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*Full Length Research Paper*

## The term “gifted child” from teachers’ view

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The aim of the present research is to present the term of “gifted child” from the point of view of teachers who work at middle and high schools. This study aims to obtain more information about gifted students and to learn their different characteristics. It is important to know the key characteristics of gifted students. To obtain suitable data used in selecting gifted students, the formation of suitable learning environments for these children, using suitable learning strategies in educational environments and meeting the educational needs of these children is necessary. It is of great importance for teachers to recognize gifted students. For that reason, the present study aims to provide the meaning of the term “gifted child” by asking teachers who work at middle and high schools in different fields. In the present study, content analysis was used based on qualitative data analysis. The study group of the research consisted of 300 teachers working at middle and high schools. From three open-ended questions, the answers of an open-ended question “Can you explain the term ‘gifted child’?” were analyzed. The answers obtained from teachers were grouped under 6 themes as follows: Creativity features, academic features, personality features, physical features, social features and congenital features.

**Key words:** Middle school and high school teachers, giftedness, perception.

### INTRODUCTION

It is a known fact that development and modern civilization of a country are due to the fact the the human resources are used productively. For that reason, it is necessary to discover and educate gifted children properly because they are the locomotive power in the developing process of humanity (EraslanCapan, 2010), are responsible for societies’ development and provide competitive advantage (Ozmen and Komurlu, 2013). These are the responsibilities of the modern educational system (EraslanCapan, 2010; Senol, 2011).

The characteristics of gifted children should be well known well for them to develop, to be useful to the

society and to discover their capacity. The recognition of gifted children by people who are interested in the education of children is very important to obtain healthy development and get to the top! (Senol, 2011). If gifted children are not well discovered and trained timely, it may lead to irredeemable losses for the society. Also, the educational policies in Turkey give importance to development programmes for big groups, with sole target on discovering common abilities. However, in this case, gifted children are neglected. The educational policies are against this negative aspect and see it as an indispensable obligation of all societies (Ozmen and

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Komurlu, 2013).

The field of gifted education is a universally accepted reality that some learners demonstrate outstanding performance or potential for superior performance in academic, creative, leadership, or artistic domains compared to their peers (Renzulli, 2012). The intelligence level above average generally seen as academic achievement and creativity is the first signal. Besides, intelligence, gifted children have special development in one or more fields such as drama, music, art, leadership (Karasu, 2010).

There are many different ideas about the characteristics of gifted students. Some ideas about their characteristics far from reality are that gifted students are so lucky, school works are so easy for them, they do excellent works and do not slog on their works. The reflection of the composition of these kinds of ideas to the education of gifted children has been in different types. For example, the idea that gifted students do not need help and they can learn themselves can give rise to neglect of educational services needed by the students. That is why students that do not receive educational services fall behind their potentials (Karasu, 2010).

Gifted students reveal themselves through attitudes, tendencies and routines. Gifted students ask prospective questions and important questions that can be formulized precisely and apparently. They gather and evaluate existing knowledge by using inferences in their comments. They test them by suitable criteria and standards and get well designed results and solutions. They communicate with others effectively and produce solutions to different problems (Kelemen, 2010). Because of their high intelligence level, they pay attention to mental operations and their cognitive self-consciousness is so high (Narimani and Mousazadeh, 2010).

Gifted students use their endless energy to reach their goals. They are efficient both mentally and physically (MEGEP, 2007). The most important characteristic of gifted students is their learning speed. These kinds of students learn to talk, read and write at an early age compared to their peers. They want to learn new things consistently with their grasping wonders (Karakurt, 2009). According to the research results of Terman, the gifted individual is gifted in science tests, physically healthy, successful at school, good at reading, learning language, mathematics, science, literature and art. But they have little differences at counting, enunciating and history science. They have a large knowledge area that is rich and complex. They have personality traits of honesty, faithfulness, stability and naivety (Taller, 2004).

The self-conception of gifted children is more developed than their peers. They are popular among their friends. They play with children bigger than themselves. Compared with other children, they have less school indiscipline, have no crime and aggressive behavior. There are researches showing that the position of gifted students is satisfying in terms of mental health and social adaptation (Aktepe and Aktepe, 2009). Gifted students

have upper level thinking capacity. Also, it is known that gifted students make extraordinary connections between different thinking systems, events, states or knowledge, and by enjoying, they have intense interests in scientific complications and problems special to disciplines. Most of them have desire to contribute to solving problems and creativity in their talented areas. Generally, they need less time for learning, because they develop in the learning of new knowledge and solving problems compared with other students. Also, they prefer to independent, to be included in decision mechanism and to mark learning route in view of their talents (Sak, 2009).

Teachers have first degree responsibility for determining gifted students. For teachers to be able to understand the differences of these kinds of students depends on having knowledge about their characteristics and approaching them with a positive perspective (EraslanCapan, 2010). For the different characteristics of gifted students to be known is of importance in order to form policies aimed at these individuals (Levent, 2012). Teachers have an indispensable role in the education of gifted and talented students. Teachers should have a well-developed conception of giftedness and a full understanding of the characteristics and the special needs of gifted and talented students so that they can facilitate effective identification and education. Teachers should know who gifted students are and what characteristics they have in order to have a well-developed gifted conception. Their understanding of giftedness and definitions of giftedness have important influences on their nomination decisions and classroom practices. It can also be concluded that education program given to gifted students would affect, directly or indirectly, the fulfillment of their potentials (Kaya, 2015).

Teachers' insufficient and wrong knowledge about gifted students is an indicator that they are unable to direct students to institutes of special education or out of school programs (Akar and Akar, 2012). For children to thrive in today's society, they must be educated beyond simple literacy. A solid education is a necessity for gifted and "potentially gifted" students to realize their full potential. After all, the gifted children of today will be the leaders of tomorrow in medicine, business, politics, research, arts, and beyond (Fisher, 2013).

There are more needs to be done to encourage homeroom teachers to better understand gifted children through training programs (Chung, Kim, Lee and Park, 2013). Increasing parents' and teachers' awareness will increase the quality of identification. With effective teachers analyzing talents more accurately, identification will be enhanced and recognized as being important throughout one's lifetime (Sahin, 2013). As the process of identifying gifted students grows ever more dependent upon teacher recommendation, it is very important to understand what perceptions teachers hold of gifted students and what experiences have shaped those perceptions (Dyess, 2012).

In EraslanCapan (2010)'s research, the metaphoric

perceptions of the teachers in the research are categorized as follows: 1. Showing high performance, 2. Trying to develop in insufficient conditions, 3. Needing suitable education, 4. Mysterious and needing effort for understanding, 5. Valuable, 6. Open to be controlled and to be directed, 7. Foreseeing and giving direction to the future, 8. Making research and looking differently at events, 9. Seeming differently from their peers, 10. Having high capacity, 11. Productive, 12. Creative, 13. All-round. According to Kurnaz (2009), gifted students make positive contribution to the climate of the class. Primary school teachers have no information about the characteristics of gifted students. Also, gifted students have some problems such as being boring at class, being accused of talking too much, finding no chance to share interesting matters, found it odd when given wrong answers to questions.

