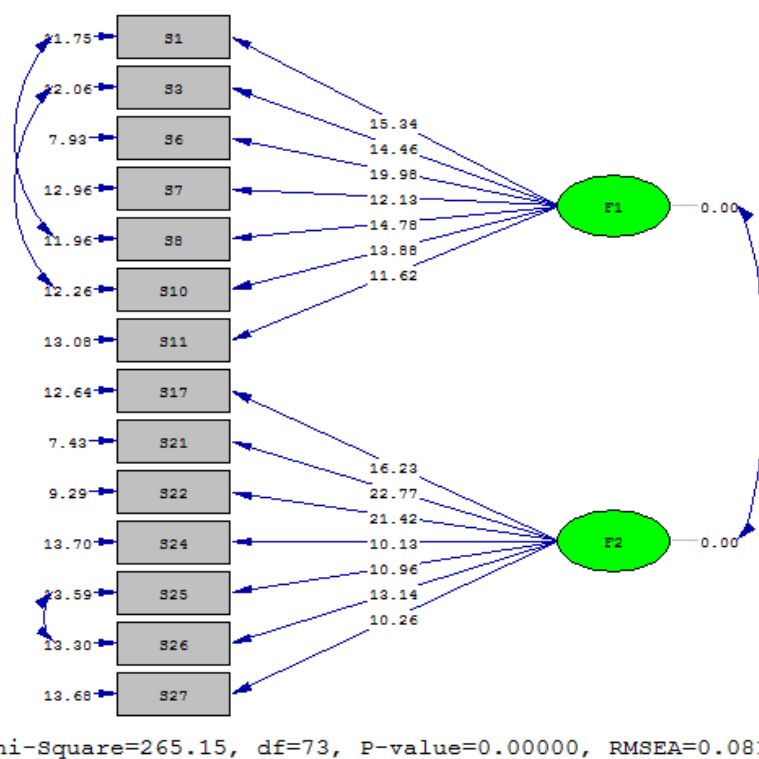


Figure 3. Attitude scale towards economy course DFA. t test results are significant for all items ($t > 1,96$; $p > 0,05$).

Full Length Research Paper

Violence tendencies of high school students: an examination in terms of exposure to violence, participation in sports and socio-demographic attributes

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The purpose of this study was to determine the violence tendencies of young people studying in high school in terms of their participation in sports, status of exposure to violence and socio-demographic variables. It was also aimed to evaluate whether the identified violence tendency differed significantly by gender, grade, school success, features of the living place, parental education, economic level, doing sports or not, the ones doing sports regularly working being licensed or not, the number of years spent doing sports being licensed, the status of exposure to violence and the type of the violence exposure. To this end, 459 students in total, studying in 8 high schools randomly chosen within the boundaries of the district of Izmit of the province of Kocaeli in the academic year 2013 to 2014 and participating in the research voluntarily, were included in the scope of the study. As well as a survey determining the socio-demographic attributes, the Violence Tendency Scale developed by Haskan and Yıldırım (2012) was administered to high school students. Consequently, it was found out that violence tendencies of young people differed significantly by gender, working in a sports branch being licensed, the number of years spent doing sports being licensed, the status of exposure to violence and the type of the violence exposure.

Key words: High school student, doing sports, tendency to violence, violence exposure, type of violence.

INTRODUCTION

Today, violence tendencies of adolescents and violence experienced in schools is an issue frequently brought to the agenda of the media. Violence is briefly defined as "the emergence of the sense of hostility and anger towards people and objects in an intense and destructive way" (Budak, 2003). Violence tendency is reported to be composed of violence related feelings, thoughts and

behaviors of individuals. It is stated that violence tendency is not limited to violence behaviors, but as well as resorting to violence in any situation, thinking that using violence is justifiable also means violence tendency. Considering the literature, violence is defined as harmful actions directed at people in many areas such as psychological, emotional, sexual, economic, physical and

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social areas being in the first place; whereas, it is stated that violence tendency can be defined as the level of positive thinking attributed to violence (Haskan and Yıldırım, 2012). In terms of the person it is directed at; three types of violence including self-directed, collective and interpersonal violence are mentioned. It is reported that of these types of violence, interpersonal violence is generally experienced among the individuals or groups knowing each other and is also frequently observed in schools as well as at home and in the streets (Kocacık, 2001, Özgür et al., 2011). It is also reported that with the increase in violence in schools recently, educational environments have become unsafe; therefore, secondary education students need to be primarily examined in terms of tendency to violence (Debarbieux, 2003, Kılıç, 2007, Leone et al., 2000, Özgür et al., 2011).

When examining the studies related to violence, adolescence is thought to be the most important of the periods posing a risk of the emergence of violence behaviors (Donat-Bacı and Özben, 2011, Selçuk and Güner, 2004). It is reported that 75% of young people are exposed to or witnessed violence in school, media and home environments in this period. It is stated that witnessing or being exposed to violence in this way also induces violence tendency and violence is learnt as a way of solving problems (Ayan, 2007; Çuhadaroglu, 2006; Groves, 2003; Heitmeyer and Hagan, 2005; Krug et al., 2002; Korkut-Owen, 2008; Miller and Pedro, 2006). It is reported that being aware of the risk factors preliminary and leading to violence tendency is important for the solution of the problem. It is mentioned that any event, biological or environmental conditions creating emotional or behavioral problems can also emerge as a risk factor (Debarbieux, 2009). It is stated that as adolescents consider themselves unimportant, their tendency to violence increases; in Turkey, students studying in secondary schools commit violence mostly in the street (39%), followed by in school and their environment (34%); 14.4 of adolescents have been exposed to violence, 25% of them have used violence and the violence being exposed has reached the highest level between the ages of 15 and 16 in the last one month, violence is observed in 32.64% of secondary schools, 64% of the students have been exposed to violence in the last one year, boys socialize in order to be masculine through violence and aggression (Lu and Wong, 2013) and girls are exposed to more violence in home environments, whereas boys are exposed to more violence in school (Öğülmüş, 2007, Özcebe et al., 2006, Donat-Bacı and Özben, 2011, Özgür et al., 2011, Sabuncuoğlu et al., 2006).

It is stated that early knowledge of young people's risky behaviors and tendencies to violence; is important in terms of both realization of a healthy education and prevention of potential acts of violence and the extensional increase in violence due to young people in school learning violence through social learning (Haskan and Yıldırım, 2014, Donat-Bacı and Özben, 2011).

Furthermore, the literature includes the information that doing sports contributes to the individual's social development, prevents nervousness and tendency to violence creating a positive effect on the nervous system and also is supportive in coping with the situations such as exposure to violence and the trauma occurred due to the positive effect it creates (Kalyon, 1994, Krechtle, 2004, Koç, 2007). Considering the effect of doing sports on eliminating the feeling of anger and relaxing (De Vries, 1981; Kalyon, 1994), sports participation of high school students in adolescence period was wondered. In this respect, it was intended to examine whether their participation in sports was in professional level - that is whether they were licensed if they participated in sports - the number of years spent doing sports being licensed; considering in terms of social learning, whether the student was exposed to violence; if so, what kind of violence he was exposed to; whether these situations increased their tendency to violence; and also the relationship of violence tendency with the other socio-demographic variables. Considering the information that the efforts to prevent violence were carrying out studies to reduce risk factors and increase preventive factors (Ögel et al., 2006), knowledge of young people's tendency to violence was thought to be important in terms of the prevention of school violence. In this respect, it was investigated what the level of violence tendency was in schools and whether it had a relationship with being exposed to violence, violence type, doing sports and some socio-demographic variables.

The purpose of the study

The purpose of this study was to determine the violence tendencies of high school students and to evaluate whether the identified tendency differed significantly by gender, grade being attended, school success, features of the living place, parental education, economic level, doing sports or not, working being licensed or not, the number of years spent doing sports being licensed, the status of exposure to violence and the type of the violence exposure.

Research Questions

Do high school students have tendency to violence?
Does this tendency differ by the variables such as gender, grade, school success, features of the living place, parental education and economic level?

Does the tendency to violence differ by doing sports or not, doing sports being licensed (that is, being a competition athlete or not), the number of years spent working being licensed?

Does the tendency to violence differ by high school students' exposure to violence and the type of violence exposure?

MATERIALS AND METHODS

Subjects

This research is a descriptive study. Eight high schools were randomly chosen among the 16 high schools in the center of the district of İzmit of the province of Kocaeli in the academic year 2013-2014 to represent the population. After visiting the selected high schools and obtaining permission from the school managements, the students studying in the 9th, 10th and 11th grades were informed about the research. Scales were distributed to the students who wanted to participate in the study voluntarily by the researcher. When the 530 scales filled were examined, 459 scales in total deemed valid, 100 of which were from the 9th grade, 101 of which were from the 10th grade, 258 of which were from the 11th grade, were taken into consideration. As the university entrance exam was near in the period, the study was conducted and the 12th grade students were preparing for it, they did not want to participate in the study. As the study was based on voluntariness, the 12th grades were not included in the study.

Data collection

Data collection questionnaire

Information survey: It is a 13-question survey prepared in the light of literature information in order to determine the high school students' personal traits, sports participation, whether they were exposed to violence and the type of the violence exposure. This information survey was applied in the way that the students answered the questions. The students' school success was determined based on their choosing the appropriate grade point average from the grading scale (85,00 to 100 VERY GOOD; 70,00 to 84,99 GOOD; 60,00 to 69,99 AVERAGE; 50,00 to 59,99 PASS; 0 to 49,99 FAIL) used in the Turkish National Education System considering their last school report.

Violence tendency scale: The violence tendency scale, a 20-item three-rating scale (3=always, 2=sometimes, 3=never), one of which is inverted, which was developed by Haskan and Yıldırım (2012) and measures the secondary school students' violence tendency, was used. The inverted item is graded inversely. The scores of the scale range between 20 and 60. High scores indicate that tendency to violence is high. The period for answering the scale, which can be applied both individually and in groups, is approximately 15 min (Haskan, 2009, Haskan and Yıldırım, 2012).

Development of the scale

Violence related feelings, thoughts and behaviors of secondary school students were determined and an item pool was created through literature review. The opinions of three experts from the Department of Psychological Counseling and Guidance on 44 items from the pool considered appropriate were taken. The 44-item pilot form improved as a result of the expert opinions was applied to 120 secondary school students and the unclear, wrong answered items were removed from the scale or the expressions were corrected. After the pilot application, the 44-item scale was applied to 218 students in three secondary schools in different socioeconomic statuses. A factor analysis was conducted on 218 data. The 20-item scale obtained as a result of the factor analysis was applied to 140 secondary school students again for test-retest reliability. The reliability of the scale was tested in two ways, in the first of which the Alpha reliability coefficient of the scale was calculated as .87 and in the second of which, the test-retest reliability coefficient was calculated as $r_{xx}=.83$ when the violence tendency scale was applied twice to 140 students with an interval of three weeks. Thus, it was

indicated that the scale can be used securely to measure the violence tendencies of the students (Haskan, 2009, Haskan and Yıldırım, 2012).

Statistical analysis

In the study, descriptive frequencies and percentage distributions for socio-demographic attributes were taken. Mean and standard deviation values of violence tendency scale were used. As the data showed a normal distribution, the independent t-test was used for the comparison of two groups and one-way analysis of variance (One way-Anova) was used for the comparison of three or more groups.

RESULTS AND DISCUSSION

In this study, violence tendency scores of male students were found to be significantly higher than of female students ($p=.001$). Contrary to these findings; studies reporting that there is no relationship between gender and level of violence tendency (Arpacı, 2011), and aggression scores of girls are higher than of boys have also been encountered (Ellickson and McGuiga, 2000, Kırmoğlu et al., 2008). Studies finding violence tendencies of boys higher than of girls similar to our study are also available (Haskan, 2009). The information that these are the results of the effect of cultural leanings; while girls learn that being compatible was a good personality trait, boys learn that aggression is a part of the sense of "masculinity" and they socialize in order to be masculine through violence and aggression, while boys carry out open attacks particularly in schools, girls show unnoticeable verbal aggression (Crick and Grotpeter, 1995; Ellickson and McGuiga, 2000; Giles and Heyman, 2005; Lopez and Emmer, 2002; Lu and Wong, 2013; Thomas and Smith, 2004) is supported by our findings. When interpreted with the information that violence tendency scores of boys being higher than girls stems from boys believing that resorting to physical violence, particularly externalized and observed from the outside, is a positive experience (Astin et al., 2003), it is also seen in our study that with the effect of the gender roles of "femininity" and "masculinity" while children are learning social gender roles, shows of physical violence in particular are considered as a kind of indicator of power by the boys in adolescence period and from this point of view, violence is externalized with a kind of effort to prove their power, whereas girls learn to be quiet as a matter of their social gender role and behave in line with their gender role as they gain social acceptance and are supported particularly for the suppression of their violence related feelings.

In this study, no significant relationship was found between the violence tendency and the grade being attended ($p=.775$) and the features of the living place being lived in for the last ten years ($p=.064$). Although no significant relationship was observed between the violence tendency scores according to the education

level of both mother ($p=.169$) and father ($p=.055$), there are studies finding violence tendency significant according to the education level of mother and insignificant according to the education level of father (Arpacı, 2011, Ayan, 2006; 2007, Şahan, 2010). In addition, no significant relationship was observed between the violence tendency scores and the income level ($p=.649$). The studies carried out also showed that, violence was more common in families with low socio-economic status and income inequality was a risk factor for violence tendency in young people (Heitmeyer and Hagan, 2005, Özcebe et al., 2006).

The reason why the violence tendency scores did not differ significantly by income status in this study unlike literature studies is thought to result from young people not having enough knowledge about the income status of the family to induce violence tendency as they are only given the responsibility of studying and getting into university and this age group is not given the responsibility for the family budget as a result of the sense of child raising in Turkish society.

The violence tendency scores of high school students showed no significant difference according to the status of doing sports ($p=.077$), whereas it was observed that the violence tendency scores were significantly high in favor of those doing sports being licensed ($p=.016$) and the violence tendency scores increased significantly as the number of the years spent working being licensed increased ($p=.031$). Similar results were reported in the other studies carried out as well (Haskan and Yıldırım, 2014). In the study, when those engaged in sports and those not engaged in sports were compared, no significant difference was observed in the violence tendency scores. When interpreted with the facts that the results were found significant when those having a license, in other words, athlete students participating in competitions and those not having a license but doing sports regularly were compared, a significant increase was also observed in the violence tendency scores as the number of years being licensed increased, the information in the literature that sports involves violence and aggression by nature (İkizler, 1994), it was thought that the violence tendency scores of competition athletes were found high because of their combative, aggressive and ambitious nature and it was important to carry out detailed studies on the issue. Although no significant difference was observed in the violence tendency scores in terms of the students' school success, assessed according to the grade point averages the students received from the exams at school ($p=.321$), it was stated that adverse conditions such as student success being low, lack of interest in school and lessons, lack of social, cultural and physical opportunities played an active role in the emergence of violence (Fager and Boss, 1998). Furthermore, it was observed that the violence tendency scores of those exposed to violence were significantly high ($p=.000$), considering the type of violence being exposed; those exposed to both physical

and psychological violence had the highest violence tendency scores followed by those exposed to physical and psychological violence respectively and the difference found between these scores was also significant ($p=.016$). As seen from the results, although doing sports does not increase violence tendency, competitive sports do. As violence exposure increases violence tendency and violence tendency induces violence, supporting children and young people with activities in the form of games which are not competitive is thought to be important in reducing violence tendency. Therefore, it was concluded that activities which are non-competitive and based on games should be applied in the studies carried out for children and young people in schools.

According to the result of independent t-test; the variables of gender (Table 1), doing sports being licensed or not, violence exposure and according to the one-way analysis of variance; the variables of the number of years working licensed and the type of violence exposure were found significant (Table 2). When these variables were evaluated with the multiple regression analysis, they were found to effect the level of violence tendency in a ratio of 58%. The relationship between the respective variables were found to be significant in the level of $p<0.05$ in the multiple regression analysis performed ($F(5.435)=5.346$ $p<.005$).

Conclusion

In conclusion, in the study we carried out, violence tendency scores were found significantly higher in males than females in terms of gender, the reason of which was thought to be the effect of harshness and aggressive attitudes seen as the symbol of "masculinity" being encouraged by the society. It shows that studies of social gender roles being conducted starting from early ages is important in prevention of violence tendency. Violence tendency scores is higher in those doing sports being licensed than in those doing sports without being licensed. An increase in violence tendency scores as the number of the license year increases indicate that sports including competitions increase violence tendency, which was thought to result from the effect of considering being ambitious in competitions, following the opponent closely and making a show of power to the opponent important in performance sports. It was also thought that it would be more appropriate to conduct game-oriented studies rather than competition sports in terms of prevention of violence tendency. Violence tendency scores were found to be significantly higher in those exposed to violence than in those not exposed to violence. As the violence tendency scores were found significantly high in those exposed to both physical and psychological violence and those exposed to physical violence and psychological violence respectively and it was seen that doing sports

Table 1. Frequency and percentage distribution and mean scores of violence tendency of high school students in terms of socio-demographic variables.

Variables		Frequency	Percent(%)	Mean±Sd	P value
Gender	female	204	44.4	44.37±10.53	.001
	male	255	55.6	47.63±10.54	
Grade	11	258	56.2	46.28±10.73	.775
	10	101	22.0	46.57±9.12	
	9	100	21.8	45.55±11.86	
Feature of the living place	Province	311	67.8	45.63±11.09	.064
	District	123	26.8	46.68±9.31	
	Village	25	5.4	50.64±10.39	
Mother's education level	University	66	14.4	45.78±12.73	.169
	High School	132	28.8	45.56±10.63	
	Secondary School	117	25.5	45.60±9.63	
	Primary School	130	28.3	46.75±10.43	
	Literate	6	1.3	52.83±5.70	
	Illiterate	8	1.7	53.87±10.09	
Father's education level	University	110	24.0	44.47±11.51	.055
	High School	178	38.8	46.43±11.03	
	Secondary School	85	18.5	46.23±9.62	
	Primary School	79	17.2	47.35±9.17	
	Literate	4	.9	46.00±7.39	
	Illiterate	3	.7	62.33±10.01	
Income status	Below 500TRY	5	11	52.60±13.44	.649
	501-1000	51	11.1	45.64±11.77	
	1001-1500	113	24.6	45.94±9.79	
	1501-2000	127	27.7	46.75±9.77	
	2001 and above	163	35.5	45.88±11.44	

Table 2. Frequency and percentage distribution and mean scores of violence tendency of high school students in terms of the status of doing sports and violence exposure.

Variable		Frequency	Percent(%)	Mean±Sd	P value
Status of doing sports regularly	Doing sports	294	64.1	46.65±10.36	.206
	Not doing sports	165	35.9	45.34±11.11	
Are those doing sports regularly licensed	Yes	192	41.8	47.58±10.41	.016
	No	267	59	45.17±10.72	
The number of years doing sports being licensed	1-3	95	20.7	45.74±10.53	.031
	4-6	67	14.6	45.71±10.54	
	7-9	34	7.4	49.35±9.49	
	10-12	13	2.8	54.61±9.05	
	13-15	1	.2	44±	
	15 and over	1	.2	63±	
	Fail	25	5.4	45.28±10.69	
School success	Pass	84	18.3	45.90±10.94	.321
	Average	183	39.9	45.42±10.17	
	Good	124	27.0	46.67±11.30	
	Very Good	43	9.4	49.11±9.98	

Table 2. Cont'd

Status of exposure to violence	Yes	166	36.2	49.00±11.43	.000
	No	293	63.8	44.59±9.84	
Type of violence exposure	Physical	62	37.3 (13.5)	50.64±12.21	.016
	Psychological	96	57.8 (20.9)	47.22±10.36	
	Both physical and psychological	8	4.8 (1.7)	57.62±13.08	

being licensed led to an increase in violence tendency scores, it was thought that performance of non-competitive social and sports activities in schools was important in prevention of violence tendency.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Longitudinal investigation of perceptions towards university concept through metaphors: A university Sample in Turkey

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This study aims to fill the gap in the field of observation-based longitudinal studies about metaphors in educational literature and investigates students' perceptions about the concept of university before and after university by identifying and comparing the change and the direction of change observed in perceptions. The phenomenological study was conducted on 128 Abant İzzet Baysal University first year students selected through maximum variation sampling method during 2012-2013 academic year. Qualitative data collection technique was used in the study and descriptive and content analyses were used in data analysis. Based on the metaphors used during research, the following categories were obtained *prior to university entrance*: place hard work is rewarded, place that is difficult to reach, personal development center, free place, culture center and vocational/professional center whereas categories *subsequent to university entrance* were found as vocational/professional center, culture center, place of research, happy environment, a new beginning, life sample, disappointment, loneliness and hardship. Comparison of conceptual categories for "before and after categories" shows that perceptions were positive prior to university entrance, some positive perceptions changed to negative and university was defined as disappointment, loneliness and hardship.

Key words: University, metaphor, teacher candidate, longitudinal.

INTRODUCTION

Throughout history, universities, both the producers and implementors of knowledge, scientific and technological development and transformation and qualified man power, have been and always will be the centers of attention for all world societies. Universities have changed their visions and undertaken new missions and visions to remove borders among countries in a world that has transformed into a small village due to the effects of macro-level globalization, to compete at national and

international levels and to cooperate and share experiences. In the micro-level, demands for universities regarded as crucial for future employment opportunities are increasing day by day. Changes in the views of individuals especially of students towards universities are expected along with these changes. Being the driving force of change, universities are striving to keep up with this process. One of the pillars of this process is composed of scientific research. Literature presents

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various scientific studies on universities some of which utilize metaphors to identify the current situation (See: Kumral, 2009; Dalgıç et al., 2012; Bozdemir and Uluman, 2012; Tortop, 2013; Konaklı and Göğüş, 2013; Korkmaz and Bağçeci, 2013).

Metaphors that aim to reflect the social reality (Töremen, 2009) play important roles in the field of education aesthetically and pedagogically (Botha, 2009) and facilitate the comprehension of topics that are not sufficiently understood (Semerci, 2007). As a method of thought and observation, metaphors facilitate our comprehension of the world (Morgan, 1998) and present how realities and experiences are interpreted consciously or unconsciously while individuals manage their daily thoughts and actions (Kılıç and Arakan, 2010). Teacher training is a tool that can especially be used to direct teaching practices and to define the place of teachers in modern educational approaches (Vadeboncoeur and Torres, 2003). Metaphors have opened up new channels for educational analyses by transforming teacher, administrator and student languages into the language of researchers to allow better comprehension of the world of education (Jensen, 2006). Institutionally, metaphors are the best documents to understand organizational processes (Bolman and Deal, 1991; cited in Spears and Szczerbacki, 2013). They provide a new way by presenting creative opportunities to observe and know organizations (McCourt, 1997) and focus on how organizations are viewed, how organizations view themselves and the operations, communication and interaction in the organizational structure (Ruben, 2014). Metaphor theories are highly effective to comprehend organizational culture and transformation by clarifying the dynamics and mechanisms underlying complex concepts and processes (Morgan, 2006; Pondy, 1983, cited in White, 2013).

It is common practice to refer to students' views through the use of metaphors to determine state of matters, to present positions of change and to undertake restructuring in universities which are at the highest level of the education system. Students are both important sources of data to identify the current situation and one of the most important stakeholders in universities as well. In the context of education faculties, teacher candidates' perceptions on universities and the meanings they attribute to universities are rather crucial for universities to develop themselves institutionally and to identify their places and importance in educational and social respects. The common point in the studies undertaken up to now is the instantaneous description of the current situation through the use of student views. Observation-based longitudinal studies that follow the change in the metaphors of same students are not available in literature. In other words, there are no studies that identify students' perceptions on universities prior to university attendance and compare these with the subsequent perceptions to determine whether there are changes in the perceptions. These types of studies may be important

indicators to develop universities by identifying the change and its direction (positive/negative) and determining the effective variables (university conditions, instructors, type of training, negative or positive experiences etc.). These studies are also important to increase quality in profession by ensuring the identification of beliefs, dispositions and professional practices prior to service implementation and by contributing to professional development (Noyes, 2004; cited in Güveli et al., 2011). This study aims to fill the gap in the field of observation-based longitudinal studies about metaphors in educational literature and identifies and compares students' perceptions before and after university. In this sense, the study aims to identify the change in the perceptions of freshman students and to present the reasons of positive or negative changes. Study results are expected to lead university administrators, instructors and policy makers to develop the academic and social qualities of universities. Based on the specified rationale, the study sets out to identify the views of teacher candidates regarding the concept of "university" prior and subsequent to university entrance with the help of metaphors. Parallel to this aim, answers to questions below were sought in the current study:

1. What are the common characteristics between the metaphors used by teacher candidates prior and subsequent to university attendance?
2. Which qualities of universities are assessed with the help of metaphors used by teacher candidates prior and subsequent to university attendance?

METHOD

Research model

This study uses phenomenological study design, which is a qualitative research method. Phenomenological study design focuses on concepts about which that the researcher is aware of but does not have detailed and in-depth understanding. This design provides a suitable research basis for researchers to study concepts that are not completely foreign but not fully comprehended yet (Yıldırım and Şimşek, 2006).

Working group

The study was conducted on 128 freshman students attending Abant İzzet Baysal University Faculty of Education, English (n=31), Classroom Teaching (n=34), Social Sciences (n=33) and Turkish (n=30) Departments during 2012-2013 academic year. Maximum variation sampling method, a purposeful sampling method, was used in the selection of students to ensure maximum representation of student variety. Purpose of sample selection is not to generalize the findings to the universe by ensuring variety but to determine the similarities and differences among variable situations (Yıldırım and Şimşek, 2006). Table 1 displays the personal information of the working group.

According to Table 1, female students are the majority in the working group. Number of participants from the departments and ratio of male-female students are close to each other.

Table 1. Students' personal information.

Personal variables		Departments				Total
		English	Classroom	Social Sciences	Turkish	
Gender	Male	f	12	13	14	53
		%	22.6	24.5	26.4	100.0
	Female	f	19	21	19	75
		%	25.3	28.0	25.3	100.0
Total		f	31	34	33	128
		%	24.2	26.6	25.8	100.0

Data collection

Qualitative data collection technique through the use of metaphors was used in the study. Metaphor is the use of a figure of speech in the place of another for purposes of comparison (TLA, 1983). Metaphors express the users' actions and thoughts (Draaisma, 2007) and help identifying how the concepts which need to be analyzed are perceived by individuals (Rızvanoğlu, 2007). They ensure that individuals attribute meaning to and understand their experiences (Yıldırım and Şimşek, 2006) by explaining unknown experiences with the help of the known (Lakoff and Johnson, 2005) and by transmitting deep messages about thoughts and beliefs (Beyerchen, 2014). Metaphors that are valuable research tools in providing a new outlook to educational practices and theories (Jensen, 2006) are powerful mental tools that can be used to comprehend and explain highly abstract, complex or theoretical concepts (Yob, 2003).

A 6-item form was prepared and distributed to voluntary students to determine freshman students' metaphor perceptions regarding "university, instructor and university students" concepts prior and subsequent to university entrance. Students were asked to complete the following prompts found in the forms: "University/An instructor/A university student was like..... before I entered university, because...." and "University/An instructor/A university student is like.....now (after I have started the university), because....".

They were instructed to use a metaphor for each concept and given information about the importance of writing their rationales and were told that their identities would be kept confidential to reflect their honest and real views.