In the research of Levent (2011), according to the teachers of Science Art Center the socio-emotional characteristics of gifted students are as follows: The leadership side of them is strong. They are very interested in social events. They like spending their time with people older than them. They have a developed sense of fairness. They are so mature than what is expected of them. They say their ideas freely. They have strong emotions and feelings. In the research made by Kildan (2011), preschool teachers state that gifted children are gifted from their peers, they are curious, researcher and creative; they have high self-confidence and have gifted speaking and understanding ability. Also a greater part of the teachers think that gifted children need special education. In Akar and Akar (2012)'s research teachers think that gifted students are different. It means that teachers characterised gifted students as different from normal students. Also teachers think that gifted students are curious, productive, creative, asocial, hyperactive, diffident and gifted students have behavioral problems.

In the research of Olthouse (2014) studied with 124 preservice teachers, they completed the phrase "a gifted student is \_\_\_\_\_" using a metaphor and then explaining their choice of metaphor. Qualitative metaphor analysis determined that preservice teachers conceive giftedness as rapid memorization of content knowledge and show demonstrations of achievement. They believed that excellence is rare and that intelligence is generalizable. Responses were mixed as to whether giftedness is a natural state of being or a process of becoming gifted. There was very little evidence to suggest that preservice teachers focused on the motivational aspect of talent development or the notion that gifted students are likely popular with their peers. In the research of Ozsoy (2014), it was seen that the teachers of Science-Art Center, perceived the term "gifted student" as showing high performance, needing proper education, making an effort to understand, valuable, seeming different from their peers and all round. The gifted and talented are often

also discussed as problem solvers in the interest of national welfare and of the hoped-for development and economic success of individual nations (Persson, 2013).

In Bishofberger (2012)'s research teachers characterized the characteristics of gifted students as *Textbook Indicators*, *Teacher Pleasing* characteristics, *Non conforming* characteristics and *Incongruent* characteristics. The characteristics such as "Is self-motivated," "Has a keen sense of humor," "Uses expressive speech," "Has a high interest in school," etc. might commonly be found in textbooks as indicators of giftedness. These characteristics suggest positive classroom behaviors. As a result, Factor 1 was referred to as *Textbook Indicators*. The characteristics such as "Does not seem interested in school," "Often does not bring in homework," "Gives unexpected, sometimes 'smart-aleck' answers," "Questions rules," and "Is unmotivated," etc. might pose a challenge to a teacher. Factor 2 was categorized as *Nonconforming*. The characteristics such as "Behaves well," "Learns easily and quickly," "Is well-liked by classmates," etc. suggest an easy, affable student. Factor 3 was labeled as *Teacher Pleasing*. The characteristics such as "Prefers not to work independently," "Is a follower," "Has a limited vocabulary," and "Cannot work independently," etc. suggest a need for social affiliation and lower verbal ability. Factor 4 was categorized as *Incongruent*.

In the research of Altintas and Ozdemir (2014), the opinions of teachers about giftedness and the characteristics of gifted students were taken. Teachers' answers for the open ended questions are under 7 themes: being different from peers, academic achievement, high capability in certain areas, creativity, personal traits, development features and congenital. When we analyzed the categories under these themes, there were 2 categories under 'being different from peers', 15 categories under 'academic achievement', 2 categories under 'high capability in certain areas', 5 categories under 'creativity' theme, 18 categories under 'personal traits' theme, 6 categories under 'development features' theme and 2 categories under 'congenital' theme. In the research of Altintas and Ilgun (2015), the opinions of parents about the definition of gifted children were taken. The answers given by parents were grouped under 3 themes: Academic features, Personal features and Creativity.

In El Khoury (2014)'s research, the study aimed to explore current elementary teachers' perceptions of the attributes of gifted students. The results revealed various definitions from each school. A definition for giftedness was constructed from the findings which included a combination of three parts: High intellectual ability, high academic performance, and social intelligence. High intellectual ability includes high logical thinking, and that the gifted student's scores on the report cards should be the highest among the class. High academic performance means that gifted students excel in one or more



academic subject area. Giftedness also encompasses social intelligence, which means that the student should be a natural leader, take charge of small groups, and be able to deal with real life situations that are mainly applicable in Lebanon, for example, the ability to bargain for better prices, and cutting in line to get the service or product faster.

In the research of Kaya (2015), ten teachers working in the USA public schools were interviewed to explore their conceptions of giftedness. As the results of the research, participants reported various characteristics of gifted students. "Questioning", "thinking different", "thinking creative", "above level", "having different learning style", "quick" or "faster", "unique", "curious", "sensitive", and "coping with problems" are some of the common characteristics stated by all participants. Some participants also described their gifted students as "smart", "learn easily", "having different and original perspectives", "sometimes alone", "dealing with social issues", and "preoccupied".

### **The purpose, importance and problem of the study**

The purpose of this research is to present the the term of "gifted child" from the point of view of teachers who work at middle schools and high schools. Also This study is of importance to get more information about gifted students and to learn their different characteristics. That is why it can be easy to organize educational environments according to gifted students and their characteristics. In this way the educational needs of gifted students can be met by families of these children and educators. The selection of these children and giving of good guidance to these children are of great importance. For this reason, it is important to know the key characteristics of gifted students. The role of teachers in determining gifted students, selecting gifted students and designing educational environments for them is important. By moving from these expressions, we can state the problem sentence of the study as 'what is the term of "gifted child" from the point of view of the teachers?

## **METHODOLOGY**

### **Research model**

The content analysis from qualitative data analysis approaches was used in the present paper. The aim of the content analysis is to reach concepts and correlations which can explain the gathered data. That is why it is necessary to conceptualize the gathered data previously, and afterwards organize them in a logical way to determine the themes that are explaining the data. In qualitative studies, the data are analyzed in 4 phases such as coding the data, finding themes, organizing themes and codes and defining and interpreting the findings (Yıldırım and Simsek, 2008).

### **The study group**

The research was carried out in the spring semester of 2013-2014

academic year. The research group of the study consisted of 300 teachers from middle and high schools. 17 physical education teachers, 11 Science and Technology teachers, 11 physics teachers, 11 chemistry teachers, 11 biology teachers, 9 information technologies teachers, 26 religious culture and moral knowledge teachers, 56 Turkish language teachers, 44 English teachers, 10 geography teachers, 25 social sciences teachers, 30 guidance counselors, 39 mathematics teachers participated in the study. While determining the participants, convenience sampling was conducted on account of some practical reasons such as ease of transportation, implementing the study rigorously and ease of communication.

### **Data collection tool**

'Teacher view form' which was prepared by the researchers for the teachers was used within the scope of this study. 'Teacher view form' is composed of 3 open ended questions. The questions are as follows: "Can you explain the term "gifted child?", "What have been done for the education of gifted children in Turkey?", "What can you suggest for the education of gifted children? For validity of the view form, in the direction of the idea of an expert, some changes were made and the form was finalized. From the view form, only the question, 'Can you explain the term "gifted child?" was evaluated because the researchers want all the questions to be examined in details.

### **Data analysis**

The data collected from the open-ended question, "Can you explain the term "gifted child?" included in 'Teacher view form' were analyzed qualitatively. The content analysis was used in qualitative data analysis. After the answers given by the teachers to the question were categorized, they were grouped under different themes. The obtained categories and themes were presented in the form of frequency (f) and percentage (%) in tables and the necessary evaluations were made accordingly. The data gathered from 300 teachers were analyzed. While analyzing the data, a coding process was carried out by the researchers based on the idea of an expert. In the coding process, the reliability of the view form was calculated by the method of double coding of Miles and Huberman (1994). Firstly, the answers of the teachers were coded by one of the researchers. 30 forms which include all the codes obtained from the analysis of all forms were selected and they were coded by the other researcher. The reliability of the analyzed question was 0.86. Because the reliability value is higher than 0.70, we can say that there is a compliance between the scorers.

## **RESULTS**

When the tables are analyzed, it is seen that answers of the open ended question were classified under 6 themes. They are "Creativity features, Academic features, Personality features, Physical features, Social features, Congenital features". In Table 1, it is seen that teachers' categories under "Creativity features" theme are "curious, original, creative, extraordinary, productive, sees nobody else, larger imaginary world, thinking differently". Teachers think that gifted students see details that other students do not see, gifted students have larger imaginary world and crazy ideas, gifted students are so curious, they produce new patterns, inventions and

**Table 1.** Themes and categories obtained from the answers of open ended question

Themes	Categories	f	(%)
Creativity Features	Curious	250	83
	Original	200	66
	Creative	230	76
	Extraordinary	273	91
	Productive	198	66
	To see nobody sees	134	44
	Larger imaginary world	263	87
	Thinking differently	213	71

**Table 2.** Themes and categories obtained from the answers of open ended question

Themes	Categories	f	(%)
Academic Features	The student profile for whom the regular education is boring	192	64
	More capable than their peers	245	81
	Needing suitable education for their features	189	63
	The intelligence level is on the average	290	96
	Getting success by little working	196	65
	Telling or understanding what they read	121	40
	Establishing relationship between the objects	113	37
	Being talented on information processing	87	29
	Having digital intelligence	198	66
	Successful at every field	248	82
	Having advanced level of speaking ability and extensive vocabulary	233	77
	Having advanced level of problem solving ability	224	74
	Having advanced level of ability in one or more fields	193	64
	Using every field of brain effectively	134	44
	Having different type of learning styles	112	37
	Understanding discrete things rapidly	175	58
	The perception level is different from their peers	231	77
	Rapid understanding of the relations between the terms	93	31
	Having own questions and solutions	82	27
	High capacity in terms of analyzing and synthesizing	145	48
	Having a good memory	290	96
	Producing project by deducing from events and conditions	43	14
	Understanding, learning and applying rapidly	102	34
	Rapid reasoning than their peers	167	55
	Working a lot with a few effort in a short time	169	56
	Having knowledge with the except of ordinary knowledge	129	43
	Solving events and problems more analytical	93	31
	Multiple thinking	95	31
	Being in need of special education	214	71

estimations, they ask many questions, they are extraordinary, they think differently from other people, they look for and find different solution, they differ from society, they produce original products and are creative and productive in academic and social fields.

In Table 2, it is seen that teachers' categories under

"Academic features" theme are "regular education is boring to them, are more capable than their peers, need education suitable for their features, their intelligence level is more than average, get success by little effort, tell or understand what they read, establishing relationship between objects, are talented on information processing, have

**Table 3.** Themes and categories obtained from the answers of open ended question

Themes	Categories	f	(%)
Personality Features	Asking too many questions	275	91
	Having different emotional characteristics	167	55
	Performing a very mixture psychological state not seen directly	68	22
	More mature than their peers	197	65
	Dominant	243	81
	Having trouble in focusing	168	56
	Forcing the present conditions	123	41
	Showing difference in expressing themselves	117	39
	Stubborn	72	24
	Having different perceptions	98	32
	Having more confidence	154	51
	Having more awareness	179	59
	Prescient	192	64
	Contacting between the events	145	48
	High selective perception	199	66
	Knowing to listen	32	10
	Careful	173	57
	Deciding fastly	190	63
	Thinking not focusing on problem but focusing on solution	49	16

digital intelligence, successful in every field, have advanced level of speaking ability and extensive vocabulary, have advanced level of problem solving skill, have advanced level of ability in one or more fields, use every field of brain effectively, have different type of learning styles, understand discrete things rapidly, their perception level is different from their peers, rapid understanding of the relations between terms, have their own questions and solutions, high capacity in terms of analyzing and synthesizing, have a good memory, produce project by deducing from events and conditions, understand, learn and apply rapidly, rapid reasoning than their peers, work a lot with little effort in a short time, have knowledge beyond ordinary knowledge, solving problems more analytically, have multiple thinking, need special education". In this theme, teachers think that gifted students know more things than their peers, they have a developed verbal and numerical intelligence and retentive memory, they have a brilliant intelligence and their IQ level is higher than their peers, they have faster understanding, interpretation, thinking, problem solving ability than their peers, their cognitive and affective abilities are strong and advanced, they succeed in all activities compared to their peers and they do not need teachers in some aspects, they comprehend things that their normal peers do not comprehend, they are different from their peers in terms of their interests and abilities, they need special education.

In Table 3, It is seen that teachers' categories under "Personality features" theme are "Asking too many questions, Having different emotional characteristics,

More mature than their peers, Dominant, Having trouble in focusing, Forcing the present conditions, Showing difference in expressing themselves, Stubborn, Having different perceptions, Having more confidence, Having more awareness, Prescient, Contacting between events, High selective perception, Knowing how to listen, Careful, Deciding fastly, Thinking not focusing on problem but focusing on solution". In this theme, teachers think that gifted students see the details that the others do not see, gifted students are interrogator, they have high self confidence, their behaviours and ideas are different from other people, they think differently from their peers, they are leaders, they see differently from others, they are stubborn, they see the the results of problems easily, and they find different solutions to problems.