Literature on studies using metaphors does not include studies that observe the change in the metaphors used by the same students, i.e. observation-based longitudinal studies are not available. The difference of the current study lies in the assessment of the views of the same students in order to effectively present whether there is a change in the studied concepts and their characteristic in time. Each student was given a code and analyzed for "before and after".

To prevent possible influences on the identification of perceptions regarding university, first implementation was carried out during first week of school (September, 2012) to identify their perceptions about university and the second implementation was conducted at the end of the first year (May, 2013) to reflect their perceptions about university after they were fully formed and could reflect reality. Since findings regarding university, instructor and university student concepts take up too much space in analyses, only the findings related to "university" concept was presented and discussed.

DATA ANALYSIS AND INTERPRETATION

I. Phase: identification of valid data

Collected data were transferred to digital environment, common criteria were identified and metaphors and the rationale behind them were examined. Investigation focused on the following points:

1. It was checked to see whether the same participants answered to both "before and after university" sections and 12 views that do not include both views were left out of analysis.
2. Each metaphor was examined in detail and statements with the characteristics of similes and adjectives were left out of analysis, for instance, student 118 used the metaphor "a school that can easily be completed" to express his/her views prior to university.
3. Metaphors including more than one metaphor for university and metaphors including various views were eliminated. For instance, student 37 was left out of analysis for using more than one metaphor (center of science, freedom) and student 65 was left out of analysis for expressing various functions related to university (University is like a film strip because there are many activities, an environment of freedom and many friends there. I mean there are many things).
4. Metaphors were examined to observe whether the rationales provided for metaphors emphasized any characteristics of universities. For instance, student 91 emphasized the university as provider of an income source in the metaphor "University is the place where one earns his living because money doesn't grow on trees" but did not sufficiently explain the rationale and did not state the function of the university appropriately.
5. Out of the 180 forms that were examined, 12 of the forms were blank or half filled, therefore 168 forms were taken into consideration. A total of 40 forms (coded 3, 4, 8, 18, 20, 26, 28, 31, 37, 38, 42, 45, 51, 54, 57, 60, 64, 65, 69, 70, 78, 81, 83, 85, 88, 91, 96, 101, 105, 107, 109, 115, 116, 118, 125, 126, 130, 132, 165 and 166) were left out of analysis based on the reasons mentioned above and the remaining 128 forms were recoded and transferred to digital environment to be assessed.

II. Phase: data analysis

Descriptive and content analysis techniques were used in data analysis. Descriptive analysis aims to present the findings to the reader following the organization and interpretation of data. In this context, the data are first described systematically and clearly, descriptions are explained and interpreted and cause-effect relationships are examined to obtain results. Direct quotations are used often to reflect participants' views more impressively.

Table 2. Categories formed regarding university and frequency distribution of the categories.

Prior to University Entrance			Subsequent to University Entrance		
Categories	f	%	Categories	f	%
Place where hard work is rewarded	30	23.4	Vocational/professional center	26	20.3
Place that is difficult to reach	29	22.7	Disappointment	26	20.3
Personal development center	28	21.9	Culture center	21	16.4
A free place	18	14.1	Place of research	19	14.8
Culture center	14	10.9	Happy environment	11	8.6
Vocational/Professional center	9	7.0	Life example	9	7.0
			A new beginning	8	6.3
			Place of loneliness	5	3.9
			Hardship	3	2.3
Total	128	100.0	Total	128	100.0

The main purpose in content analysis is to arrive at concepts and relationships that can explain the collected data. First the data are conceptualized and later themes that explain the data are identified following the organization of prominent concepts (Yıldırım and Şimşek, 2006). During content analysis, the metaphors generated by participants were listed temporarily in the alphabetical order and repeating metaphors were checked. Later, valid comparisons and their logical rationale were examined, similar metaphors were collected under common headings (categories) and 6 categories were obtained. Impressive metaphors and their rationales were provided with direct quotations.

The following steps were followed to increase the validity and reliability of the study: steps for collecting data and obtaining results were reported in detail to increase the persuasiveness and transferability of the study. Direct quotations were provided by keeping participants' identities confidential. Obtained metaphors and categories were presented to two experts to match each metaphor with a category and match-ups by the researcher and the experts were compared. Categories were formed based on student views prior to university since the study primarily focused on the changes observed in student views subsequent to university entrance. Following the identification of the instances of agreement and disagreement, inter-reliability was calculated with the help of Miles and Huberman's (1994) formula ($\text{Reliability} = \frac{\text{agreement}}{\text{agreement} + \text{disagreement}}$). Inter-reliability ratio was calculated to be 85%. Results were associated with the presented data and objectivity was followed in data analysis.

III. Phase: reliability and validity

Validity in qualitative studies is related to the accuracy of scientific findings and reliability is associated with the reproducibility of scientific findings (Yıldırım and Şimşek, 2006). In this context, some precautions were taken to increase the reliability and validity of the study.

a. During the development of the form, literature review was used to generate the conceptual framework of the topic to increase internal validity. During content analysis themes were selected to be extensive enough to include related concepts but narrow enough to exclude unrelated concepts. Interrelations between themes and sub themes and the relationship between each time with one another were checked to ensure integrity. In order for the collected data to reflect the actual situation, students were provided with necessary information during form completion and mutual trust was created to allow expression of views in honesty.

b. In order to increase external validity (transferability), the research process and the tasks during the process were explained in detail. In this context, the research model, working group, data collection tool, data collection process, data analysis and interpretation were defined in detail.

c. All findings were presented without comments in order to increase internal reliability (consistency) of the study. Coding was done separately on the data by an instructor experienced in qualitative research field and the researcher and the codes were compared to calculate the rate of consistency.

d. Tasks undertaken in the process were explained in detail to increase external reliability (verifiability) of the study. In addition to this, raw data and codes are kept by the researcher to allow other researchers to examine them.

FINDINGS

Table 2 presents the distribution of frequencies for metaphor categories created by students about the "university" concept prior and subsequent to university entrance. Since Tables 3 through 8 focus on the changes after university entrance, the information on this table is based on the prior to university entrance categories to determine whether there were changes in student views and whether the changes were positive or negative if there were any changes.

Categories Related to University

Table 2 shows that prior to university entrance, students perceive the university as *Place where hard work is rewarded* (23.4%), *Place that is difficult to reach* (22.7%) and *Personal development center* (21.9%). These views are followed by *A free place* (14.1%), *Culture center* (10.9%) and *Vocational/Professional center* (7.0%). It is interesting to note that function of employment is cited last. It may be related to the fact that students regard university as a difficult place to get into and focus on getting into university before they think about the employment opportunities that the university will provide.

Table 3. Distribution of subsequent views of students who defined university as “a place where you get rewarded for hard work” prior to university entrance.

Prior to University Entrance			Subsequent to University Entrance	
Code	Metaphor	Category	Negative Change/Metaphor	Category
1	Heaven	<i>Place you get rewarded for hard work</i>	Deserted island	<i>Disappointment</i>
14	Lush prairie		3-star hotel	
33	Heaven		Road bend	
48	A magical globe		Empty box	
53	Aquarium		Nightmare	
61	Culture center		Prison	
81	Holiday venue		Mountain slope	
86	Finish Line		Prison	
109	Solved Puzzle		Large Dress	
110	Dream		Village	
Code	Metaphor	<i>Place you get rewarded for hard work</i>	Positive Change/Metaphor	Category
3	Holiday Village		Camp	<i>Research</i>
9	Rest Area		Nazi Camp	
39	City		Library whose doors are not opened for many years	
12	Entertainment center		Short cut	<i>Life example</i>
62	Holiday Village		Farm	
111	Sky		Sky	
13	Palace		Culture Palace	<i>Variety</i>
85	Folk song		Potpourri	
105	Rose		World	
20	Rest Area	<i>Place you get rewarded for hard work</i>	Pigeonhole	<i>Happy environment</i>
78	Holiday Village		Above the clouds	
90	Ball point pen		Eggplant	
37	Palace		Atelier	<i>Professional training</i>
54	Holiday Village		Mill	
70	Entertainment center		Factory	
93	Holiday Village		A tree that bears fruit	
114	A sort of prayer		A tree that bears fruit	
41	Dream world		Light	<i>A new beginning</i>
47	State-of-the-art car		Bridge of transition	
67	Entertainment venue		A second world	

Students believe that they will be rewarded after this formidable process. Student views about the concept of university have diversified subsequent to university entrance.

The metaphor of *Vocational/Professional center* identified as the last item prior to university entrance moved to the top of the list subsequent to university entrance. Ratios of identification are the same for *Vocational/Professional center* (20.3%) and *Disappointment* (20.3%) followed by *Culture center* (16.4%) and *Place of research* (14.8%). There are also students who qualify university as a *Happy environment*, *A new beginning*, *Life example*, *Place of loneliness* and *Hardship*.

Comparison of conceptual categories of the metaphors students used prior and subsequent to university entrance

shows that all of the prior views are positive. However views of the 26.5% of these students have changed for the negative subsequent to university entrance. Students who have developed negative perceptions identified university as *disappointment* (20.3%), a place of loneliness (3.9%) and hardship (2.3%).

Common characteristics regarding the concept of university

Place where hard work is rewarded

According to Table 3, students regard the university as a place where they will experience the rewards of their hard work since they prepare to the university with a lengthy

and challenging process. Although the majority of positive student views stay the same after university entrance, some negative changes are also observed and metaphors such as empty box, nightmare and 3-star hotel are included among views as well.

Student views such as following present negative changes in student views: Student 14 (SS; Male): *"The University was like a lush prairie for me before I came. I thought it was a very nice place where I would be free from stress and in perfect harmony with nature. But now it feels like a 3-star hotel because it requires hard work just like I had to study in primary and secondary grades. When this is the case, there are not many opportunities to develop oneself in other regards"*; student 53 (E, Female): *"University was an aquarium for me because prior graduates who visited us at school told us that the university was a place where you can be comfortable. But now I am here, it is like a nightmare because it is not what I hoped or expected it to be"* and student 109 (CT, Male): *"I regarded the university as a solved puzzle before I started university. I used to see it as a place where I would finally feel relaxed and would rest since I would have solved the problems of my life upon entrance. But now it feels like a large dress for me since I did not observe any changes since I started the university, it feels like a slightly developed form of high school"*.

Varieties are observed in positive student views which continue to be positive subsequent to university entrance. University concept previously identified as a place where rewards of hard work will be received is identified as research, life example, cultural diversity and a happy place subsequently. Views found in the following statements are examples of positive views that continue to be positive: Student 39 (E, Female): *"It felt like a city before I came. I dreamed of it as a campus in which many individuals continued their lives. I thought of it as a campus with a shopping center, cafes or cinemas; a lively place. But now it feels like a library whose doors have not been opened for many years, actually it provides many opportunities if you know how to obtain it. However, it is like a deserted library due to insensitive patrons. People regard it as a financial resource, some place to allow them to earn money rather than some place to read and learn"* and student 13 (SS, Male): *"I used to dream of the university as a palace because I wanted it to be as beautiful as one. I would like to think of university as place in which students who have accomplished to get in would study happily. But now I am here, it reminds me of a center of culture because it is the place where students develop the most"*.

Although metaphors that included words such as prison and camp gave the impression of being negative, they were assessed as positive due to the rationale provided by the students which suggests that university is a place of hard work. The following statement by student 9 (SS, Male) is a sample for this phenomenon: *"For me, university was like a rest area before I came because*

getting into the university was going to make up for half of my target. Almost everyone who was accepted into university after all this hard work was telling me that they had more fun than they had before in their normal lives. But after acceptance, the university feels like a Nazi camp, there is no respite and there is constant work. It is really a place for the ones who deserve it".

Place that is difficult to reach

Table 4 shows that students perceived university as a place that is difficult to reach prior to university entrance with the metaphors they used such as mountain, castle and steel door. It was observed that the majority of students (n=18) had a positive change in their views.

Views of 11 students displayed negative changes subsequent to starting university due to reasons such as loneliness, hardships and inability to find what they expected. Examples of statements that represented loneliness were as follows: S 122 (C, Male) stated that *"University was like a faraway star for me because reaching that star was very difficult, even impossible and we all had the fear of not attaining it. But now I am here, it is like a foreign country because I cannot find the closeness we had in high school. You feel alone. If we continue to regard it as a star, maybe it is more difficult to own it rather than reaching for it"* and S 8 (SS, Female) expressed that *"It was a difficult castle to enter for me because it was not a place that everybody is accepted, there was a challenging exam and only a small number of millions of people could pass it. But now I am here, it is like a fridge because you are alone and by yourself. University environment feels very cold"*. The statements that represented disappointment are as follows: S 99 (C, Female) stated that *"University was a summit before I came here because it caused us to perceive it as difficult to achieve during our preparations. It felt like we could never reach that summit. But now, it feels like a corn poppy to me. It is just like a corn poppy which is beautiful right before it is picked and it sheds its petals when you pick it; I realized when I was accepted into university that it was not something to be exaggerated. Its only difference from school, I mean high school is that you wear civilian clothes, otherwise you go to hostel, you go to class, it is all the same"* and S 22 (SS, Female) reported that *"University was like a high wall before I started to university because I was studying very hard and the wall was so high that it was unattainable and a distant dream for me therefore I used to review my hopes and dreams when someone mentioned university. However, it feels like a low wall now because whoever studies can do it. It was not something to exaggerate anyway"*.

S 31 (SS, Female) whose views changed positively subsequent to university entrance said that she regarded university as the peak of Everest before she started

Table 4. Distribution of subsequent views of students who defined university as “a place that is difficult to reach” prior to university entrance.

<i>Prior to University Entrance</i>			<i>Subsequent to University Entrance</i>	
Code	Metaphor	Category	Negative Change/Metaphor	Category
8	A castle that is difficult to enter		Fridge	<i>Loneliness</i>
50	Castle		Fridge	
101	Vineyard		Hot pepper	
122	Star		Foreign country	
22	High wall	<i>Place that is difficult to reach</i>	A low wall	<i>Disappointment</i>
44	Mount Kaf		A site	
69	Summit of the Himalayas		Emptiness	
98	Diamond		Pen	
99	Summit		Corn-Poppy	
103	Phoenix		A low wall	
63	World of Wonders		Challenging racetrack	<i>Hardship</i>
Code	Metaphor		Positive Change/Metaphor	Category
2	Summit		Wheel of fortune	<i>Variety</i>
10	Mount Kaf		Plate	
25	Phoenix		World	
57	Summit		World	
77	Dream		Aquarium	
87	Ivory tower		Culture palace	
31	Peak of Everest		Bee hive	<i>Research</i>
36	Summit of the Himalayas		Bee hive	
42	Gold medal		Sun	
52	Star		Data bank	
55	Summit		Ocean	
106	Tree		Sea	
113	Steel door		Library	<i>Professional Training</i>
119	Diamond		Treasure	
35	Star		Furniture ateliers	
65	Nightmare		Court	
95	Musical chairs		Field	
112	Summit		Bridge	

university and explained her rationale in the following statement: “*Many people I closely knew studied real hard but they could not pass the university entrance exam in 3-4 tries*” and emphasized the existence of constant study and development by mentioning that “*University is like a bee hive because students are given every task regarding research since assignments and classes require constant research. Students are never free and they constantly study*”. S 65 (Male) identified the university as a place to facilitate finding opportunities for employment in the following statement: “*It was like a nightmare because university was crucial to get into for me; it was my biggest dream to be in that environment. I was scared not to be able to accomplish this dream. Therefore, it was a nightmare for me. But now it feels like the court since it decided my future income and job opportunities*”. S 42 (E, Male) emphasized the characteristic of university as a place that requires constant

study and acquisition of knowledge in his statement: “*University was like a gold medal for me before I started school because I thought it would be difficult to get into. People around me made negative comments all the time. I always thought that I would not be accepted into university and get the gold medal. But now I am here, it feels like the sun because all scientific studies, experienced teachers and smart students revolve around it*”.

Personal development center

According to Table 5, there is almost no negative change in the views of students who previously regarded university as a personal development center. S 121 (C, Female) pointed to the difficulty concept with her statement. “*Before I started the university, it was like a tree for me because a tree grows and develops when it is*

Table 5. Distribution of subsequent views of students who defined university as “a personal development center” prior to university entrance.

<i>Prior to University Entrance</i>			<i>Subsequent to University Entrance</i>	
<i>Code</i>	<i>Metaphor</i>	<i>Category</i>	<i>Negative Change/Metaphor</i>	<i>Category</i>
74	Shopping Center	<i>Personal development center</i>	Deserted island	<i>Disappointment</i>
121	Tree		Stone	<i>Hardship</i>
<i>Code</i>	<i>Metaphor</i>		<i>Positive Change/Metaphor</i>	<i>Category</i>
6	Small Earldom		Station	<i>Professional Training</i>
7	Center of science		Ship	
19	land of opportunities		Door to opportunity	
51	A big door		Inn	
75	Rainbow		Field	
84	Culture center		Factory	<i>Life example</i>
102	Lion		Field	
108	Shopping center		Field	
15	Research center		City	
27	Home		Spider web	
40	Center of science		Kettle	
76	Center of education		School of life	<i>Variety</i>
16	Research center		Culture Palace	
60	Fair		Social cultural foundation	
73	Roof of a building		Fruit garden	
89	Center of art		Rainbow	
32	Olympics	<i>Research</i>	Scientific and technical box	<i>Happy environment</i>
66	A massive world		Falling snow	
68	World		Scientific and technical box	
97	Market		A temporary treasure	
120	Chateau		An old man	
107	Sport center	<i>A new beginning</i>	Amusement park	<i>Happy environment</i>
118	Hospital		Game	
123	Grand father		Lego	
128	Laboratory		House	
34	Summit point		Valley	

fed through the roots and I thought that the university is fed through science and knowledge. But now I am here, the university feels like a piece of stone for me. It is as difficult to study at the university as it is difficult to break a stone and see inside” and S 74 (T, Male) mentioned the feelings of disappointment with the following statement: “For me, the university resembled a shopping center because I thought we could find anything related to knowledge in there. But after I started the university, it is like a deserted island now because it does not meet my needs, I could not find what I expected”.

S 19 (SS; Female) who perceived university positively subsequent to university entrance as a place that professionally trains people mentioned that “I used to regard the university as a land for opportunities because I believed that all required opportunities to develop oneself could be found at the university. I had no opportunities to develop myself at the area where I lived. I still feel the same after university entrance; I mean university still

equals a door to opportunity for me. I can develop myself as much as I like and I can be successful. I applied for courses (computer, diction etc.) as soon as I started university. Now I can attend courses”. S 40 (E, Female) who regarded university as an example for life stated that “It was like a science seat of science for me before because I thought that universities are more informed. Going to university felt like privilege to me. Since my childhood, I studied by focusing on university entrance because I thought that actual knowledge, life existed there. But now university is like a kettle for me because in my opinion, universities form the infrastructure of the real life, just like the kettle is the infrastructure of brewing tea. At the university, the tasks to be accomplished never end just like in the real world. There is always something to do. There are assignments, presentations or midterm or final exams. We play the introduction part to our lives here. We have the control both morally and materially”. S 73 (T, Female) emphasized cultural diversity in the

Table 6. Distribution of subsequent views of students who defined university as “a free environment” prior to university entrance.

<i>Prior to University Entrance</i>			<i>Subsequent to University Entrance</i>	
Code	Metaphor	Category	Negative Change/Metaphor	Category
45	Statue of liberty	<i>A free place</i>	A small village	<i>Disappointment</i>
64	Home whose door opens everywhere		Empty box	
71	Land of freedom		Prison	
88	Land of freedom		Mirage	
116	Island of freedom		Deserted island	
72	Statue of liberty		Foreign country	<i>Loneliness</i>
Code	Metaphor		Positive Change/Metaphor	Category
5	Kite		Culture Palace	<i>Variety</i>
29	Disco		Bag	
30	Land of freedom		Culture Palace	
56	Kite		Aquarium	
18	Sky		Mill	<i>Professional Training</i>
58	A ball field		Bridge	
115	Forest		Caramel	
21	Cloud		Military	<i>Research</i>
92	Weather		Military	
38	Sky		Rebirth	<i>A new beginning</i>
94	Land of freedom		Birthday cake	
126	Land of freedom		Brake	<i>Life example</i>

following statement: “University was like the roof of a building for me before I came to university because the roof represents a completed building. University is the roof of our education; it is the last point in education. After I started university, it is like a fruit garden for me. Just like you can find a variety of fruits in a fruit garden, you can find students from all cultures, all parts of the country at the university. It (diversity) enriches the garden”. S 120 (C, Female) defined the university as a research center with the following statement: “The University was like a chateau for me. Do you want to know why? I thought that there was a good education environment and high class people with knowledge at the university just like in the chateaus. After I started university, it is like an old man for me. The old man may not have a great outward appearance but he has a lot of knowledge, various areas of interest and is a professional”.

A free environment

Six of the 18 students who previously perceived university as a free place presented negative views subsequent to university entrance (Table 6). Student views that display disappointment are as follows: S 45 (E, Female): “University was like the Statue of Liberty for me because my friends at the university had talked of the place in very different terms. I also thought that I was given the right to do as I pleased since I was away from my parents.

However, university is like a small village for me now because the university I am in is still trying to develop itself like children do in developmental stages and it still has many shortcomings”; S 64 (E, Female): “I believed university was like a house whose doors open everywhere. University meant freedom in everything, comfort and a safe environment for me. An environment in which you are able to do anything and not held accountable for them was not bad at all. But now I regard university like an empty box. It has nice outward appearance but it is empty inside. Only you can fill that box. Otherwise there is no concept of university other than that” and S 71 (T, Male): The University was like a Land of freedom before I started university and I believed I could do anything I want here. But now it is like a prison for me because you cannot do as you please, you have to do what your instructors want”.

Examination of student views with positive changes in the perception of university as a free place points to perceptions regarding university as a professional training venue as found in following statements: S 18 (SS, Female) mentioned that “University was like the sky for me because people around me talked about university as a place in which nobody would bother us and I could move freely. Now I am here, the university is like a mill for me. The mill ensures that the wheat is processed in the form of flour to make bread and just like that, the university is a tool to make us beneficial to society by training us”. S 58 (E, Male) mentioned that “University

Table 7. Distribution of subsequent views of students who defined university as “a place with cultural diversity” prior to university entrance.

<i>Prior to University Entrance</i>			<i>Subsequent to University Entrance</i>	
Code	Metaphor	Category	Negative Change/Metaphor	Category
46	Album	Place with cultural diversity	Private teaching institution environment	Disappointment
59	World		Prison	
125	Another planet		High school	
Code	Metaphor		Positive Change/Metaphor	
4	Flower garden		Ladder	A new beginning
80	Metropolis		Step	
23	Rainbow		Life coach	Life example
17	Ocean		Door to opportunity	Professional training
83	Fair		Vehicle	
91	City		Atelier	
28	Television		Mosaic	Variety
43	Culture center		Museum	
104	Circus		Circus	
124	Foreign land		United Nations	A happy environment
96	Forest		House with a garden	

was like a ball field for me because I thought I needed to continue the game by myself with my own efforts. I thought each score was for my own benefit. But now the university is like a bridge for me because it will help me attain the profession in my dreams”. S 126 (C, Female) emphasized that university is the place where you learn about life in the following statement: “University was supposed to be the land of freedom. I thought of it as a place away from parents, somewhere I can be with friends all the time and in which you can do anything you please but now university is like a brake for me because you are learning to stop yourself although there is no one to stop you”.

Place with cultural diversity

Views of three students from among the group of students who perceived university as a place with cultural diversity prior to university entrance changed for the negative (Table 7). Expressions of following students display disappointment. S 59 (E, Male): “University was the world for me. I thought it to be different from primary and secondary education with many individuals from different cultures and believed the life was good at the university. But now I am here, it is like a prison. Students are coming to school in a bored state and they come only to keep attendance” and S 125 (C; Male): “University was like a different planet for me before I started university. For me, there were different cultures and everything was different. But after I started university it is like a high school. There is nothing different from high school, it has

no specific characteristics. We had to do rote learning at high school and it is the same here”.

Students whose positive ideas continued subsequent to university entrance displayed diversifications in their views. Students who regarded university as a place of cultural diversity prior to university entrance and did not change their views subsequently focused on cultural diversity issues as found in the following statements. S 124 (C; Female): “University was like a foreign land before I came because going to another province to study and to meet different persons felt like that. But now I am here the university is like the United Nations. There are people from all provinces, all walks of life, from the east and from the west. You get to know many individuals and that is very good”, S 28 (SS; Male): “University was like the television for me. As there are different programs in television, there are different people and different ideas at the university. It is now like a mosaic with different views, different cultures, the integration of people from different provinces, a cultural richness”. S 4 (SS, Female) emphasized that the university is a new beginning in her expressions: “University was like a flower garden before I came because it felt like a place in which many cultures lived together in harmony. But now I am here, it is like a ladder because you start everything about life here”.

Vocational/professional center

There are 9 views expressing that university is a center that provides vocational/professional training (Table 8). One of these views changed negatively as found in the

Table 8. Distribution of subsequent views of students who defined university as “vocational/professional center” prior to university entrance.

Prior to University Entrance			Subsequent to University Entrance	
Code	Metaphor	Category	Negative Change/Metaphor	Category
127	Treasure		Sunken ship	Disappointment
Code	Metaphor		Positive Change/Metaphor	
11	Crown of education	Vocational/ Professional center	Land of wonders	
100	Pomegranate		Family	Happy environment
117	Water		Rose garden	
24	Factory		Jug	Professional Training
26	Bridge		Bridge	
49	Start Line		Travel agency	
79	Dam		Library	
82	Factory		Scientific technical box	Research

following statement that displays disappointment. S 127 (C; Male); *“University was like treasure before I came here. I thought all the people who would provide me with information to get a profession were there. But now it is like a sunken ship. You feel you would feel relaxed when you get into university but when you realize that it is no different from high school; you understand you are in a sunken ship”*.

Positive views expressing that the university is a center to provide professional training continued positively including also new expressions such as a happy environment, professional training center and research center. S 26 (SS; Female) who continued to uphold the same view of university as a professional training center stated that *“It was like a bridge for me before I started university because I cannot do my dream job without getting sufficient training about it at the university. I need to store some things in my brain in spite of all the knowledge I already have. That’s why university is the preparation for my profession in one sense. It is still like a bridge for me now because university means doing good things and storing knowledge. I believe that the more I develop myself here, the more successful I will become in the future.* S 79 (T, Male) emphasized that the university is a place of research and study in the following statement: *“University reminded me of a dam before I started university. Just like a dam transforming incoming water to energy, the university provides students with professions with the help of the training provided there. But now I am here, it is like a library. University is an actual house of science”*.

RESULT, DISCUSSION AND SUGGESTIONS

Categories regarding university

Although demands for universities which have crucial impact on shaping individuals’ future professions, careers,

income levels, statuses, life standards and social lives are increasing day by day, having a profession is getting more and more difficult in Turkey as well as employment conditions and in the meantime, inadequacies of universities to meet the demands are causing student accumulation during university entrance process. In addition to these, the university entrance exams that require a lengthy and tiresome preparation process cause negative impact on the youth. Therefore, universities are perceived by students as institutions that are hard to get into. Student perceptions about university prior to university entrance such as *“place where hard work is rewarded, place that is difficult to reach, personal development center, a free place, culture center and vocational/professional center”* shows that. Studies in the literature also emphasize characteristics of universities such as preparing for life, personal development-maturity, transfer of knowledge-education, social and cultural activities, variety, transformation and production centers, tools, social learning and sharing, a family environment, entertaining environment, freedom, a place to experience various cultures, necessity, hard/boring/negative environments, disappointment and sadness (Dalgıç et al., 2012; Bozdemir and Uluman, 2012; Konaklı and Göğüş, 2013).