In Table 4, it is seen that teachers' categories under "Physical features" theme are "being different physically from their peers, Finishing the developmental period fastly, Performing different behaviours, Abnormal in their movements, Hyperactive". In this theme, teachers think that gifted students perform extraordinary behaviours in the society, they progress quickly, they are hyperactive, they perform sudden behaviours, they are physically different from their peers, they develop fast as children.

In Table 5, it is seen that teachers' categories under "Social features" theme are "Being in high level in terms of social aspects, not keeping up with society and the rules of society, Creating awareness, Leaders, The weakness in human affairs". In this theme, teachers think that class and environment are not attractive for gifted

**Table 4.** Themes and categories obtained from the answers of open ended question.

Themes	Categories	f	(%)
Physical features	Being different physically from their peers	213	71
	Finishing the developmental period fastly	254	84
	Performing different ways of behaviour	113	37
	Abnormal in their movements	125	41
	Hyperactive	289	96

**Table 5.** Themes and categories obtained from the answers of open ended question.

Themes	Categories	f	(%)
Social features	Being in high level in terms of social aspects	169	56
	Not keeping up with society and the rules of society	187	62
	Creating awareness	68	22
	Leader	254	84
	The weakness in human affairs	175	58

**Table 6.** Themes and categories obtained from the answers of open ended question.

Themes	Categories	f	(%)
Congenital Features	God's gift	94	31
	Genetic	45	15

students, gifted students cannot fit into the school environment, they live incongruity, they are social, they do not attend the society, they are different socially from their peers.

In Table 6, it is seen that teachers' categories under "Congenital" theme are "God's gift, Genetic". In this theme, teachers think that gifted students are intelligent because their mother and father are intelligent. The genes passing them from their mother and father make them intelligent. Also, some of the teachers claim that gifted students are specially selected children. They think that giftedness is a gift of God.

## Discussions

Teachers' answers for the open ended question are grouped under 6 themes. They are; Creativity features, Academic features, Personality features, Physical features, Social features, Congenital. When we analyzed the categories under these themes, there were 8 categories under 'creativity features', 29 categories under 'academic features', 20 categories under 'personality features', 5 categories under 'physical features' theme, 4 categories under 'social features' theme, 2 categories under

'congenital' theme. The categories under the theme of Creativity features are "curious, original, creative, extraordinary, productive, see what others do not see, larger imaginary world, thinking differently".

The categories under the theme of academic features are "education is boring to them, the more capable than their peers, Needing education suitable for their features, intelligence level is on the average, Succeed by little effort, Tell or understand what they read, Establishing relationship between the objects, Being talented on information processing, Having digital intelligence, Successful in every field, Having advanced level of speaking ability and extensive vocabulary, Having advanced level of problem solving ability, Having advanced level of ability in one or more fields, Using every field of brain effectively, Having different type of learning styles, Understanding discrete things rapidly, The perception level is different from their peers, Rapid understanding of the relations between terms, Having their own questions and solutions, High capacity in terms of analyzing and synthesizing, Having a good memory, Producing project by deducing from events and conditions, Understanding, learning and applying rapidly, Rapid reasoning than their peers, Working a lot with a little effort in a short time, Having extraordinary

knowledge, Solving problems more analytically, Multiple thinking, in need of special education”.

The categories under the theme of Personality features are “Asking too many questions, Having different emotional characteristics, having mixed psychological state not seen directly, More mature than their peers, Dominant, Having trouble in focusing, Forcing the present conditions, Showing difference in expressing themselves, Stubborn, Having different perceptions, Having more confidence, Having more awareness, Prescient, Contacting between events, High selective perception, Knowing how to listen, Careful, Deciding fastly, Thinking not focusing on problem but focusing on solution”. The categories under the theme of Physical features are “being different physically from their peers, Finishing their developmental period fast, Abnormal in their movements, Hyperactive”. The categories under the theme of Social features are “Being in high level in terms of social aspects, Not keeping up with society and the rules of society, Creating awareness, Leaders”. The categories under the theme of Congenital are “God’s gift, Genetic”.

## Conclusions

Teachers think that gifted students show high performance in academic, personal, physical, social and creative activities. Teachers think that gifted students need education suitable for their features. They are also in need of special education. Teachers think that gifted students are different physically from their peers. They perform different behaviors. They are abnormal in their behaviours. That is why to understand them, a person needs special effort. Some of the teachers claim that gifted students are specially selected children. They think that giftedness is a gift of God. Gifted students are successful in every field. The intelligence level of gifted students is on the average. Gifted students succeed with little effort. These sentences mean that gifted students are valuable. Teachers think that gifted students are prescient. Teachers think that gifted students think differently. They ask too many questions. They have different perceptions. Teachers think that gifted students are physically different from their peers. They are hyperactive. Their perception levels are different from their peers. They think differently. From all these findings we can say that our study is parallel with Eraslan Capan (2010) and Ozsoy (2014).

Teachers think that regular education is boring for gifted students, which is parallel with that of Kurnaz (2009). Teachers think that gifted students are leaders and prescient. They are more mature than their peers. They have different emotional characteristics and are more confident. That is parallel with Levent (2011). They have rapid understanding of the relations between terms. This is in line with the study of Kıldan (2011).

In line with this study, Akar and Akar (2012) state that gifted children are abnormal in their movements,

hyperactive, do not need regular education. Olthouse (2014) state that gifted students have good memory, they understand, learn and apply rapidly, they show demonstrations of achievement in terms of academic, personal, social and physical characteristics. From these characteristics we can say that gifted students are good problem solvers. Also these characteristics are of great importance for national welfare and development and economic success of individual nation. This corroborates Persson (2013)’s study.

The present study is parallel with the study of Bishofberger (2012). The studies of Altıntaş and İlgun (2015), Altıntaş and Özdemir (2014) are parallel with the present study in terms of the themes got in both studies. El Khoury (2014) dealt with the combination of three parts: High intellectual ability, high academic performance, and social intelligence. These results are parallel with our results. In the research of Kaya (2015), the characteristics mentioned such as “Questioning”, “thinking different”, “thinking creatively”, “above level”, “having different learning style”, “quick” or “faster”, “unique”, “curious”, “sensitive” and “coping with problems”, “smart”, “learn easily”, “having different and original perspectives”, “sometimes alone” are parallel with the characteristics in the present study. The following suggestions are given in this study:

## Suggestions

How much the teachers from different fields recognize and define gifted students can be researched. Thanks to the results from these researches, inservice trainings can be organized for the teachers from different fields. Thus, the awareness of the teachers can be increased. Preservice teachers are also important for the future education of gifted students. That is why the awareness of pre service teachers can be searched. The researches ever made like the present study can be brought together to describe giftedness. Also, considering the characteristics presented in these studies, similar or different characteristics mentioned in the researches are presented. Thus, new characteristics exhibited by gifted students can be learned and educational environments can be organized for different gifted students.