One of the salient findings is the fact that professional/vocational employment opportunities provided by universities were mentioned as a last item prior to university whereas they were cited as the first item upon entrance. This finding may be related to the fact that students regard universities as difficult to get into and focus on studying before they start focusing on their functions as providers of employment opportunities. Students believe that they will be rewarded for their hard work after going through this challenging process to get into university. Diversifications were observed in students’ views subsequent to university entrance. The most often repeated views subsequent to university entrance included perceptions of universities as *professional/vocational centers* and also the existence of

feelings of *disappointment*. The fact that professional/vocational employment opportunities provided by universities were mentioned as a last item prior to university whereas they were cited as the first item upon entrance shows that students became aware of this function of universities got they became disappointed since they could not meet their expectations there. Students also considered the university as *a culture center, research place, a happy environment, a new beginning, life example, loneliness and hardship* subsequent to university. Comparison of the conceptual categories for “before and after” university entrance shows that all prior perceptions regarding universities are positive, which is an interesting finding. This may be related to the positive mission attributed to universities by students and the society. However, some of the positive perceptions turned into negative perceptions subsequent to university entrance and the university was defined as disappointment, loneliness and hardship. This finding may be related to the inadequacy of universities to fully meet student expectations as well as the necessity to live in a different environment for the first time by leaving their families and face some problems for the first time on their own. In their study conducted on high school students’ perceptions regarding university, Korkmaz and Bağçeci (2013) similarly found the categories of a place with different characteristics, a process, future, cultural diversity and pessimism.

Common characteristics of universities

One of the categories formed in line with the most often used metaphors regarding perceptions (heaven, lush prairie, culture center, sky, holiday village etc.) is *the place where hard work is rewarded*. This finding shows that students define the university as a place they will receive the reward of hard work after a lengthy and challenging process of preparation. Although it was identified that previously positive views continued to be positive, some negative changes were observed due to the use of metaphors related to disappointment such as empty box, nightmare, prison and village and some students were disappointed. This and similar findings may be regarded as indicators that show universities cannot meet the expectations of students. Students with positive views diversified their views subsequent to university entrance and different characteristics of universities previously regarded as places where hard work is rewarded were started to be used such as research (camp, short cut etc.), life example (farm, sky), variety (world, potpourri), a happy environment (pigeonhole, above the clouds), professional training (atelier, mill, factory) and a new beginning (bridge of transition, a second world). Universities should be institutions that contribute to student development and transformation, make them happy to be there and accommodate varieties that will allow work and study options and present

different environments in addition to providing students with employment opportunities. Findings obtained in the study can be regarded as indicators that universities provide students with these opportunities, although they do not provide all the opportunities mentioned above.

Another category often mentioned by students prior to university entrance was found to be *place that is difficult to reach*. Intensive use of metaphors such as castle, Mount Kaf, summit of Himalayas and steel door shows the fact that students regard the university as a place whose entrance is difficult to achieve prior to university entrance. Some of the views regarding university as a difficult place to reach were changed for the negative subsequent to university entrance. Loneliness (a foreign country), hardship (a challenging race track), and disappointment caused by reasons such as not finding what they hoped for (low wall, corn poop) point to this fact. Disappointment may be caused by negative experiences other than not finding what they hoped for such as feelings of loneliness and emptiness because most students at university have left their homes and families for the first time and are alone in a foreign environment and have to live with strangers. This situation can cause undesired feelings such as loneliness in many students. The reasons of disappointment are varied based on both individual and institutional characteristics. Therefore universities should focus on not causing disappointment in students and they should be able to meet their academic, social, cultural and psychological expectations. Students’ views that continued to be positive were also diversified subsequent to university entrance. These students mentioned university characteristics such as variety (wheel of fortune, world, aquarium), research (data bank, library), and vocational/professional training (furniture atelier, field). When the metaphors used and the categories created are taken into consideration it can be argued that positive perceptions regarding the functions (providing employment opportunities, research and doing science, provision of social development) of universities are ongoing.

The negative changes in the views of students who considered universities to be *personal development centers* with metaphors such as center of science, education, art, sports and research are almost non-existent subsequent to university entrance. Two students changed their views negatively and defined the university as a disappointment (deserted island) and hardship (stone). Students whose views continued to be positive defined universities as professional/vocational center (door to opportunity, factory), life example (spider web, school of life), variety (culture palace, fruit garden), research (scientific/technical box, old man), happy environment (amusement park, home) and a new beginning (valley). These findings show that positive perceptions of students who regarded the university as a personal development center continued subsequent to entrance and not only does the university undertake this function but it diversifies it.

Prior to university entrance, 18 students defined university as a *free place* by using metaphors such as land of freedom, statue of liberty, island of freedom, kite and sky. The land of freedom metaphor is the most frequently used metaphor. This finding shows that university is regarded as a place free from responsibilities where all dreams come true. The task of universities is to educate individuals who consider the world from a wide perspective and who knows how to earn and keep their freedom (Gökçe, 1990). The university entrance examination process which requires preparation not only causes them to limit themselves in many respects but also stay away from social life and many activities that will add color to their lives. Stress to pass or fail the exam results in a more difficult process for students. In this context universities are like the keys to freedom for students who are restricted from various activities. The fact that students who start university stay by themselves can also be regarded as freedom. Universities, representatives of scientific research and freedom, are massive organizations that include a wide variety of students and staff. Ongoing news about universities by the media and communication channels and the fact that students are faced with such information regarding the characteristics of universities may have caused this perception of universities as a place of freedom. The perception of universities as a place of freedom continued subsequent to university entrance in the form of variety (culture palace, aquarium), professional/vocational training (mill, bridge), study/research (military) and a new beginning (rebirth, birthday cake). However, five students provided negative views subsequent to university entrance and defined the university as a disappointment (empty box, prison) and loneliness (foreign country).

Three of the 14 students who defined university as cultural diversity with the use of metaphors such as album, flower garden, ocean and fair prior to university entrance displayed negative views subsequent to university entrance and defined it as a disappointment (prison, high school). Views that continued to be positive subsequent to university entrance were diversified in the form of a new beginning (ladder, step), life example (life coach), professional/vocational training (door to opportunity, atelier), variety (mosaic, museum) and a happy environment (house with a garden).

The perception regarding *the professional/vocational training* function of university identified with the metaphors such as crown of education, treasure and dam prior to university entrance is infrequently observed (n=9). There is one student whose positive views changed towards negative and who defined the university as a disappointment. Positive views regarding the university as a professional vocational center continued positively subsequent to university entrance as a happy environment (land of wonders, family), professional/vocational training (jug, bridge) and a place of research (scientific/technical box, library). Although universities are perceived as

intuitions that first and foremost provide employment opportunities (Ceylan, 2008) it is a positive development to identify other functions of universities as well because the only function attributed to universities shouldn't be related to employment opportunities.

Suggestions developed in line with research findings are as follows:

The reasons why positive students' perceptions prior to university entrance changed negatively to disappointment, loneliness and hardship should be investigated. Necessary precautions should be taken by the universities so that feelings such as disappointment, loneliness and hardship are not experienced. Programs may be developed to present universities to high school students, instructors can be invited as experts and informative trips to nearby universities can be organized. Metaphors obtained in the study may be used as supporting tools by universities that want to renew themselves in making sense of their culture and their standings.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Gender disparity analysis in academic achievement at higher education preparatory schools: Case of South Wollo, Ethiopia

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Gender is among the determinant factors affecting students' academic achievement. This paper tried to investigate the impact of gender on academic performance of preparatory secondary school students based on 2014 EHEECE result. Ex post facto research design was used. To that end, data were collected from 3243 students from eight purposively selected schools. The analysis has been undertaken quantitatively using independent samples t-test, one sample t-test, Pearson correlation coefficient, Chi-square test, ANOVA and linear multiple regression. The findings revealed that there is statistically significant difference between male and female students favoring the former. Sample mean is statistically higher than regional and zonal mean scores. A statistically significant difference among sampled schools has been observed. Younger students have scored significantly higher result than the older ones. The proportion of male students in the upper achieving groups was significantly higher than females and the opposite was true for low achieving groups. More effort is needed by concerned bodies so as to narrow the gender disparity. Furthermore, additional studies should be conducted to investigate the performance differences among schools.

Key words: Gender, academic achievement, preparatory secondary schools, t-test.

INTRODUCTION

Education is considered as a first step for every human activity and the development of any country relies largely on the quality of education. It plays a vital role in the development of human capital and is linked with individual's well-being and opportunities for better living (Memon et al., 2010; Farooq et al., 2011; Ababa et al., 2012). As a result, educators, trainers and researchers have long been interested in investigating variables contributing effectively for quality of performance of learners (Farooq et al., 2011). Students' academic

performance is affected by hosts of inside and outside factors. These include individual and household characteristics such as age, gender, geographical belongingness, ethnicity, marital status, socioeconomic status, parents' education level, parental profession, language, income, religious affiliations, student ability, motivation and the quality of school. Gender differences in attitudes, parental as well as teacher expectations and behaviors, differential course taking and biological differences between the sexes may all be instrumental in giving rise

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to gender differences in achievement (Dayioglu and Turut-Asik, 2004; Farooq et al., 2011). Gender differences in academic achievement have been among the contemporary issues in the current academic debate all over the world (Abdu-Raheem, 2012).

Different studies have been conducted to investigate the impacts of gender on academic performance at different levels (elementary, high school, college and university) and on different subjects (mainly Mathematics, English, Sciences and CGPA). The findings are not conclusive. A study by Fergusson and Horwood (1997), Evans (1999), Lauzon (2001), Linver et al. (2002), Fortin et al. (2003), Dayioglu and Turut-Asis (2004), Abu-Hola (2005), Erdem et al. (2007), Gibb et al. (2008), Farooq et al. (2011) and Voyer and Voyer (2014) revealed that females performed better than their male counterparts and results were statistically significant. On the contrary, Bassey et al. (ND), Ewumi (ND), Jovanovic et al. (1994), Maliki et al. (2009), Awofala (2011), Doris et al. (2012), Udida et al. (2012) and Oluwagbohunmi (2014) disclosed that male students performed better than females and the results were statistically significant. On the other hand, no gender based statistical significant differences were found by Odeh (2007), Mlambo (2011), Abubakar and Adegboyega (2012), Abdu-Raheem (2012), Kangahi et al. (2012), Gupta et al. (2012) and Josiah and Adejoke (2014). A study by USAID (2005) pointed out that females outpaced males at the lower grade levels while the findings were not consistent at upper grade levels. A similar study in Ethiopia by Tasisa and Tafesse (2013), in colleges of teacher education, found a statistically significant gender difference in academic performance favoring the males. During 2010 academic year, the proportion of females in the first top ten ranks (in grade 12 of Memhir Akalewold higher education preparatory secondary school was) only 20.5% (compared to 79.5% of males). But it reaches 35.3% in 2014 (increased by 14.8%). Similarly, a survey study in Dessie city administration found that female students in grade eight (school based examination) consist of 56.6% of the first top ten ranks and 57.3% of the first top five ranks. Likewise, the proportion of females from the top ten percent in grade 8 regional examination during 2014 academic year was 57.4% while it was only 48.1% (as compared with 51.9% of males) from the bottom ten percent. All these circumstances triggered the researcher to further examine the effect of gender on academic achievement. This research, therefore, tried to look into the impact of gender on academic achievement based on 2014 EHEECE result in South Wollo, Ethiopia.

REVIEW OF RELATED LITERATURE

Women's education plays a vital role in their economic, socio-cultural and political empowerment. Murphy and Carr (2007) stated that girls' secondary education is a tool for poverty alleviation and sustainable development.

They added that, women secondary education results in social benefits to the whole society like increase in civic and political participation, lowered levels of sexual harassment, and reduced sexual and labor trafficking of young women. Taking all these significances of women education into account, world leaders have decided to narrow the gender disparity in primary and secondary education, preferably by 2005 and to all levels of education no later than 2015 (target 4 in the second goal of MDGs). Though some promising successes are recorded, the disparities in most nations especially in secondary and tertiary level are wide (UN, 2014).

Hosts of factors affect the enrollment, retention and achievement of women in the educational world. An important factor explaining the relatively low access of females to the educational system is the traditional value system placing greater premium on males than on females (TGE, 1993). A study by UNESCO (2012) disclosed that, in Ethiopian males have more access to education than females and greatest disparity is found in secondary education and above. The study identified poverty, socio-cultural factors, gender-based violence, early marriage and teenage pregnancy as major barriers affecting women's access to and completion of education. In addition, school related factors like lack of motivated and gender-sensitive teachers, of girl-friendly school environments, the absence of targeted interventions to support girls and quality education, as well as long distances to schools are determinant causes for low enrollment, retention and achievement of females students. Poverty as a factor that excludes girls from education than boys was also mentioned by Okioga (2013), UN (2014) and Rotich et al. (2014). Rotich et al. (2014) underlined the impact of poverty as "*when resources are scarce and the children to be supported in schools are many, the parents ignore the girl-child*". A similar study in Kenya (Achoka et al., 2013) and in Ethiopia (Wakgari and Teklu, 2013) found that stereotypic gender role dispositions, early marriages and female genital mutilation were among the traditional and cultural beliefs which made girls to perform dismally in their academic endeavors. Rena (2007) also revealed that female dropouts in developing countries are more sever. The study added that "*girls continue to be discriminated against by the parents first with respect to enrollment in school and later in providing higher as well as better education*". Parents' educational and employment statuses; females' self concept and the differentiating expectation of parents have their own contribution in students' academic achievement (USAID, 2005; Memon et al., 2010; Okioga, 2013; Rotich et al., 2014).

MATERIALS AND METHODS

Description of study area

The study was conducted in South Wollo, Ethiopia. South Wollo

Table 1. Higher education preparatory secondary school enrollment rate (Grades 11-12).

Year	Ethiopia			ANRS		
	Boys	Girls	Total	Boys	Girls	Total
2008/09(2001E.C)	146547	58713(28.6%)	205260	38040	14747(27.9%)	52787
2009/10(2002E.C)	156194	86194(35.5%)	243080	41486	23372 (36%)	64858
2010/11(2003E.C)	169571	118645(41.2%)	288216	44694	30840 (40.8%)	75534
2011/12(2004E.C)	184913	138872(42.9%)	323785	47563	36106 (43.2%)	83669
2012/13(2005E.C)	199147	159346(44.4%)	358493	51422	41982 (44.9%)	93404

Source: MoE (2013:41).

administrative zone, one of the twelve administrative zones in Amhara National Regional State (ANRS), is located in the Southeastern part of the region between 10°10'-11°41'N latitudes and 38°28'-40°05'E longitudes. It is bordered on the South by North Shewa zone, and Oromia region, on the west by East Gojjam Zone, on the Northwest by South Gondar zone, on the north by North Wollo zone and on the East by Afar region (ANRS-BoFED, 2009). During 2013/14 academic year there were 23 preparatory secondary schools in south Wollo with a total of 5617 students (3387 or 58.5% male and 2230 or 41.5% female). As depicted in Table 1, the enrollment rate of female students has been increased through time both at national and regional level. For instance, the proportions of female students at national and regional level have increased from 28.6 and 27.9% in 2008/09 to 44.4 and 44.9% in 2012/13 academic year respectively.

RESEARCH METHODS

Ex post facto research design (using already existing data) was employed in carrying out this study. Grade 12 Ethiopian Higher Education Entrance Certificate Examination (EHEECE) result of 2014 academic year has been used as a source of data throughout this paper. Preparatory secondary schools are transitions from secondary high school to university level and EHEECE result is considered as admission for higher institution. English, Maths, aptitude and EHEECE total result have been used in this study because they are compulsory subjects [are also frequently used indicators for academic achievement] and common for both social and natural science streams. EHEECE results are preferred to the school based examination results because standardized admissions tests are good predictors of performance in post-secondary programs (Lauzon, 2001) and can measure performance more consistently than examinations prepared at school level. Sex differences identified in the school based tests may reflect the effects and biases of the instrument (EACEA, 2010). As a result, standardized EHEECE result was used to examine the impact of gender on academic achievement.

Target population, sampling methods and samples

Students who took EHEECE in 2014 from South Wollo administrative zone were target populations for this study. EHEECE results from eight selected higher Education preparatory secondary schools were selected purposively based on their total number. Eight preparatory secondary schools that have more 250 students, namely Memhir Akalewold, Kombolcha, Haik, Sayint, Adjibar, Hotie, Wuchale17 and Borena were included in the study. These schools comprise 3243 (57.7%) of students out of 5617 who took EHEECE

in South Wollo during 2014 academic year in regular program.

Research questions and hypotheses

The primary intent of this paper was to critically examine the gender gap in academic performance in EHEECE result. The central research question was 'Is gender gap in academic achievement really converging through time?' To that end, the following four hypotheses have been formulated and tested.

1. H₁: There is no statistically significant difference in academic achievements between male and female students in EHEECE result
2. H₂: There is no statistically significant mean differences in academic achievement among higher education preparatory secondary schools in EHEECE result
3. H₃: there is no statistically significant difference between the sampled mean with zonal as well as regional mean in EHEECE result
4. H₄: there is no statistically significant correlation between EHEECE total result, English, Maths and Aptitude results

Design of the study and data analysis techniques

Quantitative research methodology has been employed in this study. Data were collected from the master roster and different quantitative data analysis methods have been applied with the help of SPSS version 20 and Microsoft office excel 2007. Percentages, proportions and mean were used to describe the descriptive statistics. Proportion of males and females (10% of high and 10% of low achievers) in EHEECE result were taken and examined whether gender has impact or not using Chi-square test. Independent samples t-test was used to analysis the mean difference between male and female students while one sample t-test was applied to compare the mean result of sampled schools with zonal and regional average result. Mean differences among sampled schools and age groups were tested using one way ANOVA.

Correlations among English, Maths, aptitude and EHEECE total results were analyzed using bivariate Pearson correlation coefficient. Linear regression was applied to examine the effects of age and sex (the only dependent variables available in the master roster) over EHEECE total result. The effect size of t-tests and ANOVA were examined using Cohen's *d* and Eta squared respectively. Quantitative data analysis was substantiated with data gathered from archives and in-depth interview with school principals and supervisors. Finally, conclusions and plausible recommendations were drawn based on the major findings.

Table 2. Sampled schools and age distribution of students.

School Name	Mean	N	%	Age in years	N	%
Memhir Akalewold	325.72	665	20.5	16	5	0.2
Kombolcha	344.98	526	16.2	17	253	7.8
Borena	295.90	355	10.9	18	1097	33.8
Haik	296.28	335	10.3	19	980	30.2
Sayint	347.68	308	9.5	20	753	23.2
Adjibar	350.55	308	9.5	21	97	3.0
Wucahle17	308.33	275	8.5	22	41	1.3
Hotie	306.86	471	14.5	≥23	17	0.5
Total	322.77	3243	100	Total	3243	100

Table 3. One sample t-test (comparison of sampled mean with regional and zonal means).

Mean EHEECE result	N	Mean	SD	MD	t	df	p
Regional (test value = 314.3)	3243	322.8	61.3	8.5	7.87	3242	0.00
Zonal (test value = 317.9)				5.3	4.89	3242	0.00

RESULTS AND DISCUSSION

Demographic characteristics

The results of 3243 regular students (1816 or 56% male and 1427 or 44% female) were analyzed in this study. The sampled students comprised 57.7% of students who took EHEECE in South Wollo in the regular program (see the proportion of students for each sampled schools in Table 2). The mean results of the region (ANRS), South Wollo Administrative zone and sampled schools were 314.3, 317.9 and 322.77 points respectively (out of 700). Adjibar preparatory secondary school has scored the highest point ($m = 350.55$) from the sampled schools while the lowest was scored by Borena preparatory secondary school ($m = 295.9$). Age of students ranges from 16 to 30 years old with an average of 18.9 years.

Major findings of the study

This part of the paper treated the major findings of the research mainly mean score difference of male and female students, comparison of sampled mean with the regional and zonal average, mean score comparison among the sampled schools and proportion of male and female students in the top and bottom achieving groups and correlation between EHEECE scores of English, Mathematics, Aptitude and total scores.

One sample t-test was conducted to compare the mean score of sampled schools to a population value (regional and zonal average). As depicted in Table 3, the mean score of the sampled schools was statistically higher than

the regional ($t(3242) = 7.87, p < .001$) and zonal mean ($t(3242) = 4.89, p < 0.001$). The sample mean 322.8 ($sd = 61.3$) was significantly greater than the regional (314.3) and zonal mean (317.5). The mean difference between sampled mean and zonal mean (5.3 points) was smaller as compared with regional difference (8.5 points). Students of the sampled schools have performed better than regional mean.

An independent samples t-test was conducted to compare the mean scores of male and female students in EHEECE. A statistically significant difference in mean scores of EHEECE between males and females was found with modest to moderate effect size of Cohen's d value. The result showed that male students obtained higher mean score than the females. The detailed independent sample t-test for total, English, Mathematics and Aptitude is depicted in Table 4. The largest difference (39.54 points) with 0.68 Cohen value was observed in the total EHEECE result for males ($m = 340.17, sd = 59.95$) and females ($m = 300.63, sd = 55.61$; $t(3153) = 19.42, p = < 0.001$, two-tailed). Male students have performed better than females in all cases. Similar result was also disclosed by Awofala 2012), Udida et al. (2012) and Oluwagbohunmi (2014). The t-test result was not in line with the findings of Abubakar and Adegboyega (2012), Abdu-Raheem (2012), Kangahi et al. (2012), Gupta et al. (2012), and Josiah and Adejoke (2014) which disclosed that female students have achieved similar result with their male counterparts. Different socio-economic and school related factors, which result in gender disparity in academic achievement, have been identified by USAID (2005), UNESCO (2012), Okioga (2013) and Rotich et al. (2014). Mutekwe et al. (2012)

Table 4. Independent samples t-test (mean difference in terms of sex of students).

Subject	Sex	N	Mean	SD	MD	t	df	p	Cohen's d value**
Total*	Male	1816	340.17	59.952	39.54	19.42	3153	0.00	0.68 (moderate effect)
	Female	1427	300.63	55.606					
English	Male	1816	45.64	11.242	4.62	11.69	3241	.000	0.41(modest effect)
	Female	1427	41.02	11.078					
Maths*	Male	1816	37.90	12.984	4.54	10.68	3214	.000	0.38 (modest effect)
	Female	1427	33.36	11.186					
Aptitude	Male	1816	45.29	11.613	3.95	9.70	3241	.000	0.34 (modest effect)
	Female	1427	41.34	11.412					

* the *t* and *df* values were adjusted because variances were not equal; **Cohen's *d* value is calculated based on Muijs (2004:136-137) as 0-0.2 (weak effect); 0.21-0.5(modest effect); 0.51-1(moderate effect) and greater than 1.0(strong effect).

Table 5. ANOVA result (mean comparison based on schools).

No	School name	Mean	1	2	3	4	5	6	7	8
1	Adjibar	350.6		2.9	5.6	24.8*	42.2*	43.7*	54.3*	54.6*
2	Sayint	347.7	-2.9		2.7	22*	39.4*	40.8*	51.4*	51.8*
3	Kombolcha	345.0	-5.6	-2.7		19.3*	36.6*	38.1*	48.7*	49.1*
4	M/Akalewold	325.7	-24.8*	-22*	-19.3*		17.4*	18.9*	29.4*	29.8*
5	Wuchale17	308.3	-42.2*	-39.4*	-36.6*	-17.4*		1.5	12.1	12.4
6	Hotie	306.9	-43.7*	-40.8*	-38.1*	-18.9*	-1.5		10.6	11.0
7	Haik	296.3	-54.3*	-51.4*	-48.7*	-29.4*	-12.1	-10.6		0.4
8	Borena	295.9	-54.6*	-51.8*	-49.1*	-29.8*	-12.4	-11.0	-0.4	
		SS	df	MS	F	p	Eta ² **			
Between groups		1361797.541	7	194542.51	58.162	0.000	0.112 (moderate effect)			
Within groups		10820537.545	3235	3344.834						
Total		12182335.087	3242							

*The mean difference is significant at the 0.05 level. **Eta value of 0.01-0.06 (small effect), 0.06-0.14 (moderate effect) and above 0.14 (large effect) (Cohen, 1988). Mean differences (ANOVA) among schools (rounded to one decimal point).

that female students in Zimbabwean were not treated equally with boys both in schools and at home, leading to under-achievement.

One-way ANOVA was computed (Table 5) to compare the mean result of sampled schools in EHEECE result. A statistically significant difference was found among the schools ($F(7, 3235) = 58.162, p < 0.001$). Tukey's HSD was used to determine the nature of the differences among schools and they were categorized into three homogeneous subsets based on their mean. Borena, Haik, Hotie and Wuchale17 were grouped in the lower achieving group, Memhir Akalewold as a medium achieving while Kombolcha, Sayint and Adjibar were

categorized in the upper achieving groups. The mean score for Adjibar was statistically higher than all schools except Sayint and Kombolcha. On the other hand, Borena has scored statistically lower than all schools except Wuchale17, Hotie and Haik preparatory secondary schools.

As depicted in Table 6, one-way ANOVA was computed to compare the mean EHEECE result of students into three age categories (below mean age, mean age and above mean age). A statistically significant mean difference was found among the age groups ($F(2, 3240) = 19.574, p < 0.001$). Tukey's HSD was used to determine the nature of the differences among age groups. The

Table 6. ANOVA result (mean comparison based on age category).

	SS	df	MS	F	p	Eta ²
Between Groups	145442.01	2	72721.005			
Within Groups	12036893.08	3240	3715.090	19.574	.000	0.012 (small effect)
Total	12182335.09	3242				

(I) age category	Mean	N	SD	%	(J) age category	Mean Difference (I-J)	P
≤ 18	330.61	1355	64.53	41.8	19	12.353*	.000
					≥ 20	14.657*	.000
19 (mean age)	318.25	980	60.58	30.2	≤ 18	-12.353*	.000
					≥ 20	2.304	.690
≥ 20	315.95	908	55.62	28.0	≤ 18	-14.657*	.000
					19	-2.304	.690

*The mean difference is significant at the 0.05 level. Dependent Variable: Total EHEECE result -Tukey HSD.

Table 7. Pearson Correlations coefficient* (N=3243).

	English	Maths	Aptitude
Maths	0.31		
Aptitude	0.54	0.44	
Total	0.70	0.62	0.69

*All correlations are significant at the 0.01 level (2-tailed) and Pearson correlation coefficient is interpreted based on Muijs (2004:145) as: <0.1 (weak); 0.1-0.3(modest); 0.31-0.5(moderate); 0.51-0.8(strong) and greater than 0.8(very strong).

analysis revealed that younger students (≤ 18 years old) had scored better ($m = 330.61$, $sd = 64.53$) than 19 years old students ($m = 318.25$, $sd = 60.58$) and 20 and above years old ($m = 351.95$, $sd = 55.62$). The mean score of 19 years old students and those with 20 and above years were not significantly different ($p > 0.05$). Tukey HSD test categorized age groups into two homogeneous subsets based on their mean. 20 years and above and 19 years old categories were grouped in the lower achieving groups while 18 years and lower age group was categorized in the upper achieving group. Younger students have scored better than older ones. The result obtained was not in line with the findings of Mlambo (2011), where there was no statistically significant academic performance between mature and younger students.