## Conflict of Interests

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# Students and instructors opinions about piano instruction\*

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This study examined the opinions of the students and piano instructors in the Turkish Education Faculties' Fine Arts Instruction Departments' music instruction programs about piano instruction. The study data were collected using a questionnaire administered to the piano instructors and the students who took lessons from them. The study results indicated that the piano lesson should be included in the whole undergraduate process to achieve the target behaviors. Regarding the content of piano lessons, the piano instructors emphasized that the lesson content should be increased to improve piano playing skills, develop deciphering, teach technical and musical skills, improve its usability in the teaching profession, impart a broader piano instruction, and teach students about the piano repertoire of all periods in history. The study found that the instructors and students also emphasized the importance of a piece's harmonic structure, tonality, and tonal context as well as its form, sentences, divisions, and musical language regarding the improvement of technique and musicality when studying musical works (for example, etudes, sonatinas and sonatas). Another study finding showed that the most difficult lessons, according to the instructors and students, were chord clusters with three and four consecutive notes, using two techniques with two hands (for example, legato with one hand and staccato with the other) and finger numbers.

**Key words:** Music instruction, music instructor, piano instruction, piano instructor.

## INTRODUCTION

Education plays a major role in directing and advancing societies. Based on the description of the term "education," music instruction is described as "teaching individuals particular musical behaviors through their own experiences in a purposeful and methodical way, or individuals' process of changing, transforming and improving musical behaviors through their own experiences in a purposeful and methodical way" (Uçan,

1994). In music instruction, pre-service music teachers learn how to distinguish musical sounds and how to hear them in ear training, how to use their voices in the most effective and accurate way in voice training, and learn about their instruments in addition to the necessary playing skills in instrument training.

Instrument training requires students to work carefully and in a planned and disciplined way, and make

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sacrifices. It is important to convey the discipline and patience necessary to play an instrument as part of instrument instruction so that students proceed with the correct technique (Çilden, 2003). Instrument training is one of the most essential and meaningful dimensions of music instruction at all levels, whether general, amateur or for professional purposes. Instrument training is an essential part of both general and professional music training, and it has different functions in music instruction. These functions are enriching and complementary dimensions (Uçan, 1993). Instrument training enables individuals to play their instruments more effectively, favorably and correctly.

Piano instruction, a part of instrument instruction, has an important place in institutions that train music teachers. With piano instruction, individuals improve themselves by learning about deciphering, musical hearing, harmony and form, some of the most important elements of music. Piano is both a solo and an accompaniment instrument. Thus, piano is both an area of study and an effective teaching tool as it can be used as an accompanying instrument as well as polyphonically, and also has a large literature (Yazıcı, 2013).

The content of the piano course consists of "technical exercises and studying, examples of works from Turkish and global composers, examples of instructional music, piano literature, and teaching and learning techniques in school music" (YOK, 1998). Piano education-one of the parts of instrument education in the institutions training music lecturers-has a significant place. Piano course is a compulsory lesson which is taken in both terms of first three years in the Faculties of Education, Department of Fine Arts Education, Department of Music Education. In addition, with the new revised program, piano course will be provided during the whole undergraduate program, in other words for four years. Piano is one of the major and indispensable instruments of music instructors thanks to both the broadness of its sound structure and ability to be used in different musical fields, as well as its importance in listening and understanding music, teaching playing skills and improving polyphony. Piano is an important instrument in training music teachers. Pre-service music teachers should be able to play the piano effectively in their future professional lives (Kutluk, 2001).

Pre-service music teachers will have learned the piano-playing skills required by music instruction both during their own education and in their future teaching process. Thus, piano is an effective teaching tool in institutions that train music teachers (Bayraktar, 1989). In the institutions training music teachers, though, the primary goal of piano instruction is to improve students' piano-playing skills, which indicates that piano instructors have the greatest responsibility to help students learn and gain experience about what methods to use in their individual practices and how to use them (Babacan, 2014). In this respect, the instructors who train music teachers are supposed to have a deep understanding that will help

them tirelessly guide their students with meaningful, realistic and creative activities based on musical principles (Elgersma, 2012). The piano-playing skills that should be taught to individuals in piano instruction are supposed to include both technical and musical development.

*Even an instrumental work with the smallest dimension includes the same musical elements and artistic ideas found in great works. Thus, introducing students to the concepts and expression of the art of music will be the key that enriches their musical experiences and transforms difficult skills, like typing the music notes read to them, into an enjoyable artistic activity (Montparker, 1998).*

In this context, this study is important since it will demonstrate students' and instructors' opinions about piano instruction. Since this study includes subjects focusing on both piano lessons' duration and content determined by the curriculum and strengthening students' technique and musicality when studying different works, it will contribute to upcoming generations by putting forward students' opinions about the piano studies they have more difficulty with. In this respect, this study will present both students' and piano instructors' opinions in a comparative manner.

## METHODOLOGY

### Study design

This study aimed to receive teachers' and students' opinions about piano education. In this framework, the dependent variable of the study is teachers' and students' opinions about piano education. Their opinions about piano education were analyzed in context of the study content. Study design is the arrangement of conditions required for the collection of the data that fit the purpose of the study as well as for their analysis. This is a survey that aims to describe "Students' and instructors' opinions about piano instruction" as well as the current situation. In other words, this study is based on the model that determines the current situation (Karasar, 2005).

### The population and sample of the study

The population of the study included the piano instructors and their students in the Turkish Education Faculties' Fine Arts Instruction Departments' music instruction programs. Sample of the research consists of the piano (course) lecturers (n=14), who were lecturing in 2006 to 2007 school year and selected from the Faculties of Education, Department of Fine Arts Education, Department of Music Education of Dokuz Eylul University, Balıkesir University and Atatürk University in Turkey and students (n=142) taking these courses."

### Data collection tools

Student Questionnaire Including the Views of Students Towards Piano Course" and "Lecturer Questionnaire Including the Views



**Table 1.** The distribution of the students by their determination of the process length required for the piano lesson to teach target behaviors (n=142).

Variable	f	Percentage
2 years	2	1.4
3 years	18	12.6
4 years	98	69.0
Depends on the student (for example, on his or her hard work, ambition, talent)	8	5.6
The number of weekly lessons should be increased	16	1.2
Total	142	100.0

Towards Piano Course”, which were developed by the researcher, were used as the data collection tool in this research. Therefore, four separate questionnaires were administered to both piano lecturers and students to specify the views towards the piano education in this research. The same questions were asked to the piano lecturers and students. In this research, the following questions were asked to the piano lecturers and students:

1. What is the Required Process Length to Teach Target Behaviors in the Piano Lesson?
2. Does the Piano Lesson Have Sufficient Content?
3. What Is the Ranking by Importance of the Subjects That Focus on Strengthening Technique and Musicality in Music Pieces (e.g. Etudes, Sonatinas and Sonatas)?
4. What Is the Ranking by Importance of Piano Studies That Are More Difficult?