As displayed in Table 7, statistically significant positive correlation was found both among the three subjects and with the total EHEECE result. Maths (0.62), English (0.7) and Aptitude (0.69) results were strongly correlated with the total result. On the other hand, Maths result was moderately correlated with English (0.31) as well as

Aptitude (0.44) results while English and Aptitude (0.54) results were strongly correlated. The weakest correlation was observed between Maths and English while the strongest one was between English and total result. Students who have scored better in the total result also scored better in the three subjects used in the analysis. This implies that Maths, English and Aptitude are good indicators of academic achievement in EHEECE.

A chi-square test of independence was calculated (Table 8) comparing the proportion of male and female students in the top and bottom achieving groups. A significant interaction was found ($\chi^2(1) = 82.13$, $p < 0.05$) for top achievers and ($\chi^2(1) = 115.36$, $p < 0.05$) for the bottom groups. Male students have been more likely represented in top but less in the bottom than expected and the opposite was true for female students. During 2012/2013 academic year, the proportion of male students at national level who have scored 200 and less was 27.9% as compared with 72.1% of females. On the contrary, males comprise 74% while it was only 26% for females in the top achieving groups (above 500 points) (MoE, 2013: 50). During in-depth interview, school principals and supervisors agreed that the performance of female students has improved through time. According to the interviewees, it became common to see female students competing males and challenging teachers in the class starting from the recent past. Some six or seven years ago, it was rare to get females in the top achieving groups; but recently, their representation among the top achieving groups has increased tremendously. This improvement, according to the interviewees, is a result of the cumulative effect of the tutorial classes, guidance and counseling given, and their own self confidence which has been developed through time.

As indicated in Table 9, a multiple linear regression was calculated predicting EHEECE total result based on the age level and sex of students. A statistically

Table 8. Chi-square test (proportion of male & female students in the top & bottom achieving groups).

Total No of Students				Observed	Expected	Top achievers**		
Sex	N	%	Mean	(O)	(E)	df	χ^2 -value	Table value at 0.05
Male	1816	56	340.17	262	181	1	82.13*	3.841
Female	1427	44	300.63	62	143			
Total	3243	100	322.77	324	324			
Male	1816	56	340.17	85	181	1	115.36*	3.841
Female	1427	44	300.63	239	143			
Total	3243	100	322.77	324	324			

*Chi-square is significant at 0.05 level of significance. **comparison has been done by taking 10 per cent of students both from the top and bottom achieving groups.

Table 9. Linear regression (effect of sex and age on total result in EHEECE).

ANOVA						
	SS	df	MS	F	p	R square
Regression	1840393.106	2	920196.553	288.286	.000	0.151 (15.1%)
Residual	10341941.981	3240	3191.957			
Total	12182335.087	3242				

	Unstandardized Coefficients		Standardized Coefficients		t	p	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
(Constant)	628.335	18.525			33.9	.000		
age	-12.593	0.926		-0.229	-13.6	.000	.925	1.081
sex	-47.305	2.078		-0.383	-22.8	.000	.925	1.081

Dependent Variable: Total EHEECE result.

significant result was found ($F(2, 3240) = 288.286, p < 0.001$) with and R^2 of 0.151. Students' predicted total score in EHEECE is equal to $628.335 - 12.593(\text{AGE}) - 47.305(\text{SEX})$, where SEX is coded as 1 = male, 2 = female, and AGE is measured in years. EHEECE score decreases for females and older students. Age and sex together causes 15.1% of the variation in EHEECE score. The outcome revealed that, mean score decreases with age (B value is negative) and males performed better than female students.

CONCLUSION AND RECOMMENDATION

Ex post facto research design based on 2014 EHEECE result has been employed to examine the impact of gender on academic performance. All formulated hypotheses have been rejected and the alternative ones are accepted. The results of the study showed that male students have outpaced females in both cases (total, English, Mathematics and Aptitude). The result was statistically significant with modest to moderate effect

size. Though school principals have replied, during interview that the performance of female students in class based examination has improved through time, the finding of this study revealed the presence of gender gap in EHEECE result. Students who have scored better in their total EHEECE result also scored better in Mathematics, English and Aptitude subjects. This implies that the three subjects are good indicators of students' overall academic achievement in EHEECE. One sampled t-test result revealed that, sampled schools have scored better result than the zonal and regional average. The one way ANOVA outcome indicated that statistically significant differences were found among sampled schools which need further investigation. The proportion of female students in the upper achieving group was found statistically lower than male students. Younger students have scored significantly better result than older ones. Mathematics, English and Aptitude results were found to be better indicators of total score in EHEECE. More endeavors are needed to narrow up the gender gap in academic achievement. More tutorial classes and guidance services are required so as to improve the

achievement of females at the higher ladder of education. Experience sharing among better achieving and low achieving schools should be arranged by the zonal educational office. More efforts are expected from concerned bodies so as to improve the performances of female students and narrow the achievement gap among schools. Schools are not in the same level of achievement and further investigation is needed to examine and point out the disparities among schools so as to take remedial actions.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Unforgettable teaching: Memoirs of pre-service teachers' encounters with good teaching

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This study aims to analyze pre-service teachers' narrations about important teaching experiences, which mostly affected them and which they mostly enjoyed. In the present study, a qualitative research was used. The study was carried out with 214 pre-service teachers in Muğla, Turkey who wrote short memoirs on learning experiences as prompted by a research question. In these memoirs, they shared those experiences, which left the biggest impressions on them. The data were analyzed thematically and, based on the results, re-read through the concept of memoirs, in order to answer the question on how the data might be understood as elements of good teaching applications.

Key words: Course experience, good teaching, memoirs, teaching experience.

INTRODUCTION

We sometimes share our past school memories with families or friends. Usually, we reflect on the environment, atmosphere and ourselves and sometimes on our longings in these situations. Our memories affect us and reflect us. They are often just pieces of our lives but one of them can change or shape the entire course of it. In our memories, our happiness, longings, grievances, and angers are kept. The present study is an attempt to elicit the opinions of pre-service teachers who, through teaching, can observe the education process effectively regarding good teaching applications. The study was initiated out of a desire to ascertain what is missing or what should be included in good teaching applications through analyzing pre-service teachers' reflections in memoirs on the components of good teaching.

Remembering is an individual process constructed with our personal experiences. 'It is impossible to say what is

real or unchangeable in memories, or how the life lived and the current events have influenced memories about life as a student' (Kosonen, 1998, Cited in Uitto ve Syrjälä, 2008). What we have experienced is an interpretation rather than an original objective event. As pointed out by Kerby (1991), memoirs are hidden narrations of the past rather than the historically accurate representation of the past (Uitto and Syrjälä, 2008). Within the narrations of people about their pasts, we can catch the feelings and meanings embedded in the experiences. Stories are not seen as fixed or set, but rather as constructed through the relational interactions and negotiations of meaning that are made within the social and political contexts of life (Carey and Russell, 2011). Life can be interpreted as a story, something fundamental to understanding human action and knowledge. Life story or narration or life account: the

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narration of a life as the person lived it and/or tells it (Bolivar and Domingo, 2006). What kind of “tool” is the story? It is the kind of tool that enables one to understand how to feel about events. Stories shape experience and knowledge into forms that can uniquely establish their emotional meaning. That is, stories do not simply convey information and describe events; they shape their contents so that we, the readers, will feel good or bad, joyful or sorrowful, as we hear about them (Egan, 2008, 51). In the narrative inquiry, the researcher listens to the practitioner’s story; the practitioner who first tells his or her story. Narrative inquiry is a process of collaboration involving mutual storytelling, and restoring as a research proceeds. Narrative inquiry will help to understand how the students make meaning of their lives (Connelly and Clandinin, 1990). Our narratives capture our lives, and illuminate our joys, worries, intentions and beliefs (Richards, 2011).

Stories, including the narration of information concerning personal experiences, are special tools through which teaching applications and practices can be explained (Gudmundsdottir, 1995 Cited in, Fottland, 2004). Narrative inquiry provides a means to help pre-service teachers entering the field of education reflect upon their prior constructions and beliefs of what it means to be a teacher (Rushton, 2004). To “learn from experience” is to make a backward and forward connection between what we do to things and what we enjoy or suffer from things in consequence (Dewey, 1959). According to Dewey, experiences obtained from incidences or emotions are the sum of our prior experiences and a part of our future experiences (Cited in Rushton, 2004).

Stories provide a rich backdrop for understanding the contextualized situations in which teachers come to know what they know and make the decisions that they do (Rushton, 2004).

A story involves not only accounts of what occurred, but more importantly our experiences and understandings of what happened. The narrative structure is used to organize events into various kinds of stories such as biographical or autobiographical stories of individuals, and imaginative or fictional stories in the form of novels and fairy tales. These are stories about the self. They are the basis of personal identity and self-understanding and they provide answers to the question “Who am I?” (Polkinghorne, 1991:136). The story is our best tool for helping someone to understand what it is like to be someone else. We can thereby enlarge our understanding of others and enlarge our sympathy (Egan, 2008: 54).

People tell stories, but narratives are from analysis (Frank, 2000, Cited in Richards, 2011). As Frank notes ‘the researcher’s role is to interpret the stories in order to analyze the underlying narrative that the storytellers may not be able to give voice to themselves (Cited in Richards, 2011). Using pre-service teachers’ reflections in their teaching stories, the present study aims to identify

standards for “quality” teaching.

Standards of quality of teaching

What should be understood from quality teaching? When the literature concerning quality teaching or quality of teaching is reviewed, the following standards can be seen. Recommending a set of standards on which everybody agrees can be inconvenient because a standard questionnaire and the associated procedures may lack flexibility and be inappropriate for innovative forms of teaching (Kember et al., 2002).

Student surveys (aiming at evaluating teaching quality) have to consider the most valuable factors regarding teaching quality and quality of the lecturer, which consist of knowledge transfer, knowledge evaluation, accessibility of a lecturer, and his/her personality traits. Relationships between students and teachers are an unexpectedly crucial component of teaching quality evaluation. In most cases, relationships are the main drivers that strongly motivate students in their studies, exploration of new materials and own research (Veveře and Kozlinskis, 2011). The criteria included in the quality teaching measurement scales presented in the literature are summarized in Table 1.

Using the classifications given in Table 1, it can be argued that the quality of teaching depends on the subject matter, content design, learning environment, classroom management and personal and professional traits of the teacher. However, the commonly accepted philosophical view argues that these factors are not absolute and may change. For example, in settings where teacher-centered education is widespread, what students understand from good teaching is mostly related to the transfer of information and evaluation. For instance, Zerihun et al. (2012) report that more than half of the students relate good teaching to the provision of information by the teacher rather than organization of learning by the teacher. For the participants in that study, the teacher being punctual and knowledgeable in the subject matter seems to be of great importance. A second issue is that “facilitating student learning” and “encouraging student participation” as measurements could lead to evaluating teaching effectiveness based on student learning. However, these traits were mentioned by a very small number of teachers and students. Zerihun et al. (2012) state that the participants find feedback highly valuable but the feedback given was found to not contribute to the development of students and was usually given through exams. The majority of the students indicated their role during the instructional process as passive, listening to teachers’ presentations. In this respect, “good” learning is related to the philosophy owned and perception of learning theories. “Quality” learning is, on the other hand, related to many factors such as subject matter to be taught and dominant learning

Table 1. Quality teaching criteria.

Criteria	Sub-criteria	
Subject-Content Design	Promoting students' active and maximum participation	Chen et al. (2011); Gaspar et al. (2008)
	Motivating to help student achieve target skills and understand the subject matter	Davies et al. (2010)
	interesting and comprehensible	Gaspar et al. (2008)
	Flexibility in course syllabus	Kember and Leung (2008)
	Good organization –good preparation and structuring	Davies et al. (2010)
	Organization and presentation	Kember et al. (2002)
	Being a good role-model	Chen et al. (2011)
	Promotion of critical thinking and reasoning	Gaspar et al. (2008)
	Meeting students' future needs	Coffey and Gibbs (2001). Kember and Leung (2008)
	Motivating students	Gaspar et al. (2008) Kember et al. (2002)
	Contribution of visual and auditory equipment to quality	Gaspar et al.(2008)
	Involvement of students	Gaspar et al. (2008)
	Being active	Kember and Leung (2008)
	Relating theory to practice	Kember and Leung (2008)
	Realizing information transfer	Vevere and Kozlinskis (2011)
	Interaction	Kember et al. (2002)
	Group interaction, sharing	Coffey and Gibbs (2001)
	Drawing from real life events, actuality	Kember and Leung (2008)
Classroom management	Drawing attention, making good transitions, monitoring the class, re-arrangement of the tasks, giving feedback for particular behaviors	Chen et al. (2011)
	Establishing empathetic relations with students	Kember and Leung (2008)
	Motivation/enthusiasm of lecturer	
	Respect, sensitivity to students' problems, friendliness	Davies et al. (2010) ; Leeuw et al. (2011).
	Out-of -class time availability of the teacher	Coffey and Gibbs (2001);Vevere and Kozlinskis (2011);
	Individual Help	Kember et al. (2002)

theory or conceptions of learning theories (Allan and Pileičikienė, 2010). It is difficult to measure the perception of teaching quality for each student by using a crisp score. A more realistic approach may be to use linguistic assessments instead of numerical values (Lin et al., 2009).

METHODS

Within the qualitative methodological framework of the present study, student teachers' story of teaching is used. The present study draws on pre-service teachers' memoirs and reminiscences of good teaching. These are personal stories that usually emphasize what is remembered rather than who is remembering;

the author, instead of recounting his life, deals with those experiences of his life, people, and events that he considers most significant to the subject matter Through educational narratives, in contrast to case studies where specific situations are explained largely objectively, an author reflects more broadly on the personal values, ideological commitments, or spiritual purposes that shape teaching and learning. Narratives of this sort come in a variety of forms, the most common being memoirs and stories that describe some form of professional or personal identity crisis faced by a teacher (Rosiek and Atkinson, 2007). In the present study, in order to elicit reflections related to the learning and teaching process, an experiential narrative approach is adopted. Experiential narrative has two formats -- memoirs and narratives of identity crisis. While memoirs mostly focus on career history and student teacher relationships, narratives of identity crisis mostly focuses on institutional and cultural context (Rosiek and Atkinson, 2007: 512). Qualitative data were collected from participants submitted and

story about most effected teaching event.

Study group

The study group of the present study consists of a total of 214 pre-service teachers, 108 of whom are third-year students of the Education Faculty of Muğla University and the remaining 106 students are the graduates of the Faculties of Science and Letters attending the teacher formation program of Muğla Sıtkı Kocman University. Nearly 40% of the participants in the latter group have teaching experience as private tutors or private course instructors. Their mean age is also higher than that of the undergraduate student group. The youngest participant in this group is 23 years old and the oldest is 38. The members of this group are the graduates of nine different universities. Participants included 133 females and 81 males.

Research process

What the pre-service teachers with a long career of schooling understand by "good teaching" was a source of wonder in this study. What they reflect on regarding their prior teaching and learning experiences might not necessarily be what they will do in the future; yet, from their reflections, important clues might be drawn about good teaching and components of it. Rather than using long, unguided journals, it was thought that short narrations or stories from the pre-service teachers would serve as a better option in answering the question, "What is the pre-service teacher's perception of a good teacher?" The pre-service teachers were given a form developed by the researcher. They were asked to narrate a learning-teaching incident which had affected them the most and what had affected them the most in this incident. They were asked to write freely. The pre-service teachers voluntarily shared their memories. They completed writing their memoirs within 3 to 12 min. Of the 214 students, 17 pre-service teachers stated that they did not have anything worth remembering. Additionally, 11 pre-service teachers did not want to respond. As another 11 pre-service teachers wrote about highly general things, their statements could not be organized into themes. Therefore, in the present study, the memoirs of 175 pre-service teachers were analyzed and organized.

Research questions

- What is the educational incident that has mostly affected the pre-service teachers during their school lives?
- What were the components of the incident to which the pre-service teachers (undergraduate) and pre-service teachers attending the formation program (graduate) attach the greatest importance?

Data analysis

Within the framework of the present study, first a general evaluation of the memoirs written by the pre-service teachers was carried out for basic analysis. Then, the memoirs were classified into themes. After themes were determined, the memoirs of the pre-service teachers were re-evaluated and grouped into the themes. In order to determine whether the memoirs were truly related to the themes they had been grouped into, opinions of experts were sought. They were asked to decide into which themes a random selection of memoirs should be organized. In this respect, interrelated consistencies concerning which memoirs were related to which themes were examined and it was found that the consistencies were high.

RESULTS AND DISCUSSION

It is seen that in works written by some scholars, messages embedded in memoirs and short narrations have important roles. Though, there are some concerns about how correctly these messages can be understood. For example, in the 13th century, Mesnevi (2010: 128-129) points out that as people usually focus on the parts of an event about which they feel curious, the real message may get lost. And he says "...I have been in many societies; I have been a friend with bad people and good people. Everyone has been friend to me in their own way. But, nobody could understand my secrets. My secret is not very distant from my cry, but not every eye and every ear has this divine light."

Nonetheless, it is indisputable that these memoirs have important messages for life and contain references to their societies, communities and lives that provide insight into understanding the philosophies and environments they represent. In this section of the present study, the memoirs of pre-service teachers are put into themes and their messages are interpreted.

What is the educational incident that mostly affected the pre-service teachers during their school lives?

Based on the pre-service teachers' responses to this research question, their most significant experiences are presented in themes as follows. The themes are organized from the most preferred to the least.

Active participation, being involved in incidents of learning

Active participation and being involved in incidents of learning are important components of the most affective learning experiences recalled by the pre-service teachers in their school lives. Some of the memoirs written by undergraduate students are presented below:

... the teacher divided us into groups and gave each group a thermometer. Then he took the groups outside the class. The groups measured the temperature. Then the groups made short presentations about their measurements.... At the end of the lesson, I perfectly learned how and under which conditions to use a thermometer... (Student teacher Ş.K.).

Though I hated my science course, through a project assigned in this course, I learned perfectly. I had to prepare a periscope. I went to some carpenters and workshops to collect the required materials and then I made the periscope... as I had prepared everything myself, it resulted in permanent knowledge...(Student teacher M.T.).

In some of the memoirs of the pre-service teachers

attending the teacher formation program, *active participation and being involved in learning incidents* also seem to be considered important components of a good teaching experience. For example:

Our teacher selected two novels and then created a voluntary group to work on these novels. We determined the characteristics, superficial aspects, etc., and then discussed with the other group ... For the first time, we as students were in the forefront. We realized that we have broad viewpoints on novels...(Student teacher R.M.)

While I was attending a vocational school to become an optician, the teacher was teaching the number and axle values of glass of glasses and I could not understand anything. In application class, I put a glass on a pachymeter and observed its axle values and numbers, this is the most effective learning experience I have ever had...(Student teacher G.C.)

Learning by doing

Learning by doing is regarded as an important component of positive learning experiences by the pre-service teachers. Thirty two of the memoirs written by the pre-service teachers were found to be related to this theme. Some of these memoirs are given below. These are taken from the memoirs of the undergraduate students of the Education Faculty:

While I was in high school, our German teacher was teaching us the names of fruits and vegetables. He wanted us to bring fruits and vegetables to the class. We learned their names, how to write and pronounce them. He let us eat the fruits we brought during the last ten minutes of the class (Student teacher M.S.)

We carried out an experiment about air-pressure when I was a second-year student at university. We connected the pipes and hung them on the wall. We filled the pipes with sour-cherry juice. Then, we blew into the pipe and in this way we demonstrated air-pressure... (Student teacher H.B.).

Selected memoirs written by the pre-service teachers attending the teacher formation program in relation to this theme are included below:

...We used an experiment (acid-base reaction) in geography class that we had learned in our science and technology course. We presented an acid-base reaction as an eruption of a volcano while presenting on the topic of volcanoes. I think we both learned and taught very well ...(Student teacher A.B.)

While I was a third-year university student, our teacher brought an instrument to measure radiation. When we

brought it closer to the telephone, it generated stronger sound. I have never forgotten this instrument, radiation and matters emitting radiation...(Student teacher T.B.)

Using an unusual method – using strategies that facilitate recall

Using an unusual method in the classroom seems to be an important component of good teaching. Twenty eight of the memoirs written by the pre-service teachers were found to be related to this theme. Some of them are presented below:

I went to another teacher to ask about a subject I had not understood in mathematics class. The subject I did not understand was what complementary angles and supplementary angles were. That is, which of the angles, 90 and 180, is complementary and which one is supplementary. He said that we need to decide according to number of syllabus; in this way, I learned how to distinguish these angles... (Student teacher T.S.)

In social studies class, our teacher composed a song from a topic which we had found very difficult to memorize and recall... We found teaching information about political parties through music very interesting and this resulted in easy and permanent understanding... (Student teacher M.E.)

Some of the memoirs written by pre-service teachers attending the formation program also related to this theme.

We learned the English alphabet in the form of a song ...(Student teacher I.N.)

Everything we learned in our anatomy course was learned through cadavers and models and also coding models; this resulted in permanent knowledge retention. I can still remember what I learned in this course ... (Student teacher A.N.)

Affective experiences

Twenty eight memoirs written by the pre-service teachers appear to be related to affective experiences. Some of the memoirs written by the undergraduate students are given below:

When I was a seventh grader, I was walking around in the garden of the school. Instead of throwing the bottle in my hand into bin, I threw it onto the ground. After I took several steps, one of my friends called me, I turned back. At that moment, one of my teachers picked the bottle up and looked at me for a few seconds without telling anything to me, and then threw it into bin. Since that

time, I have been very careful about such issues... (Student teacher C. A.)

I did not know anything about mathematics when I was a second-year student in high school. My mathematics background was very weak... But now our mathematics teacher was teaching us as if he was telling a story. He simplified the subjects and he was joking with mathematics and in this way, trying to show us how easy mathematics was. At first, I had some difficulties. I was not memorizing anymore. He taught us trigonometry through poetry and endeared it to me... (Student teacher M.T.)

The effects of affective experiences on teaching can also be seen in the memoirs written by the pre-service teachers attending the formation program:

I can tell that I have always tried to be ready for the classes of the teachers I liked and have been more open to learning in them. And I think being liked is related to listening to and valuing what students say. My prejudice against mathematics was broken by this teacher... (Student teacher A.K.)

... I drew a tangled picture. When my peers mocked my picture, the teacher told me that it was beautiful. ... I now know that it was a bad picture but the support given by my teacher was of great importance... (Student teacher R.M.)

Relating to real life

It can be seen that 14 of the memoirs written by students are related to this theme. Some of these memoirs are presented below:

...Our teacher invited a traffic warden to the class for a Traffic and First-aid course. After some applications in the classroom, we worked in pairs together with traffic wardens on a street close to the school... (Student teacher H.F.)

... while studying water pressure, we examined the natural water reservoirs around us (places where water naturally accumulates; in rural areas they are used as a source of drinking water and irrigation), and, while doing this, I learned how drinking water comes to our houses... (Student teacher T.J.)

In some of the memoirs written by the pre-service teachers attending the formation program, the effects of relating learning to real life can be seen:

...I do not like Ottoman Turkish. I am not very good at it either. Our teacher, knowing that we did not like it, took me and my four friends to the cemetery one day. He wanted us to read the Ottoman Turkish on the tombs in

this cemetery. We first started to clean the tombs like archeologists. We deciphered the writings on the tombs sometimes by reading and sometimes by making guesses from the few words we understood. Do people entertain themselves in a cemetery? That day, we had a great fun there (Student teacher M.Z.)

It is seen from the memoirs of the pre-service teachers from both groups that relating learning to real life and giving examples from real life are among the elements of good teaching.

Drama play

The pre-service teachers in the study felt that drama and play were important components of good teaching. There are nine memoirs mentioning drama and play as important elements of good teaching. These memoirs can be seen in both groups. Some of them are given below:

When I was a first grader in elementary school, our teacher wanted us to write a number from 1 to 20 on a piece of paper and then put it inside a balloon. Then we went to the playground of the school and burst them. Then we got the number inside the balloon and then wrote it as beautifully as we could... those who were able to burst four balloons wrote a problem by using four numbers... (Student teacher B.P.)

When I was in English class in high school, we played a game with the help of a friend who liked English very much; hence, he was very successful in the course. It was like the game Taboo. Without telling the target words, we gave some clues so that our friends could find the target word. It was both useful and fun... (Student teacher K.O.)

Some memoirs from the pre-service teachers attending the teacher formation program:

When I was in high school, our literature teacher used to come to class dressed in different styles when he taught us poets and authors of different eras. He also made use of videos and audio-tapes in order to present the lesson like a play in a theater. These things had a great impact on me and endeared me to literature ... (Student teacher T.T.)

We learned the play of Şinasi "Şair Evlenmesi" in class in the form of a drama activity when I was a sophomore at university. Drama method made the messages more clear.... (Student teacher Ş.E.)

Use of media-technology

One of the most important components of good teaching

seems to be related to the use of media and technology in class. Eight pre-service teachers mentioned the use of media and technology in their memoirs. A few of them are presented below:

While we were learning some trends in educational philosophy in an introduction to educational sciences course, we watched the film "Dead Poets Society" in order to see the applications of these trends ... this was a lesson where I learned without memorizing.... (Student teacher Ö.O) .

One memoir from the pre-service teachers attending the teacher formation program is as follows:

The pedagogic content of a movie in which an autistic child has great achievements with the help of his mother and science teacher who use methods of teaching appropriate for this child profoundly affected me...(Student teacher O.T.)

Repetition and reinforcement

Repetition and reinforcement are among the components of good teaching but it seems that they are not viewed as being as important as the ones mentioned above by the students. Only 6 undergraduate students mentioned these elements in their memoirs as an indication of good teaching. Some of them are presented below:

Our high school history teacher could find time to revise the subjects of the first week of class even though we were in the last week of the term. Even the weakest student in the class did not forget what he had taught because of the amount of revision. As we did not forget anything even without revising before the exam we could get good marks. While he was leaving class, he used to smile at us...(Student teacher G.H.)

When I was a first grader in elementary school, I tried very hard to get the red ribbon given by the teacher ... (Student teacher K.K.).

Good teaching in other memoirs

The themes mentioned regarding good teaching in six of the pre-service teachers' memoirs are different from the ones mentioned above. These themes are inclusion of questions and discussions in the class (two pre-service teachers mentioned this), the importance of education given in a family setting (one pre-service teacher), and the teacher's forcing students to learn and imposing sanctions.

The other themes are the use of the senses and proving theories and ideas. An important component of

good teaching seems to be the *use of the senses* according to the participants. Five pre-service teachers from the teacher formation group mentioned this theme in their memoirs. *Proving theories and ideas*: The pre-service teachers think that proving the validity and logic of theories and ideas is an important part of effective learning and teaching though not as much as those mentioned previously. Only in two of the memoirs written by the pre-service teachers from the department of classroom teacher education, is mentioned as an important part of effective learning and teaching.

The 175 pre-service teachers were asked "with reference to the memoirs you have just written, which components of those educational experiences have affected you the most?" They were told that they could give free responses to this question or that they could give their responses by marking the related parts on their memoirs. The incidents reported as affecting them the most in terms of good teaching were isolated into undergraduate and graduate pre-service teacher groups and are presented in Table 2.

Taken from the responses given in memoir form to an open-ended question, the experiences, which the pre-service teachers thought, were of great importance for good teaching are presented in Table 2. From these findings, it is seen that the undergraduate pre-service teachers think that "learning by doing" (22%), use of interesting and different methods (15%), active participation in learning experience (11%), and use of films or interesting materials are the most important to good teaching. According to the pre-service teachers in this group, a teacher being impressive, reliable and relaxing, learning in different settings, playing games, drama and role-play are other things important for effective learning and teaching. On the other hand, graduate students attending a teacher certificate program think that the most important component of good teaching is giving practical information that is useful for real life (38%). This is followed by active participation (16%), use of interesting and different method (13%), teachers being impressive, relaxing and reliable (9%), and use of drama and role-play (7%).