In this research, the questions developed by the researcher, including the opinions of both piano lecturers and students were open-ended questions and question types with regard to rating. The first and second questions included open-ended questions while the third and fourth questions included questions with regard to rating. Blanks were left under the open-ended questions for their answers. To answer the questions with regard to rating, the participants were asked to note the options in order of importance.

The researcher consulted the experts about the questions before conducting the validity study. Based on the expert opinions, the researcher made the necessary revision and finalized the questions about opinions. The students were asked to fill out the "student opinions about piano lesson" questionnaire in a piano lesson. The questions inquiring their opinions about piano lesson included open-ended questions as well as those focusing on rating. The researcher left blank spaces under the open-ended questions to be used for answers. For the questions focusing on rating, the students were asked to arrange the given choices by their importance level.

Piano instructors' opinions about these lessons were obtained as written statements. Then the researcher transcribed the verbal data and formed texts. The verbal data were analyzed using qualitative data analysis techniques. The responses given by the students and instructors were studies using content analysis, a qualitative analysis method. The encoding created by the content analysis was combined in specific categories and classified afterwards. Instructors' and students' responses to the open-ended questions about the piano lesson were categorized based on their meaning and the responses close in meaning were grouped together.

#### Data analysis techniques

The study data were analyzed using frequencies (f) and percentages (%), which are descriptive analysis methods. The

qualitative data consisted of the open-ended questions in the questionnaire. The researcher categorized, analyzed and tabulated the responses to these questions.

#### FINDINGS

The researcher analyzed instructors' and students' responses on the questionnaire forms. In the tables, the common responses by the students and instructors were marked with (\*).

#### What Is the Required Process Length to Teach Target Behaviors in the Piano Lesson?

The length of the process required to learn the target behaviors was determined based on the responses by the students and instructors to the questions, and given in Tables 1 and 2, respectively.

It is notable that students' and instructors' opinions about this issue are consistent. It was concluded that the piano lessons should be pursued throughout the entire undergraduate education process. Of 14 instructors in the study sample, 12 (85.7%) stated that students should take piano lessons for four years, and that it is the instrument they will use most in their future professional lives. It is notable that students' and instructors' opinions about this issue are consistent. Of 14 instructors, 12 (85.7%) stated that the piano lesson should be included in the entire education process, that is, for four years to teach the target behaviors.

#### Does the Piano Lesson Have Sufficient Content?

The students' and instructors' opinions about lesson content were presented in Tables 3 and 4, respectively. A majority of the students 101 (71.1%) said that the piano lesson had sufficient content. It was determined that the students who said the content of the lesson should be increased comprehended the necessity of this lesson and realized that the knowledge they learned in this lesson was important. Contrary to the students, 10 of 14 instructors (71.4%) said that the content of the piano lessons should be increased. Those who said that the

**Table 2.** The distribution of the instructors by their determination of the process length required for the piano lesson to teach target behaviors (n=14).

Process	f	Percentage
2 years	-	-
3 years	-	-
4 years	12	85.7
Depends on the student (for example, on his or her hard work, ambition, talent)	1	7.1
The number of weekly lessons should be increased	1	7.1
Total	14	100.0

**Table 3.** The distribution of students by their opinions about the sufficiency of the piano lesson (n=142).

Situation	f	Percentage
It is sufficient	101	71.1
It should be reduced	6	4.2
It should be increased	35	24.6
Total	142	100.0

**Table 4.** The distribution of the instructors by their opinions about the sufficiency of the piano lesson's content (n=14).

Situation	f	Percentage
It is sufficient	4	28.6
It should be reduced	-	-
It should be increased	10	71.4
Total	14	100.0

content was sufficient claimed that:

*They learned the necessary information  
It depended on students' regular work, level and ambition  
Piano was not their only lesson and they also take time  
for other lessons*

Those who said that the content should be increased claimed that:

*\*The lesson has few course hours and little content  
\*Its usability in the profession of teaching is important  
\*It is necessary to improve piano-playing skills (get to  
know more musical works)  
The more I improve during the piano lesson, the more it  
will influence the other music lessons, and I will  
strengthen my knowledge through broader learning.*

Those who said that the content should be increased put forward these reasons:

*There are necessary technical and musical skills to be*

*taught*

*\*Its usability in the profession of teaching is important  
\*It is necessary to improve piano-playing skills (get to  
know more musical works)  
It is necessary to have a broader education and get to  
know the piano repertoire of different periods in history  
\*The lesson has few course hours and little content  
The students should improve their deciphering skills,  
which did not depend on memorizing, to enable them  
play new musical works on their own*

It is an important point that the opinions of the students and instructors who thought that the content of the piano lesson should be increased were consistent with each other. Regarding the sufficiency of the piano lesson's content, 10 of 14 instructors (71.4%) said that the content should be increased.

### **What is the ranking by importance of the subjects that focus on strengthening technique and musicality in music pieces (for example, etudes, sonatinas and sonatas)?**

Students and instructors arranged by importance the subjects that focus on strengthening technique and musicality in music pieces (for example, etudes, sonatinas and sonatas), and their responses were classified and presented in Tables 5 and 6, respectively.

As presented in Table 5, rank 1 indicates little importance while rank 8 indicates great importance in ranking technique and musicality subjects. In this section, 142 students ranked the importance of technique and musicality subjects in studying the music pieces assigned to them. The mean for each content piece was calculated by summing the given numbers and dividing the answer by the number of students. The smallest mean shows the highest level of importance. Based on this determination, the ranking of technique and musicality subjects by importance showed that the harmonic structure of the piece was at the eighth level (very important), the tonality of the piece and the tonalities it is included in was at the seventh level, the form and sentences of the piece was at the sixth level, the musical language of the piece was at the fifth level, musical expressions on the piece written by

**Table 5.** The distribution by importance of technique and musicality subjects according to the students (n=142).

Content	$\Sigma x$	$142/\Sigma x$
The period when the piece was composed	429	0.33
Background information about the composer	390	0.36
The tonality of the piece; the tonalities it is included in	813	0.17
Inhalation (breathing physically)	460	0.30
Harmonic structure of the piece	839	0.16
Form, sentences and divisions of the piece	756	0.18
Musical expressions written on the piece by the composer	701	0.20
Musical language of the piece (tonal, modal or atonal)	727	0.19

\* $\Sigma x$ : Total ranking of technique and musicality subjects by importance in studying music pieces.

**Table 6.** The distribution of technique and musicality subjects by importance according to the instructors (n=14).

Content	$\Sigma x$	$14/\Sigma x$
The period when the piece was composed	40	0.35
Background information about the composer	29	0.48
The tonality of the piece; the tonalities it is included in	94	0.148
Inhalation (breathing physically)	23	0.60
Harmonic structure of the piece	95	0.147
Form, sentences and divisions of the piece	85	0.16
Musical expressions written on the piece by the composer	64	0.21
Musical language of the piece (tonal, modal or atonal)	74	0.18

\*  $\Sigma x$ : Total ranking of technique and musicality subjects by importance in studying music pieces.

the composer was at the fourth level, inhalation (breathing physically) was at the third level, musical period of the piece was at the second level and background information about the composer was at the first level (little importance).

As presented in Table 6, rank 1 indicates little importance while rank 8 indicates great importance in ranking technique and musicality subjects in studying music pieces. In this section, 14 instructors ranked the importance of technique and musicality subjects in studying music pieces assigned to them. The mean for each content piece was calculated by summing the given numbers and dividing the answer by the number of instructors. The smallest mean shows the highest level of importance. Based on this determination, the ranking of technique and musicality subjects by importance showed that the harmonic structure of the piece was at the eighth level (very important), the tonality of the piece and the tonalities it was included in was at the seventh level, the form and sentences of the piece was at the sixth level, the musical language of the piece was at the fifth level, musical expressions written on the piece by the composer was at the fourth level, musical period of the

piece was at the third level, background information about the piece was at the second level and inhalation (breathing physically) was at the first level (little importance).

### What Is the Ranking by Importance of Piano Studies That Are More Difficult?

The responses by the students and instructors were classified and presented in Tables 7 and 8, respectively. As seen in Table 7, 1 indicates little importance and 9 indicates great importance in the ranking of the piano studies that students found difficult. In this section, 142 students ranked the content of the piano studies they found difficult from 1 to 9. The mean for each content piece was calculated by summing the given numbers and dividing the answer by the number of students. The smallest mean shows the highest level of importance. Based on this determination, the ranking by importance of piano practices that students found difficult showed that consecutive chord clusters including three and four chords was at the ninth level (very important), using two

**Table 7.** The distribution by importance of piano practices that students found difficult, according to the students \* (n=142).

Content	$\Sigma x$	$142/\Sigma x$
Difficulties related to finger numbers	757	0.18
Playing the passages including small values (16 or 32 notes) at fast beat	722	0.19
Pedal use	434	0.32
Being able to play the piece at its own unique beat	680	0.21
Using two different techniques with two hands (e.g. legato with one hand and staccato with the other)	902	0.16
Rolled chords (arpeggios)	702	0.20
Gamuts	622	0.23
Cadences	647	0.22
Consecutive chord clusters including three and four chords	923	0.15

\*  $\Sigma x$ : The total ranking of the piano studies that students have difficulty with by their importance.

**Table 8.** The distribution by importance of piano practices that students found difficult, according to the instructors \*(n=14).

Content	$\Sigma x$	$14/\Sigma x$
Difficulties related to finger numbers	68	0.205
Playing the passages including small values (16 or 32 notes) at fast beat	69	0.202
Pedal use	41	0.34
Being able to play the piece at its own unique beat	92	0.152
Using two techniques with two hands (e.g. legato with one hand and staccato with the other)	93	0.150
Rolled chords (arpeggios)	74	0.18
Gamuts	70	0.2
Cadences	41	0.34
Consecutive chord clusters including three and four chords	82	0.17

\*  $\Sigma x$ : The total ranking of the piano studies that students have difficulty with by their importance.

techniques with two hands (e.g. legato with one hand and staccato with the other) was at the eighth level, difficulties related to finger numbers were at the seventh level, playing passages with small values (16 or 32 notes) at high beat was at the sixth level, rolled chords (arpeggios) were at the fifth level, playing a piece at its own beat was at the fourth level, cadences were at the third level, gamuts were at the second level and pedal use was at the first level (little importance).

As seen in Table 8, 1 indicates small importance and 9 indicates great importance in the ranking of the piano studies that students found difficult. In this section, 14 instructors ranked the difficult piano studies by importance from 1 to 9.

The mean for each content piece was calculated by summing up the given numbers and dividing the answer by the number of instructors. The smallest mean shows the highest level of importance. Based on this determination, the ranking of the piano studies by importance indicated that using two techniques with two hands (for example, legato with one hand and staccato

with the other) was at the ninth level (very important), playing the piece at its own beat was at the eighth level, consecutive chord clusters including three and four chords were at the seventh level, rolled chords (arpeggios) were at the sixth level, gamuts were at the fifth level, playing the passages with small values (16 or 32 notes) at fast beats was at the fourth level, difficulties related to finger numbers were at the third level, cadences were at the second level, and pedal use was at the first level (little importance).

### The period required for the piano lesson to teach target behaviors

The researcher asked the students, "How much time is required for the piano lesson to teach target behaviors?" The most common response to this question by the students was four years (n=98). The most common response of the piano instructors (n=14) was also four years (n=12). The study results showed that both

students and piano instructors suggested that students take piano lesson for all four years of their music teaching education. They also claimed that long-term study will help learn students learn piano practices that they found difficult.

### Content of the piano lesson

Students' answers regarding the context of piano course, which are located at the top, are the expressions of 'sufficient' (n=101) and 'should be increased' (n=35). The researcher posed the same question to the piano instructors (n=14) as well. The instructors' most common responses were "It should be increased" (n=10), and "It is sufficient" (n=4). It was found that the explanations of students and piano instructors were different from each other. When stating that the content of the piano lesson was sufficient, a majority of students said that:

*They learned the necessary information  
It depended on students' regular work, level and ambition  
The piano lesson was not their only lesson, and they needed to have time for other lessons, too.*

The students and instructors claiming that the content of the piano lesson should be increased said that was because:

*\*The lesson had little content and few hours  
\*Its usability in the teaching profession was important  
\*They needed to improve their piano-playing skills (and learn about more music pieces)  
\*The more they improved their piano skills, the more this would influence their achievement in other lessons, and help them strengthen their knowledge through broader learning*

In fact, the increase in the duration of piano lessons should be consistent with the content of the lesson. On the other hand, the lesson subjects will be intense and complicated. The increase in content and weekly hours of the piano lesson will teach the subjects in a longer timeframe and enable students to learn more comprehensively.

### The ranking by importance of subjects that strengthen technique and musicality

Below are the optional answers to the question "Rank by importance the subjects aimed at strengthening technique and musicality."