When the standards presented in Table 1, concerning how good teaching should be, are compared with the opinions of the pre-service teachers in our sampling, it can be claimed that the pre-service teachers think that learning by doing, experiencing and active participation are more important than the other elements for quality teaching. Moreover, older pre-service teachers (formation program attendants) think that good teaching should provide practical real-life information. When the memoirs mentioning the use of unusual methods are analyzed, it is seen that they primarily refer to alternative learning environments where educational objectives used are demonstrated. Of the memoirs written by the pre-service teachers, 28 are related to this theme. In these memoirs, the pre-service teachers note that it is good for

Table 2. The incidents most affecting the pre-service teachers in their memoirs.

Incidents affecting pre-service teachers the most	Undergraduate students, Education Faculty		Graduate students in teacher formation program	
	F	%	F	%
Learning by doing	22	22	3	5
Different methods	15	15	7	13
Active participation/learner-centered	11	11	9	16
Film material	11	11	1	2
Impressive and relaxing teacher	7	7	5	9
Teaching in a different setting	6	6	-	-
Play	5	5	-	-
Drama/ role play	3	3	4	7
Students' displaying their abilities	3	3	-	-
Arousing interest	2	2	-	-
Long-lasting	2	2	-	-
Reinforcement	2	2	1	2
Fun	2	2	-	-
Assessment method	1	1	-	-
Classroom design	1	1	-	-
Language use competency	1	1	-	-
Enthusiasm	1	1	-	-
Being free	1	1	-	-
Interesting	1	1	1	2
Learning how to listen	1	1	-	-
Giving practical information	1	1	21	38
Use of the senses	-	-	3	5
Urging students and discipline	-	-	1	2
Total	99	99	56	101

knowledge acquisition and comprehension to be in a learning environment where the short-term memory can be stimulated using strategies and approaches related to the teaching target. In addition, as can be seen in Table 2, pre-service teachers think that creating opportunities for permanent learning, providing reinforcements and repetition, arousing curiosity, and urging students and imposing discipline in the learning environment are other important components of good teaching. This demonstrates that the pre-service teachers are describing good learning experiences from a behaviorist perspective.

Some closing thoughts

In light of the findings of the present study, it can be claimed that the undergraduate pre-service teachers think that learning by doing, active participation and enhancement of this participation with films and/or other materials and use of teaching methods different from what they are used to are the most important components of good teaching. The more experienced, older graduate students teachers attending the teacher formation program think that the most important thing for good

teaching is providing practical information that can be readily applied to real-life. Like the undergraduate pre-service teachers, the formation students also think that active participation and the use of unusual methods are among the components of good teaching. Moreover, when the messages given in the themes mentioned by the pre-service teachers in their memoirs are analyzed, it is seen that "good teaching" is mostly related to the following themes:

1. Being related to real life,
2. Active participation, students being involved in their learning,
3. Learning by doing and experiencing,
4. Providing reinforcement and repetition,
5. Providing affective experiences,
6. Including drama, role play and games,
7. Proving ideas,
8. Use of media and technology and
9. Using unusual methods or using strategies facilitating recall

Moreover, the pre-service teachers think that sometimes for good teaching, the borders of the classroom should

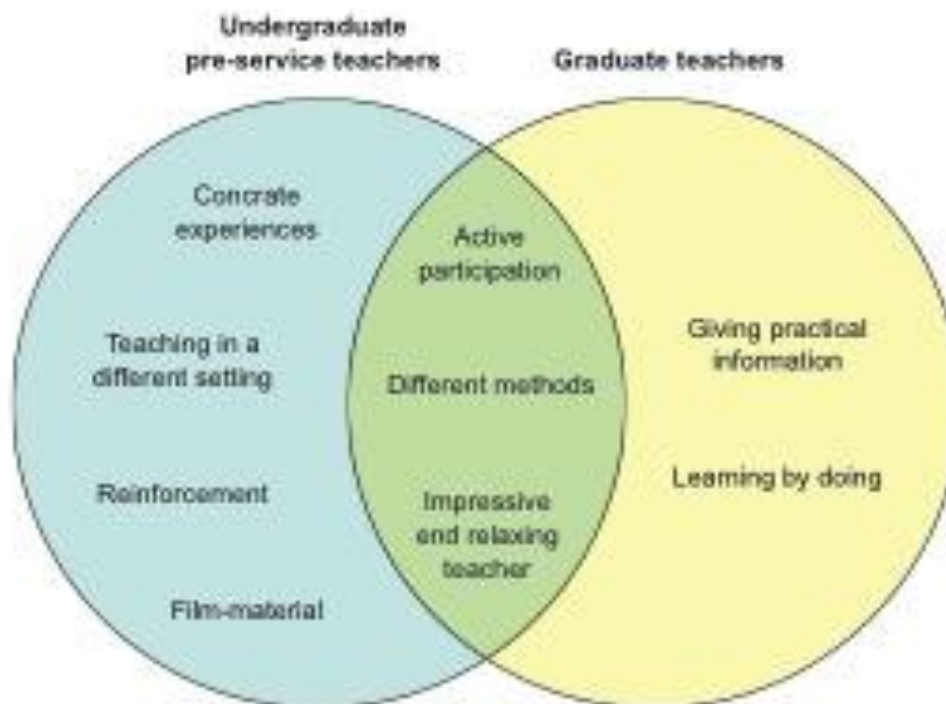


Figure 1. The opinions of graduate and undergraduate pre service teachers about 'good teaching'.

be erased. In this respect, teaching should not be restricted to the classroom. For example, students can learn the traffic rules by observing the traffic outside; they can learn nature by visiting a forest; even cemeteries can be a place of learning. The present study also reveals that certificate program students (they are older than the undergraduate group) attach more importance to the presentation of practical information in lessons.

Another remarkable point is that most of the memoirs written by the pre-service teachers are related to the elementary and secondary school years. Good examples recalled by the pre-service teachers occur mostly in elementary school years; moreover, although they are easier to remember as they are closer in time, not many memoirs related to higher education and teacher certificate programs were written. This may indicate a need to review the education given at universities. Memoirs can also be claimed to reflect the pre-service teachers' beliefs about their prior experiences. Depending on philosophical viewpoint and beliefs about learning theories, memoirs can differentiate. Yet in the memoirs written by the pre-service teachers about good teaching, some elements come to the fore as components of good teaching such as "it should include practical life events", "settings different from the classroom should be used for various teaching purposes", and "the teacher should be impressive, relaxing and reliable". These statements can be used as test items for the purpose of evaluating good teaching.

The opinions of undergraduate and graduate pre-service teachers about "good teaching" are presented in Figure 1.

Learning by doing and experiencing and active participation are not only important for young children but also for adults. The findings of the present study show that concrete experiences, active participation, being involved in learning, and learning practical information are very important for adults.

Standardized questionnaires lack flexibility and they may not be suitable for more innovative pedagogy. Some criteria that can be drawn from the memoirs written in the present study may lead us to think that some items can be suggested for a test to be developed to evaluate quality teaching.

We can tell that changes in the pre-service teachers' perceptions of good teaching do not happen in a short time. As stated by Sinatra (2002), conceptual change is not sudden but more of a gradual process. It is evolutionary rather than revolutionary. Memoirs written by students can be used as a tool with the potential to affect this change.

The present study has some limitations. Follow-up interviews, which were not conducted in the present study, could be done with pre-service teachers after writing their memoirs in order to confirm or gain additional information or insights. Future studies may look at variables that have the power to affect the content of memoirs in different samplings.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

The relationship between physical activity level, body mass index, and body fat percentage in urban and rural elementary school students

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The purpose of this study is to compare the physical activity levels, physical activity types, Body Mass Index (BMI) and body fat percentage (BF%) values of elementary school students living in rural and urban. Body height (BH), body weight (BW), BF% and BMI data were measured. Physical activity questionnaire was conducted to determine the activity types and daily activity habits of the subjects. As a result of the study it was seen that the rural student were more active and fit than urban. In this study swimming was not preferred in either urban or rural areas. Team sports are most popular physical activity in our country.

Key words: Body mass index (BMI), body fat percentage (BF%), physical activity level, elementary school student.

INTRODUCTION

Technological developments have resulted in more comfortable and less physically demanding lifestyles in developed and developing societies (Robinson, 2001; King, 200; Lohman, 1999; Grund, 2001; Preboth, 2002; Faith, 2001). One of the most significant components of a healthy lifestyle is physical activity (Twiks, 2002). Some research has been carried out in an effort to emphasize the importance of physical fitness, physical activity and overall health (Gunnar, 1998; Dos Santos, 2014). A lifestyle of regular physical activity contributes to various systems functioning more efficiently, weight maintenance, reduced risk of mortality and overall improvement of quality of life (Bouchard and Shephard, 1994).

Many factors are associated with adopting and maintaining a physically active lifestyle, such as socio-

economic status, cultural influences, lifestyle, environmental factors, and health status (Seefeldt, 2002). School athletic opportunities are a most effective factor in increasing children's physical activity (Strauss, 2001). Nowadays, children and youths find watching television or playing video games more desirable and easier than physically participating in activities themselves. Even our school systems, because of limited financial resources, have contributed to a sedentary lifestyle by devoting fewer resources to physical activity instruction, playgrounds, and after-school sports programs (King, 2000). Physical education is one of the subjects that children are required to take in school. Physical fitness is not just a benefit in sports and physical education; it is also a major factor in leading a happier life (Rudolf, 2001; Thompson,

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2001). Reilly et al. (2004) published that young people spend 80% of their time in sedentary activities and that this early sedentary lifestyle is the basic leading risk factor for obesity (Reilly, 2004). Deheeger et al. found a positive correlation between time children spend in front of the TV and body weight (Deheeger, 1996). Klesges et al. have stated that spending too much time in front of the TV not only causes inactivity but also decreases basal metabolism and energy consumption (Klesges, 1993). Another study executed in the United States of America showed that the physical activity levels decrease in children and young people. They spend 75% of the day inactive (Reilly, 2004). İşler et al. performed a study on children in the 11-14 age group where they evaluate the physical activity levels based on differences in age and gender. They said that boys are more active than girls and also subjects have moderate level physical activity capacity (Kin-İşler, 2009). Özdirenç et al. classified children in the 9-11 age group according to their socioeconomic levels and then they compared their physical activity levels. As a result of the study BMI and skin curve thicknesses of the children living in rural areas is higher than the ones living in urban areas (Özdirenç, 2005).

There are a lot of studies in many countries, which evaluate the physical activity level of children and young people (Rowlands, 2008; Trost, 2003; Docherty, 1991; Rowland, 1991; Martin, 1996). However, there are few studies in our country that compare the physical activity levels of elementary school students living in rural and urban. Therefore, the purpose of this study is to compare the physical activity levels, physical activity types, BMI and BF% values of elementary school students living in rural and urban.

MATERIAL AND METHODS

The study included 11-13 age 1030 volunteers' elementary school students who were 527 boys and 503 girls. The average of BH and BW of the subjects were 154.4 ± 10.0 cm, 47.1 ± 12.4 kg; 153.9 ± 8.1 cm, 47.7 ± 11.8 kg, boys and girls respectively. Three schools were chosen among schools in the rural and urban areas of Turkey. The necessary permissions were obtained from the parents of the students before the measurements.

The height of the participants was measured with (SECA 285, UK) a stadiometer. BW, BF% and BMI were measured by the bioimpedance method with a body composition analyser (Tanita BC 418 Weight and Segmental Body Composition Analyser, Japan).

The physical activity data were collected with the questionnaire form by meeting with the students face to face. Physical activity questionnaire was composed of 10 questions. The data were collected during face to face interviews. The physical activity questionnaire was applied to all students participating in the study. The physical activity questionnaire was composed to measure the activity types, daily movement habits of the subjects, and to measure the types and frequencies of the activities done on weekdays and weekend. The interclass correlation coefficient was calculated using the SPSS 17.0 statistics package (SPSS Inc. Chicago, USA) to determine the reliability of the questionnaires [0.92 and 0.93]. Points out of 100 for the questionnaire of each

subject formed the questionnaire points. The assessment was conducted by giving 0 point for the option of "never", 1 point for the option of "sometimes" and 2 points for the option of "every day" in the questionnaire.

The statistical analysis was used to evaluate the questionnaire score, BF% and BMI measurements. Data obtained were described, compared and correlation analysis was done. In correlation analysis, Pearson correlation coefficient value and p value belonging to this coefficient was given and the significance of the statistical relationship was tested. From the aspect of BF% and BMI in identifying whether there is a difference between the male and female students independent samples t-test analysis has been used. In comparison of the rural and urban areas and in detection of whether there is a difference among genders SPSS for Windows Version 11.0 Pearson chi-square tests were used.

RESULTS

BMI of children who live in urban is lower than that of children who live in rural area. The PAQ scores of rural girls were found higher compared to the PAQ scores of urban girls. The PAQ scores of urban boys and rural boys were found similar (Table 1). The BF% and BMI values of the urban elementary school students were relatively low compared to those of the rural elementary school students (Table 2). Walking to school is a daily activity for the rural children (Figure 1). Urban boys were found to participate in school sports more often than rural boys. Rural girls were more active in school sports than urban girls (Figure 1). Rural boys and girls had more play with pets compared to the urban boys and girls. Bicycling to school was not a popular activity for either the rural or urban students (Figure 2 3). Swimming was the least preferred activity for both urban and rural students (Figure 3). The study found that rural boys and girls participated in team sports, such as football, volleyball, and basketball (Figure 1). Games such as jump rope, and other touch games were played by girls than boys, and also these games were more popular in rural than in urban children.

DISCUSSION

The result revealed the rural boys and girls were found to have lower BF% compared to urban boys and girls. However when PAQ scores were evaluated it was seen that the rural boys were more active than rural girls, urban boys and girls. When PAQ scores are reviewed it can be seen that generally rural areas are more active than the boys and girls who live in urban. Physical inactivity and lack of exercise result in many problems including threatening or limiting a healthy life. Although the rural children were found to be similar physically active, their BF% were high due to their diet. BF% can differ according to age, nutrition, race, environmental factors and gender (Docherty, 1991; Januszek, 2014). Golan et al. said that the type of nutrition, the variety of food at home, and the manner of eating will influence

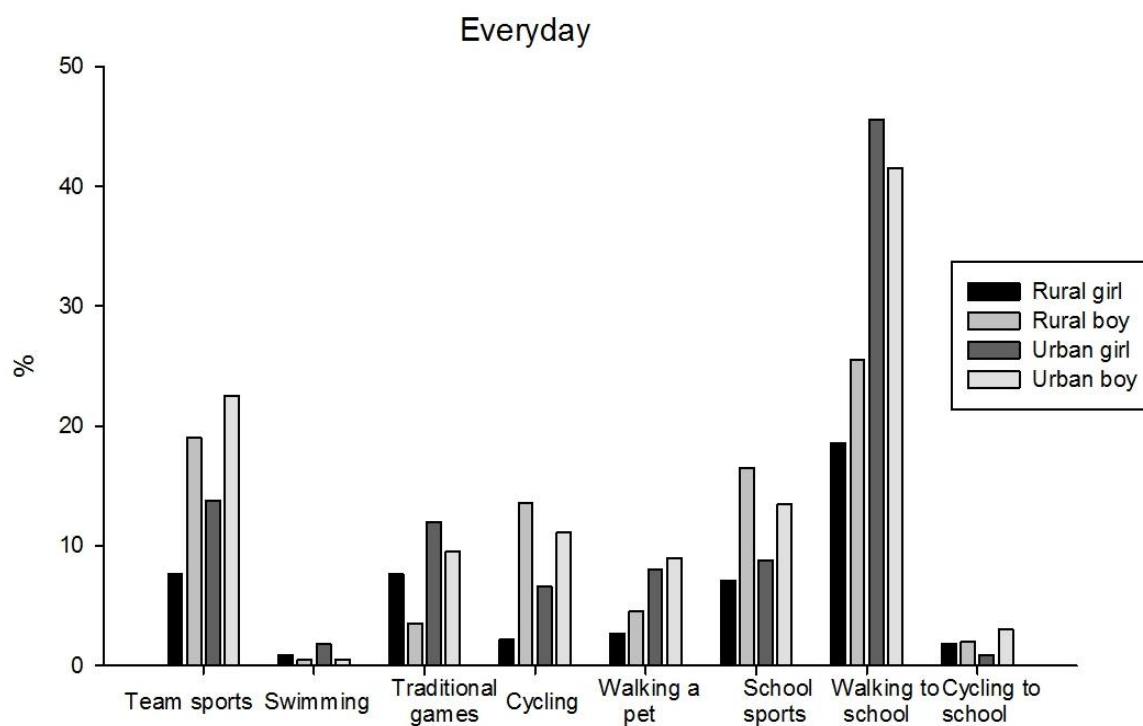
Table 1. PAQ score, BMI and BF% values in elementary school students.

	Girls		Boys	
	Rural	Urban	Rural	Urban
BF%	23,513±4,63*	25,325±6,07*	18.118±5.15*	20,459±6,36*
BMI	19,229±3,00	20,403±4,28	19,141±3,20	19,947±3,71
PAQ score	63,35±10,09	68,82±9,83	70,82±11,21	69,44±14,23

P<0.001.

Table 2. The relationship between boys and girls PAQ score, BMI and BF% values in elementary school students.

	Rural-boys	Rural-girls	Urban-boys	Urban-girls
BF%	,616	,597	,013	,041
BMI	,821	,699	,017	,071
n	272	232	244	282

**Figure 1.** Rural boys and girls participated in team sports, such as football, volleyball, and basketball Every day.

BF% (Golan, 1998; Zarei, 2014). Another study found the reason for high body fat percentage to be due to the consumption of high fat content food (Birch, 2001).

Health and physical fitness improves quality of life (Seefeldt, 2002; Pate, 1990; Finn, 2002). This issue has been of great concern in recent years and it is a known fact that modern technology results in a sedentary lifestyle

(King, 2000; Seefeldt, 2002; Finn, 2002; Clark and Ferguson, 2002). It has been reported in recent studies that environmental factors, lifestyles, diet, family structure, cultural differences, and several other factors are closely related to physical fitness and physical activity. There are also contrary opinions about environmental and cultural factors (Rowlands, 2008; Finn, 2002). While some

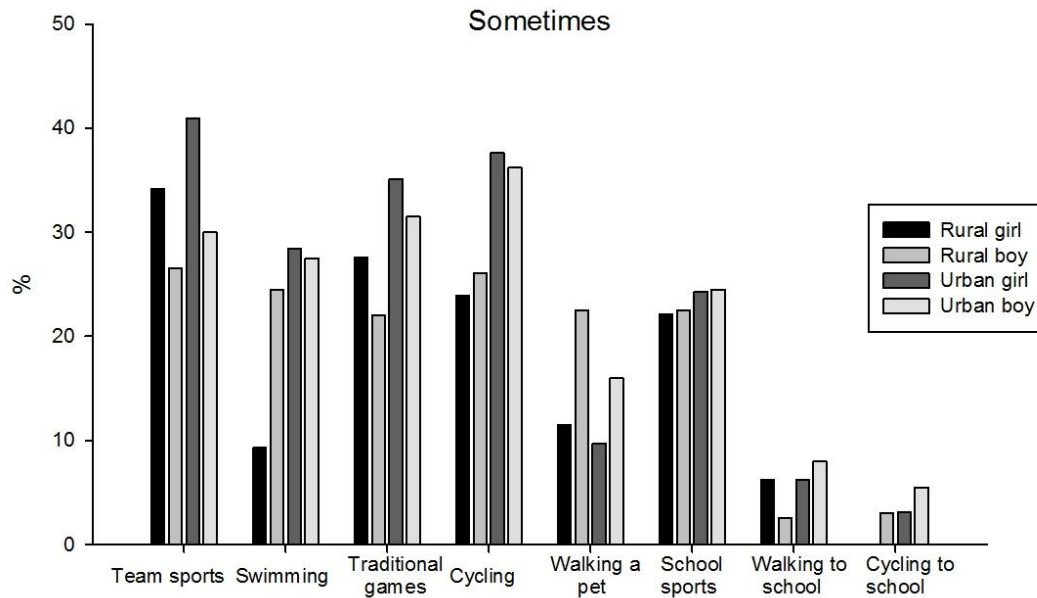


Figure 2. Rural boys and girls participated in team sports, such as football, volleyball, and basketball sometimes.

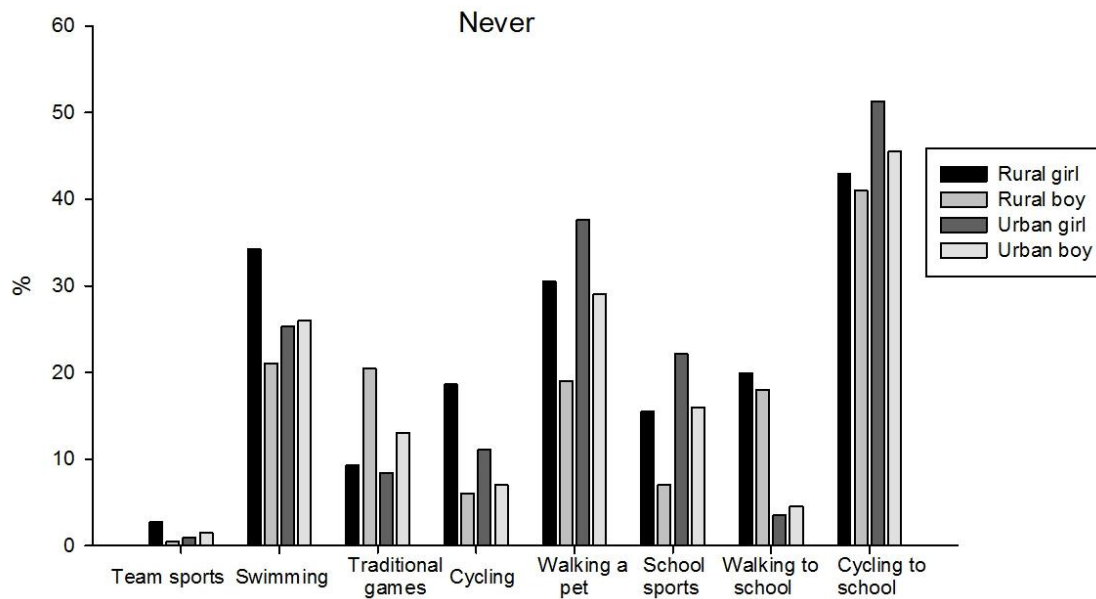


Figure 3. Rural boys and girls never participated in team sports, such as football, volleyball, and basketball.

researchers report that children living in rural areas are more inactive, it is also emphasized in other reports that urban lifestyle leads to inactivity (King, 2000; Pate, 1990). Reyes et al. indicate that changes in lifestyle will influence the physical fitness level of the people who live in regional areas (Reyes, 2003; Dos Santos, 2014). In many studies, it has been emphasized that a high rate of

BF% will influence physical activity levels in a negative way (Docherty, 1991; Rowland, 1991; Duncan, 2007). Tudor-Locke et al. found walking to school is among the most important daily physical activities (McDonald, 2008; Cooper et al, 2008). In one of the research, children walk to school to be more active than others (Tudor-Locke, 2001). Also within the frame of this study the findings

showed that the children who walk to school are more active.

This study indicates that boys living in rural participate in school sports more often than urban ones. Another study also showed that rural children participate more in school sports than urban children (Guinhouya, 2009). These results showed the lack of opportunities for external school sports activities for rural students. When the results of the current study were reviewed, it is thought that the rates of pet walking to be relatively high for the rural students. It is believed that this is influenced by rural lifestyle and environmental factors. Neither urban, nor rural children indicated a preference for bicycling to school. The physical conditions of life in rural and urban areas are thought to influence this, especially since there are no separate bicycle paths and the roads are not safe. Studies executed by McDonald and Cooper indicate that when bicycle and pedestrian roads are secure and children feel safe, they are more likely to walk or bike to school (McDonald, 2008; Cooper et al, 2008). In our country swimming was not preferred in either urban or rural areas in our investigation. The lack of sufficient facilities may influence these results. When the rates of playing of traditional games were reviewed, it was found that girls mostly played them. It can also be stated that the rural children preferred these activities more.

A study performed by Bounova et al. (2010) examined the physical activity levels of adolescents living in rural and semi-urban areas. They stated that both rural and suburban children play games, but the children who live in rural areas prefer this more. The existence of secure playing areas and good physical environmental conditions may influence this (Bounova et al, 2010). Therefore, the physical convenience levels of children are thought to differ as well. The environmental and living conditions of elementary school students may differ from country to country, or even from region to region within a country.

In our country, the physical activity opportunities may change according to the region. That urban children were found to be less active than their rural counterparts is a significant indicator of this disparity. Elementary school students more often absent from school due to weather conditions and lack of physical conditions in the villages. The state that the physical activities are measured is less. Emphasizing the significance of physical activity is the main purpose of this study. This is particularly important in urban areas where there are no sufficient areas and equipment for play, nor are there any plans to build sufficient play, sport areas and swimming pools. The lack of such areas combined with the technological developments that reduce physical activity are the factors that necessitate this subject to be taken into consideration.

As a result of this study, the elementary school children aged 11-13 may not be able to participate in sufficient physical activity in our country. However urban students were fitter than rural ones. Swimming was not preferred

in either urban or rural areas. Team sports are most popular physical activity among this aged group.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

The impact of coenzyme Q10 supplement on the indicators of muscle damage in young male skiing athletes

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This study was conducted in order to know the impact of coenzyme Q₁₀ (CoQ₁₀) supplement on the muscle damage and total oxidant (TOS) enzyme levels of young skiing athletes during exercise. 15 male athletes were used for two weeks in the study. The athletes were divided into three groups: the control group and two subject groups taking 100 mg and 200 mg CoQ₁₀. A maximal exercise program with 70-80% overload was applied to the groups for two hours every day for two weeks. Before (B.T.) and after (A.T.) the training, blood samples were taken from athletes in order to determine CoQ₁₀, TOS and aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP), glutamyl transpeptidase (GGT), lactate dehydrogenase (LDH), Creatine kinase (CK) enzyme activities. HPLC kit was used to determine CoQ₁₀ levels and TOS kit was used to determine TOS levels. When the pre-exercise and post-exercise CoQ₁₀ levels were compared, it was seen that CoQ₁₀ values of subject groups increased ($p < 0.05$; $p < 0.01$) while the control group did not show a significant difference. Also, a decrease was seen in TOS values of subject groups ($p < 0.01$), whereas the control group showed an increase ($p < 0.01$). In addition, significant increases ($P < 0.01$) were obtained in the levels of AST, ALT, LDH and CK of the control group compared to those of the subject groups. Comparing CoQ₁₀ and TOS levels by days during 2 weeks, it was found that TOS levels of control group increased; no change occurred at CoQ₁₀ and; TOS levels of experimental groups decreased and significant increases were found in CoQ₁₀ groups. In conclusion, CoQ₁₀ usage may have impact on lower TOS values and liver, muscle enzyme activities of experimental group compared to control group.

Key words: Training, muscle damage, CoQ₁₀, total oxidant, enzyme activities.

INTRODUCTION

It is known that muscle damage occurs with various levels in muscle tissue during exercise. Muscle damage leads to decrease on muscle strength, speed and flexibility according to the type and quality of exercise. On the other hand, it is assumed that it leads to muscle

exhaustion, loss of function and especially the extension of adaptation process (Eston et al., 2003). Low-intensity exercise stimulates expression of antioxidant enzymes and high-intensity exercise may lead to oxidative stress and cell damage and this situation may require

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antioxidant supplement (Gomez-Cabrer et al., 2008). In addition, reactive oxygen types are generated continuously during aerobic metabolism and removed by various biologic antioxidants. Antioxidant protection may not be 100% effective all the time. If peroxidants increase or antioxidants fail, oxidative stress occurs and it leads to molecular and tissue damage (Revanet al., 2013).

Another indicator used to assess muscle damage is the increase in serum levels of muscle enzymes such as AST, ALT, ALP, GGT, LDH and CK. High enzyme levels are the indicator of the fatigue, damage and increase that occur in concentrations of big tissue structures such as liver and skeletal muscle. Different studies indicated that these enzymes increase after exercise-related muscle damage and 72 h after the exercise, enzyme levels turn back pre-exercise basal levels (Diaz et al., 2010; Schneider et al., 1995). It is known that oxidant generation increases during exercise. Being one of the most remarkable compounds in this issue, CoQ₁₀ takes place in ubiquinone family that can be synthesized in humans and all animals. Being a lipophilic antioxidant and playing a role in cell signal transduction and gene expression, CoQ₁₀ is a significant carrier that takes part in ATP synthesis and electron transfer on mitochondrial respiratory chain (Kubo et al., 2008; Crane, 2001; Turunen et al., 2004). Recently, CoQ₁₀ has gained considerable attention as a dietary supplement capable of influencing cellular bioenergetics and counteracting some of the damage caused by free radicals (Juel, 2006; Rosenfeldt et al., 2003; Zhou et al., 2005). Many studies have demonstrated that exercise training results in an increased production of free radicals and other forms of reactive oxygen species that contributes decreased physical performance, muscular fatigue, and muscle damage (Kon, 2007; Reid, 2008).

It is assumed that CoQ₁₀ transfers electron to cellular molecules and helps to generate energy from ATP by means of contributing to mitochondria to generate energy due to its first degree correlation with cellular energy flow and energy generation. It is also asserted that regular training changes morphology of muscle structure and improves performance and thus decreases muscle fatigue and damage (Cooper et al., 2002). This study investigated the impact of coenzyme Q₁₀ supplement on muscle damage, liver enzyme activities and total oxidant (TOS) levels during training.

MATERIALS AND METHODS

Experimental design

Of the 30 volunteer male skiing athletes who do exercise regularly and do not take any vitamin supplement tablet, 15 were randomly selected for the study. There were not to change their nutritional habits during the study. The subjects were asked to stop taking any medicine minimum one week before the test day, stop consuming alcohol and foods containing caffeine 24 h before the exercise.

Thesis Protocol was accepted by Kafkas University Faculty of Medicine Ethics Committee with approval dated 09.06.2009 and numbered B.30.2.KAÜ.0.20.71.00. The athletes were asked to sign the informed consent form. Conducted in line with the relevant directive specified in Helsinki Declaration, the study obtained approval from the Local Ethics Committee and ensured voluntary participation by providing study subjects with information on the objective of the study before the measurements. The athletes were categorized into three groups as control group, experimental groups using 100 mg and 200 mg CoQ₁₀.

Training program and the appliance of CoQ₁₀

The study includes 14-day supplement of CoQ₁₀ following one-week control period. The athletes took 100 and 200 mg CoQ₁₀ 30 min after breakfast between Day 1 and Day 14. The athletes were asked to maintain their usual nutritional habits and daily activities. During the study, 70-80% maximal loading training program was applied on each of the three groups. This program was applied for 2 h once in a day during 2 weeks. The training program was prepared systematically and specifically to each group so as to obtain the most reliable effect physiologically. A program including the basic, general and specific endurance exercises was applied to the athletes involved in the exercise program for 14 days.

Training program

Day 1: 30 min running (Basic Endurance (TD) + Power Training 3x30 min.
 Day 2: 12km walking (General Endurance (GD) / Specific Endurance (ÖD) + Medicine ball warm-up
 Day 3: 10 min warm-up+ Traditional technique with cross-skating + 20 min. training without baton
 Day 4: Baton walking + Running (TD/GD)
 Day 5: Traditional technique + 30 min. running without baton
 Day 6: Skating techniques (TD) +30 min. running without baton
 Day 7: 20 min. running + Static power training
 Day 8: Traditional technique (TD) + 6x2 km interval (ÖD)
 Day 9: 20 min. running (TD) + 40 min. Medicine ball warm-up + 3x20 min. power training
 Day 10: Traditional technique (TD) + 20 min. training without baton + 10 min. running
 Day 11: Traditional technique (TD) + 6x2 km interval (ÖD)
 Day 12: Traditional technique (TD) + 20 min. warm-up+ 1 hour GD
 Day 13: Traditional technique with cross-skating (TD) + 10 min. warm-up+ 10km training without baton (GD) +15 min. running
 Day 14: Traditional technique + 20 min warm-up + 1 hour GD

Taking blood samples

Blood samples were taken from athletes before training once and after training during two weeks to anticoagulant lithium heparin tubes. The blood samples were centrifuged at 4000 rpm in cooled centrifuge for 15 min and the supernatant was taken into covered polypropylene tubes and stored in -80 °C deep freeze to determine CoQ₁₀ and TOS levels; in -20 °C deep freeze to determine AST, ALT, ALP, GGT, LDH and CK analyses.

Biochemical analysis

CoQ₁₀ assay

The protocol for determining CoQ₁₀ in plasma was modified from

Table 1. Mean \pm SD characteristics of subjects in different groups.

Specification group	Age (Yr)	Weight (kg)	Weight (cm)
Control group	21.60 \pm 0.51	64.20 \pm 3,14	1.76 \pm 0.02
100 mg CoQ ₁₀ group	21.80 \pm 0.73	66.80 \pm 2.97	1.76 \pm 0.01
200 mg CoQ ₁₀ group	21.60 \pm 0.51	63.80 \pm 2.31	1.75 \pm 0.01

the Mosca et al. protocol by using the reverse-phase-HPLC C-18 (Spherisorb ODS-2, 5 μ m, 4.6x250 mm column; Water company). A mixture of 200 μ l of plasma and 20 μ l of internal standard CoQ₉ (0.5 μ g/ml) was denatured by adding 3.0 ml of fresh ethanol/n-hexane (2:5, v:v). After vortexing for 2 min and centrifuging at 300 g for 10 min at 4°C, 1.30 ml of organic n-hexane was separated for evaporation under nitrogen gas and reconstituted with 100 μ l of ethanol/n-hexane (6:4, v:v). Only 20 μ l was injected into a 20 μ l sample loop. Interestingly, CoQ₁₀ and internal CoQ₉ control peaks were eluted, and showed a mobile phase (methanol hexane (6:4,v:v) with a running flow at 1.0 ml/min by using a Conta Meric LDL analyzer with UV detector (λ = 275 nm). The CoQ₁₀ concentration in plasma was calculated by comparing with the high peak of standard CoQ₁₀ (0-20 μ g/ml).

TOS assay

Preparing working standard solution

SSSS is diluted 40,000 times with deionised water. A liquid of 50 microliter SSSS is added to 10 ml deionised water and vortexed (The first step dilution). A liquid of 50 microliter of the prepared solution is added to 10 ml deionised water and vortexed (The second step dilution). The final concentration of the working standard is 20 micromolar H₂O₂.

Preparing working solution daily

Place 500 microliter Reagent 1 in cell and add 75 microliter to the prepared standard (or sample). Read the initial absorbance at 530 nm for the first absorbance point. Add 25 microliter Reagent 2 to the cell and incubate 10 min at room temperature or 5 min at 37°C. Read the absorbance a second time at 530 nm.

AST, ALT, ALP, GGT, LDH and CK blood samples were analyzed in Medicine Faculty Laboratory of Kafkas University.

Statistical analysis

SPSS 17.0 program was used to conduct statistical analysis of the data. The data were defined as the mean \pm standard deviation. Matched t-test was used to determine any difference between data before and after substance. Variance was homogenous for use of standard ANOVA methodology. After statistical significance was established by ANOVA, individual comparisons were made using Tukey's multiple comparison test. Lower P value than 0.05 was regarded to be significant.

RESULTS

The mean values of control group's age (21.60 \pm 0.51), weight (64.20 \pm 3,14) and height (1.76 \pm 0.02); group 1's age (Year) (21.80 \pm 0.73), weight (kg) (66.80 \pm 2.97) and

height (cm) (1.76 \pm 0.01); group 2's age (Year) (21.60 \pm 0.51), weight (kg) (63.80 \pm 2.31) and height (cm) (1.75 \pm 0.01) of participants were presented respectively (Table 1).

When the pre-exercise and post-exercise CoQ₁₀ levels were compared, it was seen that CoQ₁₀ values of subject groups increased ($p < 0.05$; $p < 0.01$) while the control group did not show a significant difference. Also, a decrease was seen in TOS values of subject groups ($p < 0.01$) whereas the control group showed an increase ($p < 0.01$). In addition, significant increases ($P < 0.01$) were obtained in the levels of AST, ALT, LDH and CK of the control group compared to those of the subject groups. However $p < 0.01$ decrease was found in LDH and CK levels of experimental groups and $p < 0.05$ decrease was found in AST, ALT values with CoQ₁₀ usage. On the other hand, no significant difference of ALP and GGT levels was found in control and 100 mg CoQ₁₀ groups and $p < 0.05$ decrease was found in 200 mg CoQ₁₀ group (Table 2).

During the two-week training, groups were compared. Accordingly, no increase was found in CoQ₁₀ levels of control group and an increase was found in experimental groups. Comparing CoQ₁₀ levels of experimental groups with the first day of control group, no difference was found in levels of 100 mg CoQ₁₀ group until 3rd day and significant increases were observed from 6th to 14th day. In addition, CoQ₁₀ levels of 200 mg CoQ₁₀ group started to increase clearly on 1st day ($p < 0.01$) (Figure 1)

Comparing TOS levels of experimental and control groups during two-week training, no significant difference was found between groups from 1st to 3rd day. However, significant increases were found in TOS levels of control groups from 6th to 14th day ($p < 0.01$). On the other hand, $p < 0.05$ decrease was found in 100 and 200 mg CoQ₁₀ groups from 6th day (Figure 2).

DISCUSSION AND CONCLUSION

This study was conducted in order to research the impact of coenzyme Q₁₀ (CoQ₁₀) supplement on the muscle damage and total oxidant TOS enzyme levels of young skiing athletes during exercise. CoQ₁₀ supplementation leads to augment in plasma coenzyme Q concentrations, the extent of which depends upon the type of formulation, dosage, and also duration (Tauler et al., 2008). The CoQ₁₀ supplement in capsule form was provided in this

Table 2. The mean and standard deviation (\pm SD) values of liver enzyme activity levels of groups before and after training.

Groups	Control group		100 mg CoQ ₁₀ group		200 mg CoQ ₁₀ group	
	B.T.	A.T.	B.T.	A.T.	B.T.	A.T.
CoQ ₁₀ (μ mol/L)	1,42 \pm 0,17	1,61 \pm 0,32	1,43 \pm 0,18	3,2 \pm 0,36*	1,44 \pm 0,19	4,8 \pm 0,23**
TOS (nmol)	0,16 \pm 0,75	0,63 \pm 0,20**	0,16 \pm 0,75	0,18 \pm 0,08**	0,16 \pm 0,75	0,11 \pm 0,04**
LDH (IU/L)	157,0 \pm 10,3	442,6 \pm 32,4**	154,0 \pm 17,8	271,4 \pm 11,2**	155,0 \pm 9,33	240,4 \pm 9,23**
CK (IU/L)	12,94 \pm 5,78	32,4 \pm 14,50**	13,75 \pm 6,15	11,28 \pm 5,04**	12,96 \pm 5,79	9,23 \pm 4,13**
AST (U/L)	33,4 \pm 3,20	36,2 \pm 3,83**	33,4 \pm 3,20	32,0 \pm 2,73*	33,4 \pm 3,20	31,80 \pm 3,11*
ALT (U/L)	25,8 \pm 6,09	28,0 \pm 5,87**	24,8 \pm 4,43	23,8 \pm 3,16*	24,2 \pm 3,89	23,4 \pm 3,64*
ALP (U/L)	28,6 \pm 12,81	28,8 \pm 12,90	28,08 \pm 12,55	28,91 \pm 12,93	27,79 \pm 12,42	18,47 \pm 8,26*
GGT (mg/Dl)	13,35 \pm 5,97	12,75 \pm 5,70	12,62 \pm 5,64	12,47 \pm 5,58	12,50 \pm 5,59	4,96 \pm 2,22*

** p<0.01, * p<0.05, Before training (B.T.), After Taining (A.T.), Coenzyme Q₁₀, (CoQ₁₀), Total Oxidant (TOS), Aspartat Eaminotransferase (AST), Alanine Aminotransferase (ALT), Alkaline Phosphatase (ALP), Glutamyl Transpeptidase (GGT), Lactate Dehydrogenase (LDH), Creatine Kinase (CK).

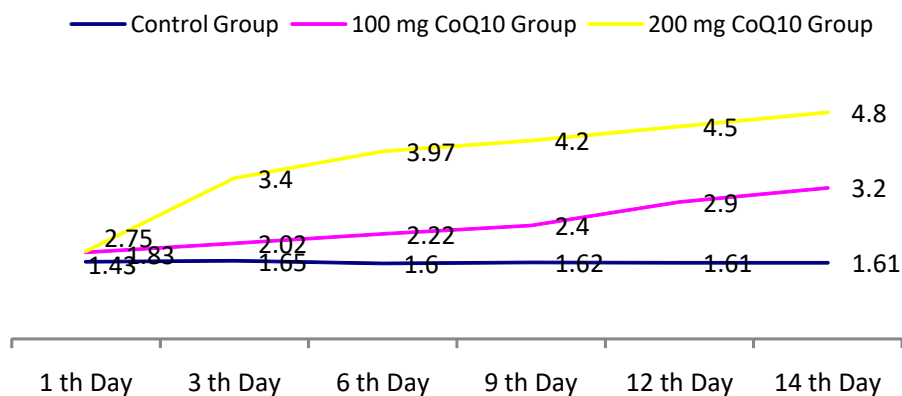


Figure 1. The change in CoQ₁₀ levels of control group, and 100 and 200 mg CoQ₁₀ groups during fourteen-day training.

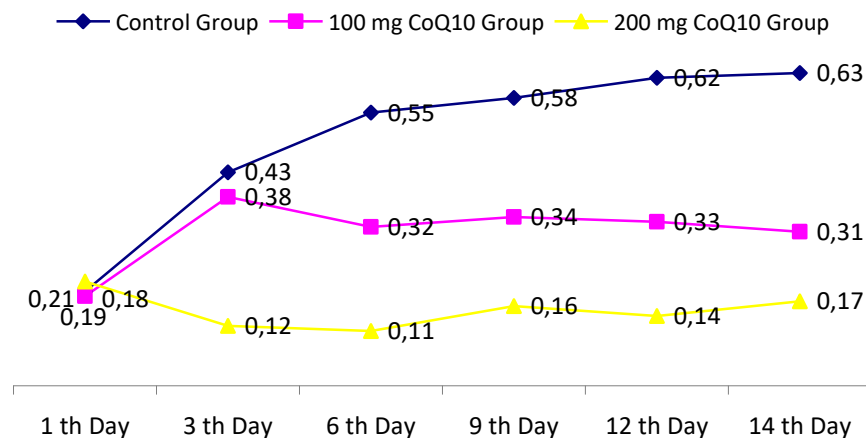


Figure 2. The change in TOS levels of control group, and 100 and 200 mg CoQ₁₀ groups during fourteen-day training.

study at a dosage of 5 mg/kg/day for 14 days. Previous reports have shown that the bioavailability of CoQ₁₀ can reach maximal concentration at 26.5 or 25.8 h following supplementation (Turunen et al., 2004). Thus, daily CoQ₁₀ supplementation could provide maximal concentration in human plasma during experiments. Therefore, CoQ₁₀ supplementation at 5 mg/kg/day for 14 days was noted to increase plasma CoQ₁₀ levels approximately 2-fold compared to before supplementation. Previous reports suggest that CoQ₁₀ in the ubiquinone form is essential for generating energy within mitochondria and providing antioxidant defense similar to the other fat-soluble antioxidants, such as vitamin E. This appears to be due to the scavenging of free radicals and prevention of oxidation of lipids and other molecules (Kagan et al., 1990).

The present study shows that comparing the levels of CoQ₁₀ and TOS before and after the training, it was found that CoQ₁₀ levels of experimental group and TOS levels of control group increased. In addition, decreases were found in TOS values of experimental groups with CoQ₁₀ usage. These findings support prior work, as discussed above, as well as work involving healthy subjects in which CoQ₁₀ supplementation at 300 mg daily, but not 100 mg daily, to reduce fatigue and enhance physical performance (Mizuno et al., 2008). Clearly, dosing is an important concern when considering CoQ₁₀ supplementation. Although, CoQ₁₀ is located within the inner mitochondrial membrane, is the cofactor of three mitochondrial enzymes (complex I, II and III), and plays an essential role in production of adenosine triphosphate (ATP) during exercise (Crane et al., 1993). The present study noted significant changes during two-week training; groups were compared. Accordingly, no increase was found in CoQ₁₀ levels of control group and an increase was found in experimental groups. Comparing CoQ₁₀ levels of experimental groups with the first day of control group, no difference was found in levels of 100 mg CoQ₁₀ group until 3rd day and significant increases started to be observed from 6th to 14th day. However, CoQ₁₀ levels of 200 mg CoQ₁₀ group started to increase clearly on 1st day. Comparing TOS levels of experimental and control groups, no significant difference was found between groups from 1st to 3rd day. However, significant increases were found in TOS levels of control groups from 6th to 14th day. On the other hand, decrease started to be found in 100 and 200 mg CoQ₁₀ groups from 6th day. CoQ₁₀ plays various critical roles in metabolism, serves as a redox electron transporter in the mitochondria related to the synthesis of ATP, acting as an essential antioxidant, influencing the stability of membranes. Reactive oxygen types are generated continuously during aerobic metabolism and removed by various biologic antioxidants. Antioxidant protection may not be 100% effective all the time. If prooxidants increase or antioxidants fail, oxidative stress occurs and it leads to

molecular and tissue damage (Kon et al., 2007; Revan et al., 2013). However, CoQ₁₀ interacts with oxygen-related radicals and singlet oxygen and prevents lipid peroxidation and any damage on biomolecules (Crane, 2001).

On the other hand, high enzyme levels are the indicator of the fatigue, damage and increase occur that in concentrations of big tissue structures such as liver and skeletal muscle. Changes in concentrations CK, AST, LDH, ALP, GGT and ALT were examined so as to assess the muscle damage (Hazar, 2004). However, CoQ₁₀ taking place in mitochondria of cells and leading to energy and ATP generation is used as a fundamental catalyzer in order to enable the organism to adopt abovementioned changes. Studies indicated that CoQ₁₀ taken before exercise reduces fatigue level and increases plasma CoQ₁₀ level (Bonetti et al., 2000; Ylikoski et al., 1997). These findings support the findings of the present research (Table 2). In another study (Niklowitz et al., 2007), it was found that 3 mg/kg oral CoQ₁₀ supplement decreases 8-OH-dG levels being an indicator of DNA damage. Also, in another study the use of CoQ₁₀ before exercise leads to a clear decrease in CPK, LDH, AST, ALP levels during the exercise (Mizuno et al., 2008; Shimomura et al., 1991; Revan et al., 2013). However, in another study CoQ₁₀ in serum or plasma may have been distributed to several tissues during intensive exercise. Shimomura et al. have suggested that CoQ₁₀ supplementation reduced increased creatine kinase (CK) and lactate dehydrogenase (LDH) in rat's subsequent downhill running (Kon et al., 2007; Shimomura et al., 1991). In this study, significant increases were found in AST, ALT, LDH and CK levels of control groups compared to those of experimental groups. However, decreases were found in LDH, CK, AST and ALT levels of experimental groups with CoQ₁₀ usage. On the other hand, no significant difference of ALP and GGT levels was found in control and 100 mg CoQ₁₀ groups and decrease was found in 200 mg CoQ₁₀ group.

Therefore, it is quite likely that CoQ₁₀ supplementation increases CoQ concentration in muscle cell membranes and reduces strenuous exercise-induced muscular injury by enhancing cell membrane stabilization. The use of oxygen and mitochondrial electron based on increasing metabolic rate increases electron leak from transport chain and thus many reactive oxygen types mainly hydroxyl radicals emerge (Eston et al., 2003; Cooper et al., 2002). It was found that to conduct training continuously and increasingly in steps not only causes a physiological dilatation and hypertrophy but also regular circulation and the use of CoQ₁₀ could turn enzyme activities which increase just after the training into normal levels. In addition, it can be said that physical exercise increases oxygen consumption and thus generation of reactive oxygen types leads to muscle fatigue and thus to oxidative damage. On the other hand, the use of CoQ₁₀

contributes to energy generation process in mitochondria, decreases muscle damage and TOS levels.

As a result, long-term and intense skiing trainings lead to the increase in CK, LDH, AST and ALT enzyme activities due to excessive muscle activity and oxidative damage occurs as a result; however, CoQ₁₀ which takes place in mitochondria of cells and leads to energy and ATP generation plays a fundamental catalyzer role in order to ensure adaptation to high physiologic activities in muscle tissues and thus decreases enzyme activities, being TOS and muscle-damage indicators.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Investigation of students' attitudes towards e-learning in terms of different variables—A case study in a technical and vocational high school for girls

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This study aims at determining the attitudes towards e-learning among the students of technical and vocational high school for girls and examining them in terms of certain variables. Singular and relational survey methods were used. The sample consisted of 119 students of technical and vocational high school for girls. Data were collected through a paper based survey consisting of two parts. In the first part of the survey, there are fifteen items about personal and demographic information of the students. In the second part, there is a scale examining the attitudes towards e-learning. Data were analyzed in SPSS-21 by means of percent, frequency, mean, mode, median, t-test and One Way ANOVA analysis. The results showed that there were not significant differences between the attitudes of students of technical and vocational high school for girls towards e-learning with respect to gender, experience in the use of computers, frequency of using internet and motivation style. One Way ANOVA Analysis indicated that way of learning, way of the studying and learning methods had significant impacts on the students' attitudes towards e-learning.

Key words: e-learning, attitude, students of technical and vocational high school for girls.

INTRODUCTION

With rapid development and widespread use of e-mail, social networks, electronic books, chat rooms, web conferences, interactive multimedia applications and internet technologies, internet came into use as educational environment (Yamamoto et al., 2010; Yapıcı and Akbayın, 2012). This new learning environment has been accompanied by such concepts as online learning, distance learning and e-learning. The concept of e-learning covers numerous processes and applications including computer-based learning, web-based learning, virtual classes and digital cooperation. Therefore, e-

learning is today accepted as an umbrella concept and refers to trainings based on electronic tools/media (Haznedar, 2012). When internet has become capable of serving people in all parts of daily life, its use in the field of education has also become more probable. Currently, internet is on the point of becoming an indispensable element for educators. In general terms, widespread use of computers and internet led to recognition of technology in education (Yalman et al., 2013). Teaching materials enriched with the use of technology as a teaching tool have become increasingly more widespread and have

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been accepted as a part of education and even a reason of preference (Keşan and Kaya, 2007; Yalman et al., 2013). One of the most important factors affecting effective and efficient use of technology in education is the attitudes of teachers and students (Köse and Gezer, 2006; Liaw et al., 2007). In general, attitude is a prejudiced reaction that an individual displays towards a certain object. Attitude can be developed positively by organising appropriate learning environments in individuals (Yapıcı and Akbayın, 2012).

With the advancement of technology, it has become possible for everybody to learn anywhere. Reaching individuals at long distances with advanced technologies and solving education requirements practically have made the process of distance education popular throughout the world (Yamamoto et al., 2011). Owing to increasing distance education demands and technological advancements, e-learning has gained ever-increasing prominence. According to Gülbahar (2009), e-learning is to carry out teaching activities in the electronic environments by ensuring access to information time- and space-independently and establishing interaction with multimedia applications via information and communication technologies and such local and wide area networks as internet and intranet.

Zhu (2009) emphasizes that the learner and the teacher are two important actors in e-learning environments. Understanding student characteristics is especially crucial when e-learning is implemented. Previous research focus on as having an impact of students' adoption and use of computers (Kennedy et al., 2008; Zeng, 2011; Mac Callum, 2014) and students' attitudes to computer use and learning with a computer (Bouhnik and Marcus, 2006; Liaw, 2008; Yanık, 2010; Buabeng-Andoh, 2012). According to Zhu (2009), research has found that based on certain characteristics such as age, background, computing ability, computing attitude and motivation all have an impact on the likeness of students using a computer to support their studies. Therefore this study will look at some of these variables and characteristics in terms of e-learning attitudes.

As to the student variables, we focus on examining students' characteristics related to gender, motivation type, way of the learning, way of studying, learning methods, frequency of using internet and experience in using computer. In literature, there is a lack of studies with design of students' individual differences such as motivation type, way of the learning, way of studying. This study responds to this gap in the literature.

THEORETICAL BACKGROUND AND RESEARCH QUESTIONS

According to Moore, Dickson-Deane and Galyen (2011), the origin of the term of e-learning is not certain although it is suggested that it most likely originated during 1980s

within the similar time frame of another delivery mode online learning. E-learning not only covers content and instructional methods delivered via CD-ROM, the Internet or an Intranet but also includes audio- and videotape, satellite broadcast and interactive TV (Moore et al., 2011; Benson et al., 2002; Clark, 2002). When literature is examined, e-learning can be defined as a learning and teaching method where education environments can be established without time and space limits and students learn at their own paces simultaneously or non-simultaneously by using information and communication technologies (ICTs) (Haznedar, 2012; Horton, 2001; Gülbahar, 2009; 2001; Khan, 2005; Urdan and Weggen, 2000). Advances in information technology and new developments in learning science provide opportunities to create well-designed, learner-centred, engaging, interactive, affordable, efficient, easily accessible, flexible, meaningful, distributed and facilitated e-learning environments (Khan, 2001). Hall (2001) notes that e-learning is the fastest-growing and most promising market in the education industry.

Panda and Mishra (2007) point out that a large amount of literature exists on e-learning covering technical features, pedagogical processes, advantages, and problems associated with designing web-based courses. Some of the studies related to faculty and students' attitude towards learning, and barriers to participate in it (Keller and Cernerud, 2002; Drennam et al., 2005; Graff, 2003; Jamlan, 2004; Nawaz and Kundi, 2011a). Then, many published articles focused on analyses of the identifying and analyzing the factors which aimed to predict or explain why faculty adopt (or do not adopt) to different forms of web-based Technologies (Huang and Hsia, 2009; Alebaikan and Troudi, 2010; Panda and Mishra, 2007; Yu et al., 2010). Some researchers are interested in formulating an e-learning model (Shutimarrungson et al., 2014; Nawaz and Kundi, 2010; Nawaz, 2012; Nawaz et al., 2011b). Labach (2011) emphasised that a systematic search of the literature identified at least 39 articles published between 2006 and 2010 with a focus on the impact of web-based learning technologies on academic faculty in higher education settings.

It is seen that e-learning is commonly addressed in the literature. In the studies related to e-learning, such topics as factors affecting student satisfaction in e-learning (Kantoğlu et al., 2013; Gülbahar, 2012; Palmer and Holt, 2009; Işık, 2008; Ilgaz, 2008; Shin, 2002), factors affecting success, preparedness in e-learning (Gülbahar, 2012; Shraim and Khlaif, 2010), success (Güngör and Aşkar, 2004), family support (Chu and Chu, 2010), seniority (Ağır, 2007), intrinsic and extrinsic motives (Yoo et al., 2012) and continuation in e-learning (Levy, 2007) were examined. Besides, researches on attitudes towards e-learning (Yıldız, 2011; Haznedar, 2012; Çiftçi et al., 2010; Richardson, 2007; Özgür and Tosun, 2010; Dikbaş, 2006; Ağır, 2007) were carried out. These studies mainly

determined the levels of attitudes towards e-learning and examined them in terms of gender and class level. According to Haznedar (2012), e-learning and attitude were not examined in terms of different personal characteristics in any of these studies. In the present study, the attitude towards e-learning was examined by different personal characteristics of the students such as gender, department, class level, experience in using computer, frequency of using internet, learning method, way of studying and motivation type. There are only a limited number of studies examining the attitude levels in terms of demographical attributes (Haznedar, 2012; Tekinarslan, 2008). Therefore, it is thought that the present study will contribute to meeting this deficiency in the literature. In this regard, the following research questions were asked:

1. What are the distributions of students of vocational and technical high school for girls in terms of gender, experience in using computer, frequency of using internet, learning method, way of studying, way of learning and motivation type?
2. What are the attitudes towards e-learning among the students of vocational and technical high school for girls?
3. Do the attitudes towards e-learning vary significantly among the students of Vocational and Technical High School for Nurses by: (a) gender; (b) Motivation type; (c) way of the learning; (d) way of studying; (e) learning methods; (f) frequency of using internet; (g) experience in using computer ?

METHOD

Research model

In this study, singular and relational survey methods were used. Singular survey method was used to determine the students' attitudes towards e-learning. Singular survey method focuses the research on a single variable and examines its change in a moment or in a period (Karasar, 2007). The other was used to indicate the relationship between some variables and attitudes towards e-learning. Relational survey method is generally used to determine interactions between several variables (Şimşek, 2010).

Data collection tool

Data collection tool consists of two parts in the present study. While the first part includes 15 items on demographic information that will reveal students' personal characteristics and status of using information and communication technologies while the second part is the scale that Haznedar developed by adapting certain items of the attitude scale towards e-learning developed by Wilkinson et al. (2010) as an up-to-date scale which is more suitable for the conditions of our country.

The second part, which is the Scale of Attitude towards E-learning, consists of 20 items. 5-point likert type ranking, commonly used by the researchers, was preferred for the answers to be given to the items. Accordingly, the answers might be "Strongly Disagree (1)", "Disagree (2)", "Undecided (3)", "Agree (4)" and Strongly Agree (5)".

Scale of attitude towards e-learning has a single dimension. The

reliability coefficient of this scale is $\alpha = 0,935$. Since the scale is composed of 20 items, the highest score to be obtained from the scale is 100 while the lowest score is 20 (Haznedar, 2012).

Participants

Research was conducted with 119 students studying in the Vocational and Technical High School for Girls. 83 of these students (69.7%) were female while 36 (30.3 %) of them were male.

FINDINGS

Measures of central tendency and variability

Measures of central tendency and variability of the scores of e-learning attitudes are given in Table 1. The lowest score obtained from the "Scale of Attitudes towards E-learning" was 22 while the highest score was 100. The mean of the scores is 70.6. This result shows that general attitudes of the students studying at the Vocational and Technical High School for Girls towards e-learning correspond to 3.53 in the 5-point likert type scale; in other words, they "agree".

Analysis of the Data

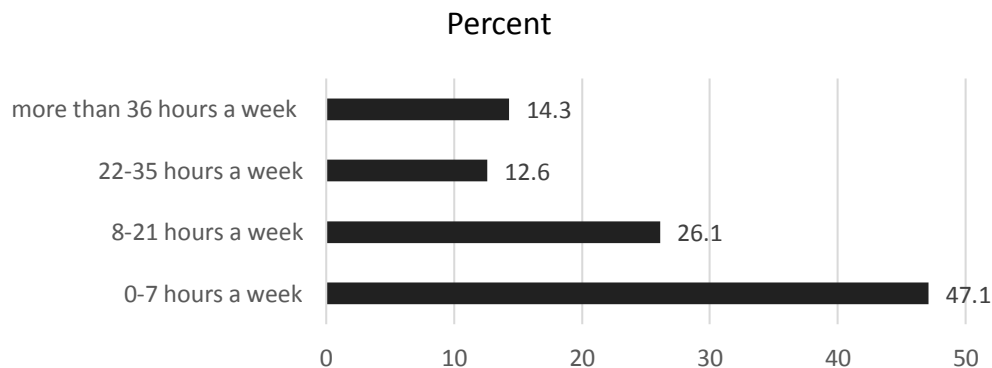
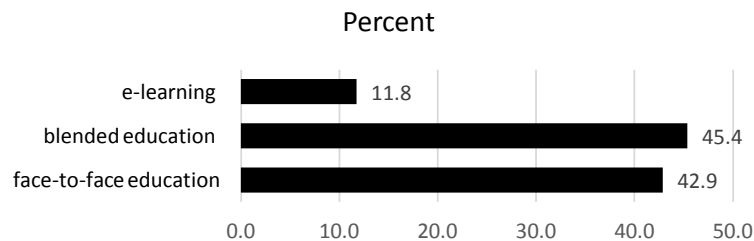
Numeric data obtained through data collection tools were coded and transferred into computer through SPSS 21.0 package program and analyses based on sub-problems were made. In the analysis of the demographic data, such descriptive statistics as frequency, percentage distribution and cross tabling were used. Kolmogorov-Smirnov test was conducted in order to determine the tests to be applied with the aim of examining the students' attitudes towards e-learning in terms of various variables and suitability of the scores to the normality was tested. p value calculated in Kolmogorov-Smirnov test of normality at the end of the test made for the e-learning attitude scores was found to be higher than .05 and it was determined that scores showed normal distribution. Since scores showed excessive deviation from normal distribution, t-test and variance analysis, which are parametric tests, were carried out to examine the impact of diverse variables on the attitudes towards e-learning. Independent Samples t-test was employed to compare two groups while One Way Anova was used to compare more than two groups.

Descriptive Statistics Related to Demographic Attributes

Within the scope of the demographic attributes of the participating students, the experience of computer use, frequency of using the Internet, learning method, way of studying, way of learning, and type of motivation were examined. The percentage distributions of the demographic

Table 1. Descriptive statistics related to the scale of attitudes towards e-learning.

Units	Value
Mean	70.6
Median	72
Mod	62
Standard Deviation	1.48
Coefficient of Skewness (CS) and CS Standard Error	-.468 .222
Coefficient of Kurtosis (CK) and CK Standard Error	.404 .440
Range	78
Minimum	22
Maximum	100

**Figure 1.** Distribution of the participants' frequencies of using the Internet.**Figure 2.** Distribution of the participants by the learning method.

attributes of the participating students were presented in graphs.

According to the data concerning the students' frequency of using the Internet, 47.1% of them ($N = 56$) use the Internet for 0-7 h a week, 26.1% of them ($N = 31$) use the Internet for 8-21 h a week, 12.6% of them ($N = 15$) use the Internet for 22-35 h a week, and 14.3% of them ($N = 17$) use the Internet for more than 36 h a week (Figure 1).

As for the learning methods, 42.9% ($N = 51$) of the

students prefer face-to-face education, 45.4% ($N = 54$) prefer blended education (face-to-face + e-learning), while 11.8% ($N = 14$) prefer e-learning (Figure 2).

In terms of way of studying, 62.2% ($N = 74$) of the students prefer studying individually while 37.8% ($N = 45$) of them prefer studying in groups (Figure 3). As for the way of learning, 52.9% ($N = 63$) stated that they better learn with visual aids while 31.9% ($N = 38$) of them found auditory aids more useful and 15.1% ($N = 18$) of them find tactual aids more useful (Figure 4). As to the

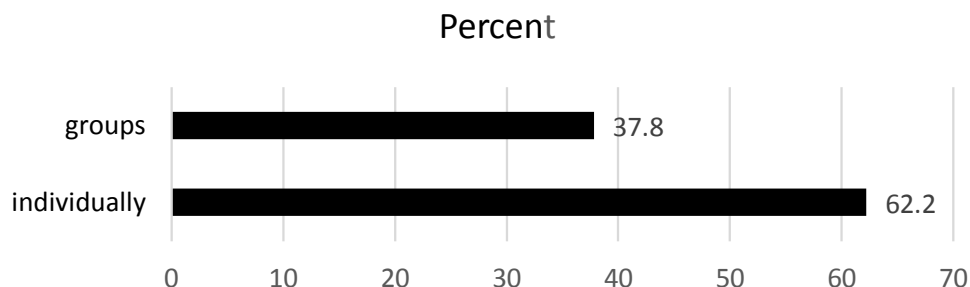


Figure 3. Distribution of the participants by the way of studying.

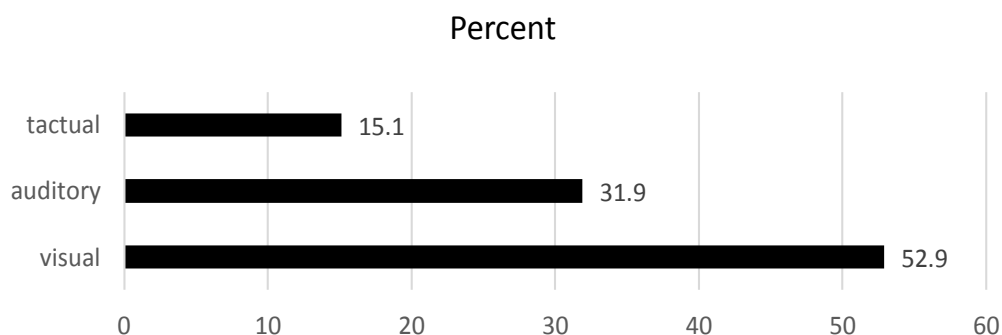


Figure 4. Distribution of the participants by the way of learning.

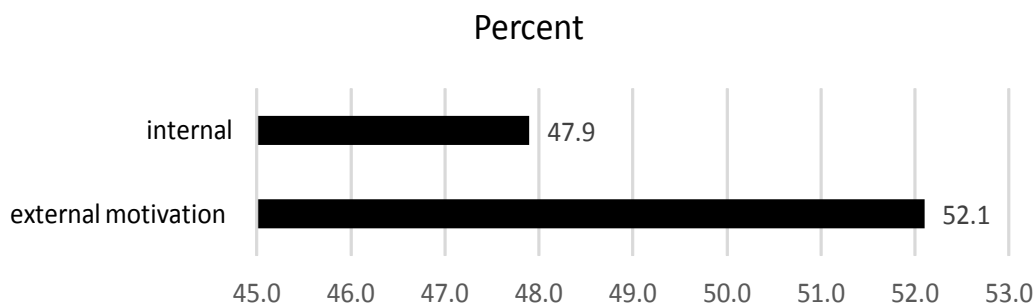


Figure 5. Distribution of the participants by the type of motivation.

types of motivation, 52.1% ($N = 62$) have external motivation while 47.9% ($N = 57$) of them have internal motivation (Figure 5).

Effects of certain variables on attitudes towards e-learning

Gender

Independent samples t-test was carried out to determine whether attitudes towards e-learning among the students

of vocational and technical high school for girls varied by gender. Prior to the analysis, the assumption of equity of variances was tested. At the end of Levene Test carried out ($p=.356$, $p>.05$), it was determined that variances distributed homogeneously. The results obtained are given in Table 2.

When the results of the analysis related to the variable of gender are examined, it is seen that mean scores of female students in relation to e-learning ($x=70.97$) are higher than those of the male students ($x=70.42$). However, difference between the mean scores was not found to be statistically significant ($t(117)=.170$, $p>0.05$,

Table 2. Effect of gender on attitudes towards e-learning.

Gender	N	\bar{x}	Sd	t	df	p
Female	36	70.9722	18.39485	.170*	117	.866
Male	83	70.4217	15.25964			

* Effect size was calculated as 0.16

Table 3. Effect of motivation type on attitudes towards e-learning.

Motivation type	N	\bar{x}	Sd	t	df	p
Extrinsic Motivator	62	73.3387	15.74171	1.955*	117	.053
Intrinsic Motivator	57	67.5965	16.28415			

* Effect size was calculated as 0.18

Table 4. Effect of way of learning on attitudes towards e-learning.

Source of variance	Sum of squares	df	Mean square	F	p	Significant difference
Between Groups	5390.793	2	2695.397	12.235**	.000	*1-2; *2-3
Within Groups	25554.030	116	220.293			
Total	30944.824	118				

*1= Visual, 2 = Auditory, 3 = Tactual/Kinaesthetic. ** Effect size was calculated as 0.42.

$r = 0.16$). In other words, Independent Samples t-test showed that independent variable of gender did not significantly affect attitudes towards e-learning. As a consequence, it was accepted that mean scores of the groups did not differ by the variable of gender.

Motivation type

Independent Samples t-test was carried out to determine whether attitudes towards e-learning among the students of Vocational and Technical High School for Girls varied by motivation type. Prior to the analysis, the assumption of equity of variances was tested. At the end of Levene Test carried out ($p = .741$, $p > .05$), it was determined that variances were distributed homogeneously. The results obtained are given in Table 3.

Mean scores of the students with extrinsic motivators ($\bar{x} = 73.3$) are higher than those of the students with intrinsic motivators ($\bar{x} = 67.59$). However, this difference is not statistically ($t(117) = 1.955$, $p > 0.05$, $r = 0.18$). This finding may imply that attitudes of the students studying in the Vocational and Technical High School for Girls did not differ statistically significantly by the variable of motivation type. As a conclusion, it was accepted that mean scores of the groups did not vary by motivation type.

Way of learning

One Way Anova was carried out to determine the

differences based on the way of learning and results are presented in Table 4. When these results are examined, it is seen that attitudes of students studying in the Vocational and Technical High School for Girls did not differ significantly by way of learning ($F(2.116) = 12.235$, $p = 0.00$).

Mean scores of the participants preferring visual learning, auditory learning and tactual/kinaesthetic learning in relation to their attitudes towards e-learning were found to be $\bar{x} = 74.86$, $\bar{x} = 60.79$ and $\bar{x} = 76.33$ respectively. It is seen that students preferring tactual/kinaesthetic learning as the way of learning have the highest mean scores. This finding may imply that there are significant differences between ways of learning and their attitudes towards e-learning. Post Hoc test was carried out to detect between which groups this difference existed. Accordingly, it was understood that there were significant differences between 1 (visual) and 2 (auditory) and 2 (auditory) and 3 (tactual/kinaesthetic) (Table 4).

As a result, One Way Anova determined that way of learning had significant effect on the attitudes towards e-learning. In other words, it was accepted that mean scores of the groups differed by the way of learning.

Way of studying

Independent Samples t-test was employed to determine whether way of studying affects attitudes towards e-learning. Prior to the analysis, the assumption of equity of

Table 5. Effect of way of studying on attitudes towards e-learning.

Way of studying	N	\bar{x}	Sd	t	df	p
Individual	74	68.3649	18.10515	-2.149*	116.489	.034
Group	45	74.2444	11.72440			

* Effect size was calculated as 0.22.

Table 6. Effect of learning method on attitudes towards e-learning.

Source of variance	Sum of squares	df	Mean square	F	p	Significant difference
Between Groups	6095.768	2	3047.884	14.228**	.000	*1-2; *1-3
Within Groups	24849.056	116	214.216			
Total	30944.824	118				

*1=Face-to-face education, 2= Blended education, 3= E-learning; ** Effect size was calculated as 0.44.

variances was tested. At the end of Levene test conducted ($p=.006$, $p<.05$), it was determined that variances did not distribute homogeneously and results are presented in Table 5. Results were also controlled through non-parametric tests.

Mean scores of the participants preferring to study individually in relation to the attitudes towards e-learning ($\bar{x} = 68.37$) are lower than the mean scores of the participants preferring to study in groups $\bar{x} = 74.24$. When the results of the analysis based on way of studying are examined (Table 7), it is seen that attitudes of the students did not differ significantly by the variable of way of studying ($t(53)=-1.670$, $p>.05$, $r=0.22$). As a result, it was accepted that mean scores of the groups did not vary by the way of studying.

Learning method

Results of the analysis based on the variable of learning method are presented in Table 6. Prior to the analysis, the assumption of equity of variances was tested. At the end of Levene test conducted, it was determined that variances distributed homogeneously for ($p=.081$, $p>.05$).

Mean score of the students preferring face-to-face learning method is $\bar{x} = 62.54$ while mean scores of the students preferring blended learning method and e-learning are $\bar{x} = 75.50$ and $\bar{x} = 80.93$, respectively. This finding may imply that there is a significant difference between learning methods and attitudes of the students of the Vocational and Technical High School for Girls ($F(2,116) = 14.228$, $p=0.00$). Post Hoc test was carried out to determine between which groups this significant difference existed.

Accordingly, it was understood that there were significant differences between 1 (face-to-face education) and 2 (blended education) and 1 (face-to-face education) and 3 (e-learning) (Table 6). As a result, it was accepted that mean scores of the groups differed by the learning

method.

Frequency of using internet

One Way Anova Analysis was carried out in order to determine the differences based on the frequency of using internet. Prior to One Way Anova, the assumption of the equity of variances was tested. At the end of Levene test conducted, it was determined that variances distributed homogeneously for ($p=.489$, $p>.05$). Results of the analysis are presented in Table 7.

Mean score of the students studying in the Vocational and Technical High School for Girls using internet for 0-7 h a week is $\bar{x} = 72.79$ while that of the students using internet for 8-21 h a week is $\bar{x} = 71.58$. Whereas the mean score of the students of the Vocational and Technical High School for Girls using internet for 22-35 h a week is $\bar{x} = 65.33$, that of the students using internet for more than 36 h is $\bar{x} = 68.18$. The participants using internet for 0-7 h a week had the highest mean score. As a result, One Way Anova indicated that frequency of using internet did not have a significant effect on the e-learning attitudes of the students of the Vocational and Technical High School for Girls. In other words, it was accepted that mean scores did not differ by the variable of frequency of using internet.

Experience in using computer

One Way Anova Analysis was conducted in order to determine the differences based on the experience in using computer. Prior to the One Way Anova Analysis, the assumption of equity of variances was tested. At the end of Levene test conducted, it was determined that variances distributed homogeneously for ($p=.427$, $p>.05$). Results of the analysis are presented in Table 8.

When the analysis results are examined (Table 8), it is

Table 7. Effect of frequency of using internet on attitudes towards e-learning.

Source of variance	Sum of squares	df	Mean square	F	p
Between groups	1046.043	3	348.681	1.341**	.265
Within groups	29898.781	115	259.989		
Total	30944.824	118			

*1= 0-7 h a week, 2= 8-21 h a week, 3= 22-35 h a week, 4= more than 36 h a week; **Effect size was calculated as 0.18.

Table 8. Effect of experience in using computer on attitudes towards e-learning.

Source of variance	Sum of squares	df	Mean square	F	p
Between Groups	632.522	4	158.131	0.595**	.667
Within Groups	30312.301	114	265.897		
Total	30944.824	118			

*1=Less than 1 year, 2=1-3 Years, 3=4-5 Years, 4=6-7 Years, 5=More than 7 years. **Effect size was calculated as 0.14.

seen that attitudes of the students towards e-learning do not vary significantly by experience in using computer ($F(4,114) = 0.595$, $p=0.667$). Mean score of the students having experience for less than 1 year in relation to their attitudes towards e-learning is $\bar{x} = 70.33$ while that of the students having experience for 1-3 years is $\bar{x} = 65.94$. Whereas the mean score of the students having experience in using computer for 4-5 years is $\bar{x} = 72.89$, that of the students having experience in using computer for 6-7 years is $\bar{x} = 71.50$. The mean score of the students having experience in using computer for more than 7 years is $\bar{x} = 69.17$. This finding may imply that there are not significant differences between students' attitudes towards e-learning and their levels of experience in using computer (Table 8). As a consequence, it was accepted that mean scores of the groups did not differ by the experience in using computer.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

According to the results of the analysis made with the students of the Vocational and Technical High School for Girls, students' attitudes towards e-learning correspond to 3.53 in the 5-point likert type scale and, in other words, they "agree" with the items. This shows that attitudes of the students towards e-learning are positively at a good level. This result shows parallelism with some of the studies in the literature. In the study conducted by Tekinarslan (2008) with 804 university students, it was reported that they generally had positive attitudes towards e-learning and enjoyed learning in such an environment. In the study conducted with 47 pre-service teachers, Dikbaş (2006) found the mean score of the

attitudes of the participants as 3.80, which is the indicator of a positive attitude. This result is also supported by the studies conducted by Liaw et al. (2007) in order to examine the attitudes of students towards e-learning. In the study carried out by Özgür and Tosun (2010) with a sample of 200 students, differently from the present study, attitudes of the students towards e-learning were assessed after a lesson was taught in the e-learning environment and it was seen that students had more positive attitudes. According to Haznedar (2012), in the researches on attitudes towards e-learning, attitudes of the students who had received distance education or education through e-learning method were assessed after the participation in order to evaluate the programme. In this case, it will be necessary to reorganise the programme in line with the attitudes of the students. This, in turn, will lead to time and money loss. Therefore, it is of great importance to determine the attitudes before designing the e-learning programme.

This study reveals that the students of the Vocational and Technical High School for Girls towards e-learning are positively at a good level. The study does not support the findings of some studies on positive attitudes in literature. In a study conducted by Durmuş and Kaya (2011) on 104 preservice teachers studying in the Department of Computer and Instructional Technologies Teaching, mean score of the participants in relation to their attitudes towards distance education was calculated as 3.32, which is an indicator of an undecided opinion among the preservice teachers. Likewise, examining the attitudes of 129 preservice computer teachers towards distance education, Ateş and Altun (2008) found the mean score as 3.26, which refers to indecision. In the study conducted by Şimşek et al. (2010) on 56 students, their attitudes towards distance education were assessed

and the mean score was found to be 3.27, which means a moderate level of attitude. In the comprehensive study conducted by Haznedar (2012) on 2949 students in total from the Faculty of Education, Maritime Faculty, Faculty of Science, Faculty of Letters, Faculty of Fine Arts, Faculty of Law, Faculty of Economics and Administrative Sciences, Faculty of Management, Faculty of Engineering, Faculty of Medicine and Faculty of Nursing, the mean score was found to be 3.13, which corresponds to the alternative of “undecided”.

The results obtained in this study indicate that there were no significant differences between the variable of gender and attitudes of the students from the technical and vocational high school for girls. This result shows similarity to the study in the literature (Ağır, 2007; Tekinarslan, 2008). In the study by Durmuş and Kaya (2011), on 104 preservice computer teachers, it was reported that attitudes towards distance education did not differ significantly by gender. Examining the attitudes of the preservice computer teachers, Ayşe and Altun (2008) determined that gender was not a predictive variable on attitude. In the study conducted by Şimşek et al. (2010), it was reported that attitudes of the students towards distance education did not differ significantly by gender. However, according to the study of Haznedar (2012) conducted with a large sample, attitudes differ by gender. In the analysis made by Dikbaş (2006), mean score of the female students was found to be higher than that of the male students. Likewise, Richardson (2007) found there were significant differences between the attitudes of the participants and the gender.

It was determined that the variable of motivation type did not lead to significant differences in the attitudes of the students from the technical and vocational high school for girls. This finding shows there is no similarity to the study in the literature. Haznedar (2012) determined in the study conducted with the participation of a vast number of university students that attitudes of the students towards e-learning differed significantly by motivation type. In the literature, there are a limited number of studies examining the impacts of such variables as motivation. In literature exists on extrinsic and intrinsic motivators. Yoo et al. (2012) determined that intrinsic motivators (effort expectancy, attitudes, and anxiety) affected employees' intention to use e-learning in the workplace more strongly than did the extrinsic motivators (performance expectancy, social influence, and facilitating conditions). Likewise, Schifter (2000) 'concern about faculty workload' was the top barrier to use e-learning, while 'personal motivation to use technology' was the top motivating factor.

Another important finding is that attitudes of the students from the technical and vocational high school for girls towards e-learning differed significantly “way of studying”, “way of learning” and “learning method”. This finding shows similarity to the results of Haznedar (2012) with university students, attitudes of the university students towards e-learning. As stated by Swan (2004)

specific learner characteristics (i.e. high motivation, high self-efficacy, mature epistemological beliefs) and particular learning styles (i.e. visual, independent.) that are more supportive of learning online than are other learner characteristics and learning styles. In the literature, there are many studies on impacts of learning styles (Federico, 2000; Manochehr, 2006; McNutt and Brennan, 2005; Şahin, 2008; Rakap, 2010). In the literature, there are a limited number of studies examining the impacts of such variables as way of studying, way of learning and learning method.

The study revealed that the variable of frequency of using internet and experience in using computer did not lead to significant differences in the attitudes of the students towards e-learning. This was not an expected result according to the literature. As stated by Ateş and Altun (2008), there were significant differences between the variable of experience in using computer and attitudes of the students. Similar to the study by Haznedar (2012), attitudes of the students towards e-learning differed significantly by frequency of using internet. Likewise, Panda and Mishra (2007) suggest that extensive use of computers and email has a high relationship with positive attitudes towards e-learning. However, the study supported the findings of Haznedar (2012) on experience in using computer.

Therefore, it is recommended that learning methods and ways of learning preferred by the students should be taken into consideration while developing the e-learning environments. Besides, different studies should be conducted on this subject matter and the variables to be considered while developing the e-learning environments should be determined.

IMPLICATIONS AND LIMITATIONS

Overall based on these results there seems to be no difference between the attitudes of students of technical and vocational high school for girls towards e-learning with respect to gender, experience in the use of computers, frequency of using internet and motivation style. The result shows that way of learning, way of the studying and learning methods had significant impacts on the students' attitudes towards e-learning. At the empirical level, the current findings are helpful to support the instructional design of e-learning environments in view of student' differences in learning.

The research was limited by small sample. However, due to the small sample size it is not possible to conclusively prove or disprove any perceived relationship. Therefore, based on the observed results a larger more comprehensive survey is needed.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Analysing instructors' view regarding the efficiency of the Turkish history subjects presented in Turkey social studies textbooks

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Just like it is the reflex of each nation to teach its own history to the next generations, it is essential that our country is also able to identify the sufficiency level of the Turkish history within the framework of developing a programme. Through this study, the parallelism between the social studies teaching programme within the education process and the textbooks and the instructors' views regarding the way the Turkish history subjects are presented and the discussion of solution suggestions about these issues is aimed. Towards this end, the opinions of the instructors of Social Studies have been taken. In the study, questionnaire technique is used, and it has been established that the Cronbach alpha reliability coefficient of the scale is 0,89 ($\alpha = 0,89$), and the results obtained from the scale have been analysed and interpreted through SPSS 15. The Social Studies teachers make up the universe of the study, and the instructors who teach 6th and 7th grade social studies in some towns of the city of Istanbul comprise the sample of the study, who were chosen by means of random method. According to the results of the study upon the views of the Social Studies teachers, it is realized that the textbooks of the Turkish history subjects and the way they are presented in the education programme and the methods and techniques employed in this issue are insufficient, and that the teachers fail to pay enough attention to benefiting from films, documentaries and various literary products throughout the education-teaching process. In the research, it is emphasized that students are particularly more interested in the history of the Ottoman Empire and the recent history, that the instructors are inadequate in terms of making use of the additional materials in the education-training processes, and that the textbooks fail to provide sufficient suggestions about the use of various teaching strategies in the education-teaching processes. In the textbooks, which are indispensable for the education-teaching processes, the materials that address the learning styles of students are not included sufficiently.

Key words: Social studies, textbook, teacher, Turkish History.

INTRODUCTION

The concept of Social Studies, accepted by Committee on the Social Studies under National Education

Association's Commission of Ten on Secondary School Studies in the USA for the first time in 1916, is defined as

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"Studies directly related to organization and customs of human community as well as studies about humans as members of social unions are social studies" (Koken, 1995).

Social studies education was included in various courses such as history, geography and citizenship in accordance with unidisciplinary program pattern in 1926, 1930, 1936 and 1948 education programs during the Republican Period (Ozturk and Dilek, 2005). According to the Directive for Analysing and Evaluating Education Tools issued in Official Bulletin of Ministry of National Education with the date of 2006 and number of 2589; textbooks encourage efficient and effective use of information technologies. They include various approaches regarding the course subject beyond any prejudgements and normative statements. They consider students as the central point for activities of any kind under the guidance of the instructor. Interests, skills and needs of students are taken into consideration for preparation and organization of course subjects.

The vision of Social Studies Training Programme is defined as: "To grow up modern citizens of Republic of Turkey in the 21st century, who have adopted Atatürk's principles and revolutions, comprehended Turkish history and culture, equipped with fundamental democratic values; who are respectful for civil rights, mindful of their environment; who evaluate the information with their experiences, and create, use and organize it within social and cultural context (critical thinking, creative, accurate decision making); with developed social participation skills; who have acquired methods, used for creating scientific knowledge by social scientists; who are active in social life, productive, aware of their rights and responsibilities"(MNE, 2005).

Several amendments were made to Social Studies Training Programme in 2004. Particularly, it is seen that the program was established on the constructivism understanding. As mentioned by Kabapinar (2007), when examining the subject scopes of Social Studies Training Programmes in 1998 and 2004, it is noticeable that the most significant difference is the scope and content of historical subjects. Social Studies Training Programme in 2004 was constructed on the basis of themes. Particularly, historical subjects were not presented under a chronological approach; presentation of Turkish history in a chronological and holistic approach was not present in textbooks of Social Studies of 2005 (Kabapinar, 2007).

Education of History and Social Studies has undergone a significant change in Turkey in recent years. The new Social Studies Curriculum and Syllabus prepared by the Turkish Education Board has been put in practice since the year 2005, and the new History Curriculum has been implemented from the year 2008 on. And in accordance with these programmes new text books have been prepared (Aktekin and Ozturk, 2009).

The concept of History as a disciplinary within Social Studies points out two major facts. Those are defined as scientific researches built on the reality experienced by a

society or humanity as well as realities experienced in the course of time by an existing society or social group, a nation or the entire humanity, and integrity of information presented as a result of such researches (Yucel and Yediyildiz, 1990).

Teaching history subjects has two individual points for creating national consciousness. Considering problems related to history education, new teaching methods are essential for making history subjects more educational and pleasurable for students. Method for teaching via historical places is a student-based method, which guides students to researching and thinking (Yesilbursa, 2008).

When the general objectives of education of History in our country are examined closely, the goals can be categorized in two chief groups: transmission of history knowledge and culture, and skills related to arranging, using and producing the knowledge. When we compare the general goals of education of History in our country with those general purposes of education of History in the United Kingdom, Holland, Austria and France, it can be observed that in the goals of our country, transmission of culture and knowledge of history is attached more importance (Demircioglu, 2006).

Purpose of the study

This study examines new and up-to-date opinions regarding the manner subjects relevant to Turkish History are presented in textbooks and their efficiency levels in line with the instructors' views. Furthermore, this study aims at discussion of the parallelism between the social studies teaching program within the education process and textbooks as well as the instructors' views regarding the way the Turkish history subjects together with solution suggestions about such issues. To this end, opinions of the instructors of Social Studies were taken. Results presented in this study will be a guiding light for the future researches.

STUDY METHODOLOGY

The screening model used in this study determines and describes existing or past situation (Karasar, 1999). This research aims to analyze the way the Social Studies textbooks used in Turkey is used and provide information about the Turkish History, and the current situation regarding this has been ascertained.

The study is initiated with a scale of 28 questions and a preliminary study has been carried out. In this context, a preliminary study has been conducted with 16 instructors of social studies; 11 questions out of 28 questions in the scale have been removed from the scale as found irrelevant to the scope of this study; then the cronbach alpha reliability coefficient of the scale has been calculated.

It has been established that the cronbach alpha reliability coefficient of the scale of 17 questions is 0.89 ($\alpha = 0.89$). Thereafter, recent version of the scale has been applied to sample group of 76 participants. The results obtained from the scale employed in the study were analysed and findings interpreted through SPSS 15.

Table 1. Gender distribution of teachers.

Gender	F	%
Female	34	44,7
Male	42	55,3
Total	76	100

Table 2. Distribution of teachers by educational background.

Educational Background	F	%
High school	0	0
Graduate School	0	0
Bachelor's Degree	58	76,3
Master Degree	17	22,4
PhD	1	1,3
Total	76	100

Table 3. Distribution of teachers by their fields of bachelor's degree.

Fields of Bachelor's Degree	F	%
Social Studies Teaching	44	57,9
History (Science and Letters)	23	30,3
Geography (Science and Letters)	9	11,8
History Teaching	0	0
Geography Teaching	0	0
Total	76	100

Assumptions

This study has been prepared in consideration of the assumptions below:

1. Tools used for collecting data is appropriate for the purpose and subject of this study,
2. The instructors of social studies participating in the study give sincere and frank answers to the questionnaire of the scale,
3. The instructors participating in this study have the characteristics to represent the universe.

Limitations of the study

The Social Studies teachers make up the universe of the study, and the instructors chosen by means of random method, who lecture social studies courses for 6th and 7th grades in some towns of Istanbul (Bagcilar, Kadikoy, Uskudar, Sile, Esenler, Avcilar, Gungoren, Eyup, Zeytinburnu, Beykoz, Umraniye, Bahcelievler) compromise the sample of the study.

FINDINGS

Considering Table 1, it is seen that ratio of female

Table 4. Teachers' views regarding at which level Turkish History subjects should be presented in textbooks.

Teachers' views	F	%
They should be presented at high level	51	67,1
They should be presented at medium level	25	32,9
They should be presented at low level	0	0
They should not be presented	0	0
I do not have an opinion	0	0
Total	76	100

Table 5. Teachers' views regarding Social Studies training programme.

I have reviewed the textbook	F	%
Yes	57	75
No	19	25
Total	76	100

teachers of social studies participating in the study is 44.7%, while ratio of male teachers is 55.3%.

Table 2 presents data about educational background of teachers participating in the study. Based upon this study, it is seen that the largest share in this distribution is composed of teachers graduated with bachelor's degree (76.3%). It is also visible that the second place is composed of teachers with master degree (22.4%) and third place is occupied by teachers with PhD (1.3%).

As seen in Table 3, when we look at distribution chart of social studies teachers participating in the study by the fields of bachelor's degree; it has been established that the largest share belongs to the graduates from "social studies teaching" (57.9%). It is also understood that the second largest field in the table is History (30.3 %) and Geography (11.8 %).

When we look at Table 4: Teachers' views regarding at which level "Turkish History" subjects should be presented in social studies textbooks; it is seen that the answer "Turkish History subjects should be presented at high level" (67.1%) is placed on the top while the answer "they should be presented at medium level" (32.9%) has the least share in the distribution chart.

As stated in Table 5, social studies teachers participating in the study have been asked whether they have reviewed training programme and it is understood that the rate of teachers having reviewed the study is the highest (75%) in the distribution chart.

Table 6 presents the values showing the efficiency levels of Turkish History subjects in social studies textbooks. Accordingly, it is seen that the highest share in the distribution chart belongs to the ones stating that "Turkish History" subjects are very efficient in textbooks (47.4 %), while the lowest share is composed of the ones saying that (3.9%) they do not have an opinion.

Table 6. Teachers' views regarding efficiency of Turkish History subjects.

Efficiency Level	F	%
Very Efficient	36	47,4
Efficient	11	14,5
Inefficient	21	27,6
Very Inefficient	5	6,6
I do not have an opinion	3	3,9
Total	76	100

Table 7. Teachers' views regarding the way Turkish History subjects is presented.

Presentation Levels	F	%
Very Efficient	1	1,3
Efficient	4	5,3
Inefficient	60	78,9
Very Inefficient	11	14,5
I do not have an opinion	0	0
Total	76	100

Table 8. Compatibility of the programmes with textbooks in terms of presenting Turkish History subjects.

Compatibility Level	F	%
Completely compatible	15	19,7
Moderately compatible	40	52,6
Completely incompatible	10	13,2
Moderately incompatible	6	7,9
I do not have an opinion	5	6,6
Total	76	100

As seen in Table 7, when teachers are asked about the way Turkish History subjects are presented in social studies textbooks, the highest share belongs to the ones stating that the way Turkish History subjects are presented in textbooks is at "inefficient" level (78.9 %).

According to the answers given to the questions about the compatibility level between training programmes and textbooks in terms of presentation of Turkish History subjects in Table 8, the highest share in the distribution chart is the ones with the answer of "moderately compatible" (52.6%), the lowest share is the ones expressing that they do not have an opinion (6.6%).

When we look at Table 9 which is about teachers' view regarding "which period of Turkish History should be presented more" in social studies textbooks, it is understood that the highest share in the distribution chart belongs to the ones with the answer of "Ottoman History" (31.6%) while the lowest rate is composed of "First

Table 9. Teachers' views regarding Turkish history periods.

Turkish History Periods	F	%
Ancient Turkish History	9	11,8
First Islamic Turkish States	7	9,2
Seljuk History	15	19,7
Ottoman History	24	31,6
Republican History	21	27,6
Total	76	100

Table 10. Teachers' views regarding the levels Turkish History subjects attract students' attention.

Levels Turkish History subjects attract students' attention	F	%
At high level	33	43,4
At medium level	21	27,6
At low level	16	21,1
At the lowest level	2	2,6
I do not have an opinion	4	5,3
Total	76	100

Table 11. Teachers' views regarding the levels historical periods attract students' attention.

Turkish History Periods	F	%
Ancient Turkish History	11	14,5
First Islamic Turkish States	5	6,6
Seljuk History	9	11,8
Ottoman History	24	31,6
Republican History	27	35,5
Total	76	100

Islamic Turkish States" (9.2%).

Teachers are asked about the levels Turkish History subjects in textbooks attract students' attention in Table 10 and it is seen that the largest share belongs to the ones answering "at high level" (43.4%), while the ones answering "at the lowest level" constitute the lowest rate (2.6 %).

As seen in Table 11, teachers have stated that "Republican History" among Turkish History subjects in textbooks attracts much more attention of students (35.5%), while it is expressed that "First Islamic Turkish States' History" (6.6%) attracts students' attention at the least.

As stated in Table 12, according to the answers given to the question about the level of utilization from oral and written literature is utilized for Turkish History subjects in social studies textbooks, it has been established that the

Table 12. Teachers' views regarding at which level oral and written literature is utilized.

Level of utilization from oral and written literature	F	%
Very Sufficient	12	15,8
Sufficient	8	10,5
Insufficient	38	50
Very Insufficient	15	19,7
I do not have an opinion	3	3,9
Total	76	100

Table 13. Teachers' views regarding which oral and written literary works are mostly.

Story	F	%
Biography	52	68,4
Memoirs	1	1,3
Sayings	5	6,6
Speech	0	0
Diary	0	0
Poem	0	0
Idiom	8	10,5
Passages	4	5,3
Travel Writing	3	3,9
Columns	0	0
Mani (Turkish Folk Poetry)	1	1,3
Total	2	2,6
Story	76	100

Table 14. Teachers' views regarding the use of visual images in textbooks.

Efficiency level of visual images	F	%
Very Efficient	14	18,4
Efficient	10	13,2
Inefficient	31	40,8
Very Inefficient	19	25
I do not have an opinion	2	2,6
Total	76	100

highest share belongs to the answer "insufficient".

While teachers of social studies are asked for their opinion about which oral and written literary works should be utilized for Turkish History subjects, the answers given have been presented in Table 13. According to the answers given by teachers, it has been understood that the most commonly answered literature type is "story" (68.4%).

Teachers of social studies are asked for their opinion

Table 15. Teachers' views regarding the level of utilization from movies and documentaries.

Views regarding efficiency level	F	%
Very Efficient	8	10,5
Efficient	12	15,8
Inefficient	41	54
Very Inefficient	14	18,4
I do not have an opinion	1	1,3
Total	76	100

Table 16. Efficiency level of exercise questions about the use of movies and documentaries.

Efficiency Levels of Exercise Questions	F	%
Very Efficient	18	23,7
Efficient	10	13,2
Inefficient	39	51,3
Very Inefficient	8	10,5
I do not have an opinion	1	1,3
Total	76	100

about efficiency level of use of visual images in textbooks; the distribution chart based upon the answers given has been presented in Table 14. Accordingly, it is understood that the most common answer regarding the efficiency level of visual images in textbooks (maps, photos, images etc.) is "inefficient" (40.8%).

Teachers of social studies are asked for their opinion about efficiency level of recommendations for utilizing from movies and documentaries during presentation of Turkish History subjects in textbooks; the distribution chart based upon the answers given is presented in Table 15. Based upon the answers given, the most common opinion is understood to be "inefficient" (54%).

Teachers of social studies are asked for their opinion about Efficiency level of exercise questions given in textbooks about the use of movies and documentaries; based upon the answers given it has been established that the most common answer is "inefficient" (51.3%). Distribution chart for the answers given is presented in Table 16.

Teachers of social studies are asked for their opinion about efficiency level of recommendations given in textbooks for implementing different teaching strategies other than lecture method during presentation of Turkish History subjects in the class; based upon the answers given it has been established that the most common answer is "inefficient" (56.6%). Distribution chart for the answers given is presented in Table 17.

Teachers of social studies are asked for their opinion about level of utilization from additional sources together with the textbooks for Turkish History related subjects; based upon the answers given it has been established

Table 17. Efficiency level of recommendations given in textbooks for implementation of different teaching strategies.

Implementation of Different Teaching Strategies	F	%
Very Efficient	14	18,4
Efficient	10	13,2
Inefficient	43	56,6
Very Inefficient	8	10,5
I do not have an opinion	1	1,3
Total	76	100

Table 18. Level of utilization from additional sources during presentation of Turkish History subjects.

Efficiency of Utilization from Additional Sources	F	%
Very Efficient	37	48,7
Efficient	20	26,3
Inefficient	5	6,6
Very Inefficient	11	14,5
I do not have an opinion	3	3,9
Total	76	100

that the most common answer is “very efficient” (48.7%). Distribution chart for the answers given is presented in Table 18.

Teachers participating in the study are asked for their opinion about to what extent the principles of neutralism and objectiveness are followed during the presentation of Turkish History subjects in textbooks; based upon the answers given it has been established that the most common answer is “partially neutral and objective” (40,8%). Distribution chart for the answers given is presented in Table 19.

DISCUSSION, CONCLUSION AND SUGGESTIONS

Every country may act with the idea of transmitting their own national culture and history to later generations. Bearing this thought in mind, just as it can be possible for the current education-training programmes to be arranged according to the interests and needs of next generations, it can also be necessary to develop this as a concept. As in all other countries, in Turkey the Social Studies syllabus-curriculum programme and the textbooks/materials prepared in accordance with that program may need to be prepared again within the process of education and training in a way that will meet the students’ interest and needs.

Consequently, when we look at the teachers’ views regarding the 6th and 7th grade Social Studies textbooks

Table 19. Teachers’ views regarding the manner Turkish History subjects are presented in textbooks.

Views regarding the manner of presenting subjects	F	%
Completely neutral and objective	26	34,2
Partially neutral and objective	31	40,8
Hardly neutral and objective	11	14,5
Not neutral and objective	7	9,2
I do not have an opinion	1	1,3
Total	76	100

prepared in parallel with the Turkish Social Studies Curriculum and Syllabus program we can see that;

It is seen that teachers lecturing social studies courses have agreed that Turkish History subjects should be presented at a higher level in social studies textbooks. When social studies education-teaching programmes of various countries are examined, it has been established that each country (USA, Germany, Czech Republic, Finland, South Africa, United Kingdom, Islamic Republic of Iran, Republic of Ireland, Sweden, Jamaica, Japan, Canada, Egypt, Norway, Pakistan, Singapore, New Zealand, Greece) gives place to its own national history within its programmes (Ozturk, 2011).

It is understood that most of the teachers participating in the study have reviewed social studies teaching programme and they have emphasized that Turkish History subjects are “very efficient” in terms of efficiency.

Upon examining social studies education-training programmes in Turkey, it is possible to state that Turkish History subjects are included in the “Chapter: Turks on Silk Road” for the 6th Grades, and “in the “Chapter: Journey into Turkish History” and partly in “Chapter: Economic and social life” for the 7th grades (MNE, 2005); while they are also included within other subjects in other chapters.

It has been emphasized that compatibility between the presentation of Turkish History subjects and textbooks is at medium level. Furthermore, teachers have pointed out that Turkish History subjects in textbooks prepared in parallel with teaching programme are “insufficient”. Today, the Council of Education and Morality (COEM) has defined some criteria for preparing textbooks. Upon review and evaluation of the textbooks approved by the Council of Education and Morality; it is seen that the council takes decisions to approve or disapprove textbooks based upon the principles such as scientific efficiency of content, efficiency of content for achieving training and education acquisitions (COEM, 2013).

Again, when teachers of social studies are asked about which period of Turkish History should be presented more in social studies textbooks; it is seen that the most

common answer is "Ottoman History"; and teachers have also stated that Turkish History subjects included in textbooks attract students' attention at "high level". On the other hand, it is seen that teachers have expressed that students are much more interested in "Republican period" among other Turkish History subjects. When teaching programmes are reviewed, it has been established that the "Chapter: Turks on Silk Road" in textbooks prepared in parallel with the 6th grade social studies programme as well as this training programme give place particularly to Pre-Islamic Turkish States and First Islamic Turkish States; the history subjects are presented in a manner to cover Seljukian Period. Upon review of the 7th grade social studies teaching programme and textbooks, it is seen that the "Chapter: Journey into Turkish History" mainly focuses on Seljukian and Ottoman History in a manner that such subjects will also cover and include political, cultural and social issues. Additionally, it is understood that Seljukian and Ottoman History are presented with their social and cultural dimensions mainly in the "Chapter: Economy and Social Life" prepared for the same grade. It is particularly remarkable that subjects of Republican History are presented within some geographical subjects. While Republican History subjects are presented in the "Chapter: Global Links" of the 6th grade training programme and the relevant textbook together with today's world problems, acquiring a democracy awareness and actual subjects, it is possible to state that it is not efficient to raise a sufficient level of democratic awareness among students in terms of Republican History. It is also possible to say that the "Chapters: Living Democracy" and "Bridge Among Countries" for the 7th grades include much more history subjects about the Republican Period compared to the level of presentation in the 6th grade.

The study shows that other chapters of both the 6th and 7th grade partly include history subjects; but the above-mentioned chapters mostly address to Turkish History subjects.

When social studies teachers are asked whether oral and written literary works relevant to Turkish History are utilized sufficiently in textbooks, it has been established that they emphasized that there is not sufficient recommendation for utilization from such literary works in textbooks and the recommendations having been already made are "ineffective"; it is seen that teachers mostly suggest utilizing from "stories" among other oral and written literary works relevant to Turkish History in the textbooks. It has been established that only within the "Chapter: Turks on Silk Road" for the Social Studies of the 6th grade, some recommendations are made for teachers to utilize from oral and written literary works while lecturing the course with acquisition no 1 and 5: "utilizing from sagas, inscriptions and other documents, teachers makes inferences regarding political, economic and cultural characteristics of First Central Asian Turkish States" and "Utilizing from visual and written materials,

teachers review emergence and expansion of Islam" (MNE, 2005); and, similar recommendations are seen in the "Chapter: Journey into Turkish History" for the 7th Grades, within acquisition no 7 "Teachers give examples of Turkish cultural elements from Seyahatname (Travelogue)".

According to the comments on implementation of social studies teaching programme, while teaching and lecturing this course; "Teachers must provide students with national, moral, humanistic, ethic, cultural values and guide them to fulfil their responsibilities and duties towards the Republic of Turkey, which is a democratic, secular and social state of law. Furthermore, teachers must encourage literary works such as novels, historical novels, stories, memoirs, travel books, poems and columns which will increase interest of students in course subjects (MNE, 2005).

On the other hand, it is seen that teachers emphasise insufficient level of visual elements (maps, photos, images, etc.) in textbooks during presentation of Turkish History subjects. It is seen that some recommendations are made in this regard in the acquisition no 5 "Utilizing from visual and written materials, teachers review emergence and expansion of Islam" under the "Chapter: Turks on Silk Road" of the 6th grade social studies teaching programme. However, it has been established that there are no explicit expressions and comments for encouraging use of visual elements (maps, photos, images, etc.) in terms of acquisitions within the 7th grade programme; there are only some emphasis such as the one in the activity part called "Dream of Osman Bey" (Utilizing from first hand sources and history maps, teachers review development period of Ottoman Empire with cooperative learning method)" (MNE, 2005). It is possible to say that acquisitions in particular are supported by activity examples within the programme.

One of the characteristics of visual evidences used in textbooks published in 2005 is their variety. Newspaper reports, comics, student diaries, letters, historical documents and photos, posters, tables, graphics and schemes used as visual evidences in visual cases textbooks appear to be meaningful patterns which contribute to teaching as much as written materials (Kabapinar, 2007).

Teachers have stated that level of recommendations for utilizing from movies and documentaries during presentation of Turkish History subjects in textbooks is ineffective. Furthermore, they have emphasized that level of exercise questions about the use of movies and documentaries in the textbooks is again "ineffective".

In the section of sample effectives related to the achievements of 6th grade curriculum, it was observed that emphasis of "Turks" (Documentaries regarding first Central Asian Turkish States and first Turkish-Islamic States are watched) was made. By pointing out the 2nd and 4th achievements of 7th grades' "Journey to Turkish History" unit, it can be seen that "Foundation" was

emphasized (The movie "Foundation" is watched and foundation period of the Ottoman Empire is examined) and at the same grade level, it can be observed that statements such as "We are Watching Documentary" (training films explaining governing structure of the Republic of Turkey and the importance of assembly) are used as well as pointing out 3rd achievement in the section related to History of the Republic in "Living Democracy" unit. It has been encountered with very few studies regarding use of films and documentaries in the processes of history training in our country, as well. According to one of these studies (Safran, 2002), it was found that 97, 5% of history teachers never used films and documentaries in their classes while 2, 5% of them sometimes used the mentioned materials (Safran, 2002). According to Demircioglu (2007), when the history training is examined in our country, it is seen that some part of our teachers do not benefit from films in their classes and some of those history teachers who use films in their classes cannot use these materials efficiently (Demircioglu, 2007).

We have been witnessing from past to the present that effort for changing curriculum in the level of primary school is ongoing. It was seen that the subjects of Turkish history were included in the curriculum with the purpose of training efficient and qualified citizens; in this framework, various suggestions were made for teachers through emphasizing on the importance of benefiting from material culture elements and materials (MNE, 2005).

The EU countries (Edel and Stotzka, 2003; Yilmaz and Yigit, 2010) and the USA (Haas and Inuwa, 1992) are seen to employ the same methods in teaching students their own history.

Benefiting from additional sources along with textbook for social studies teachers regarding particularly Turkish history was stated to be "very sufficient". In addition to textbooks, there are some studies (Yildiz, 2003; Karabag, 2010; Ata, 2002) which emphasize the importance of benefiting from additional sources in order to provide variety and create an effective training and education in the processes education and training. While the subjects of Turkish History in textbooks are given, it has been seen that social studies teachers generally give the answer of "Partially impartial and objective" in terms of consistency with impartiality and objectiveness principle.

The following statements were specified regarding this issue in the skills given directly in 7th grade (MNE, 2005):

"The following suggested steps can be used in order to be able to determine the difference between cases and comments in a written text:

1. The difference between cases and comments should always be taken into consideration while reading or listening to materials containing information.
2. Praising, approval or criticizing statements in the text

should be examined. For example; "good, bad, poor, satisfactory, etc."

3. It should be sensitive to exaggerated qualification statements. For example; "the best, the worst, the biggest, gorgeous, horrible, etc."

4. It should be sought for extremely negative statements. For example; "miserable, poor, dishonorable, etc."

5. Generalizations within the sentences should be scrutinized. For example; "never, none, always, etc."

6. At the end, it should be determined if the information is a fact or a view.

With the latest changes in our country in 2005 in terms of education and training curriculum, it can be said that social studies educational curriculum has been built upon student-centered perception and the same perceptive has been maintained in history training, as well.

The idea to employ in Turkey the methods and the techniques used in the education of history in Europe and the USA can be beneficial to provide a solution for the problems faced in teaching history in our country.

The use of methods and techniques, which are used in history training of Europe and the USA, in Turkey may be beneficial for offering solutions to the problems encountered in our country regarding history teaching. These methods to be used are the suggested techniques both economically and in terms of saving of time. When all of these techniques are taken into consideration, the attention grabbing point is the fact that establishing a connection among actual topics in teaching history is important (Stahl, 1994). It was suggested by Kabapinar (2007) that it was quite difficult to reach the desired purpose if the teaching material, technique or material was not prepared in a qualified way whatever the techniques or materials were (Kabapinar, 2007).

As in the Social Studies Education Programme, it is seen that there are some differences between the general goals of the secondary education History syllabuses of the European Union members and those of our country. (Demircioglu, 2006). According to this, it can be argued that every nation's action to teach its own history to next generations is a fact that is accepted all over the world. And on this action, it can be said that the idea that especially the generations who receive power from their past will be able to take firmer steps towards the future may have been influential.

Suggestions

More attention should be paid to the necessity of parallelism between social studies textbooks and curriculum. As in the reflex of each country being shown to their national history teaching, more sensitiveness in teaching Turkish history in our country may be significant in terms of our national solidarity and unity.

It should not be ignored that historical personages in

the social studies textbooks are role model for students; more attention should be paid to use different learning-teaching strategies on this topic and use materials which address learning styles of the students in order to maintain an effective and permanent learning.

It should be given importance to variety in teaching methods and it should be taken into account that there may be students possessing different learning styles within the class. In this context, Kabapınar (2007), who mentions the importance of pursuing the principles such as from simple to difficult, from tangible to intangible, from near to distant within the process of teaching children in the level of primary school, states that teaching activities to be performed in accordance with the interests and needs of students may be more efficient in their learning processes.

It should be paid attention to regulate Turkish history topics in textbooks in a way that will enable to make connection with today and especially those scientists who contributed to the development of Turkish-Islamic Civilization and World Science History should be included.

In addition to the subjects included in textbooks, more films and documentaries should be included regarding Turkish history; it should be benefited more from the materials addressing visual, aural and kinesthetic learning styles of the students in learning-teaching processes and technological elements which may attract attention of students should be used more frequently.

It should be benefited more from stories and similar verbal and written literary works regarding especially Turkish history; students should be guided in a way that they can take advantage of books and magazines which may attract their attentions; students should be given the opportunities to configure their knowledge and teachers should have more vision through in-service and similar trainings for enabling students to gain spirit of doing research.

Conflict of Interests

The authors have not declared any conflict of interests.

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