*The period when the piece was composed  
Background information about the composer  
The tonality of the piece; the tonalities it is included in  
Inhalation (breathing physically)  
Harmonic structure of the piece*

*Form, sentences and divisions of the piece  
Musical expressions written on the piece by the composer  
Musical language of the piece (tonal, modal and atonal)*

The subjects given higher ranks by the students were: Harmonic structure of the piece, tonality of the piece, the tonalities it is included in, the form and sentences as well as the divisions of the piece, and the musical language of the piece. The ranking made by the instructors was: Harmonic structure of the piece, tonality of the piece, the tonalities it is included in, the form and sentences as well as the divisions of the piece, and the musical language of the piece. It was found that the responses of the students and instructors were consistent with each other.

### The ranking by importance of piano studies students found difficult

Below are the optional answers to the question, "Rank by importance the piano studies that you found difficult".

*Difficulties related to finger numbers  
Playing the passages including small values (16 or 32 notes) at high beat  
Pedal use  
Being able to play the piece in its own unique beat  
Using two techniques with two hands (e.g. legato with one hand and staccato with the other)  
Rolled chords (arpeggios)  
Gamuts  
Cadences  
Consecutive chord clusters including three and four chords*

The students ranked by importance the piano studies they found difficult: Consecutive chord clusters including three and four notes, using two techniques with two hands (for examples, legato with one hand and staccato with the other), and the difficulties related to finger numbers. The researcher posed the same question to the piano instructors. The subjects that instructors placed in higher ranks were using two techniques with two hands (for examples, legato with one hand and staccato with the other), playing a music piece at its own beat, consecutive chord clusters including three and four notes, rolled chords (arpeggios) and gamuts.

However, the instructors thought that the difficulties related to finger numbers should rank third. In other words, the instructors believed this subjects was the third most important one. To conclude, the students, in contrast with the instructors, stated that they had difficulty in using two techniques with two hands (for examples, legato with one hand and staccato with the other), playing the piece at its own beat, and consecutive chord clusters including three and four notes more than with finger numbers.

## DISCUSSION

As indicated by the survey results, the piano lesson is an essential part of the music teaching program, which makes student and instructor opinions about the lesson very important. It was found that both students and their instructors believe the piano lesson should be maintained throughout the years of undergraduate education to increase the lessons' productivity and better achieve their goals. A relevant study found that piano is an effective teaching tool in the institutions that train music teachers, and that it has an important role in music teachers' professional lives (Kivrak, 2003). Kutluk (2001) determined that it was necessary for piano instruction to be maintained throughout the education process. Aydiner-Uygun (2012) stated that one of the most fundamental lessons for pre-service music teachers was piano, and that this instruction was important for their professional lives. These findings supported the results of this study.

Regarding the content of the piano lesson, explanations by piano instructors and their students were found to differ. In fact, the duration of piano lessons should be consistent with the content of the lesson. On the other hand, the lesson subjects will be intense and complicated. Increasing the content and weekly hours of the piano lesson will help teach the subjects in a longer timeframe and enable students to learn more comprehensively. A relevant study focused on the necessity of teaching the piano subjects in longer timeframes to make students use the piano, an effective teaching tool in the institutions that train music teachers, in their professional lives (Bayraktar, 1989). This finding is consistent with the results of this study.

Another finding of the study revealed the ranking by importance of the subjects aimed at strengthening technique and musicality when studying music pieces (for examples, etudes, sonatinas and sonatas) by their importance. The ranking was: Harmonic structure of the piece, tonality of the piece, the tonalities it is included in, the form and sentences as well as divisions of the piece, and the musical language of the piece. The ranking made by the instructors was: Harmonic structure of the piece, tonality of the piece, the tonalities it is included in, the form and sentences of the piece, and the musical language of the piece. It was found that the responses of the students and instructors were consistent with each other. A relevant study stated that the piano technique that students learn is a key to musical expression and a tool for interpretation (Fink, 1992). Another study, which focused on supporting both technical and musical development of students, claimed that a good piano instructor should teach more than how to move fingers (Lyke and Enoch, 1987).

Cantu (2001) stressed the importance of musical expression and musicality for students in understanding and perceiving music, and in reading musical writings correctly. Another study emphasizes the goal of piano

instruction, which is the foundation of music education and plays an important part in instrument training, as well as the necessity of students to use their instruments effectively and productively in their social and professional lives. In addition, that study states that piano instruction should not be limited to teaching students only the technique of playing the piano (Yazıcı, 2013). These findings supported the results of this study.

Another finding of this study revealed the ranking by the students of the piano studies they found difficult: Consecutive chord clusters including three and four notes, using two techniques with two hands (for examples, legato with one hand and staccato with the other), and difficulties related to finger numbers. The researcher posed the same question to the instructors. The subjects that instructors placed in higher ranks were using two techniques with two hands (for examples, legato with one hand and staccato with the other), playing a music piece at its own beat, consecutive chord clusters including three and four notes, rolled chords (arpeggios) and gamuts. Thus, their responses included different technical exercises in addition to finger exercises. Piano instructors should assign technical exercises and music pieces suitable for students' levels of expertise. They should also strive to find instructional methods that fit students' levels (Taviloğlu, 2005). Gasımova (2010) said that technical knowledge was obligatory to convey the content of a music piece, and stressed that it was necessary to consider students' individual differences when trying to improve their technical skills. The research conducted by Ko-Kyung (2005) supports the findings of this study, and claims that students should improve themselves both mentally and physically. That study also stressed that students had different individual characteristics, and piano instructors needed to take these differences into consideration. The study also emphasized that the methods selected by the piano instructor should improve students' note-reading skills and piano technique. Edwards (2014) focused on the importance of piano instructors' selecting materials suitable for students' achievement levels. These findings are consistent with the results of this study.

## SUGGESTIONS

Based on the study findings, the researcher would like to make certain suggestions to program developers, institutions that train music teachers, music instructors and researchers who study in this area.

1. The piano lesson should be maintained throughout the years of undergraduate education since it will enable more comprehensive learning if piano subjects are taught in a longer timeframe.
2. It is also necessary to include certain practices that improves musicality in piano lessons in addition to technical studies to develop piano-playing skills.

3. Piano instructors should encourage both students' musical creativity and musical thinking skills, and their planned studies by assigning homework.
4. It is necessary to inform students about the period and style of a music piece when teaching it to enable students to suitably interpret core aspects of the piece.
5. The piano curricula in music teaching departments should aim to teach qualities that will contribute to other music lessons. This curricula should be simultaneous with the curricula of other music lessons associated with it.
6. As in all fields of education, instrument training, particularly piano training, requires that instructors develop methods suitable for students' individual characteristics, and select methods that fit their level.
7. Piano instruction should be given as a whole that includes fundamental behaviors to be improved both technically and musically.
8. Piano lessons should include studies of how to use the piano more effectively and productively in line with the necessities of music instruction.

### Conflict of Interests

The author have not declared any conflict of interests.

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*Full Length Research Paper*

# Examination of primary education department preservice teachers' attitudes towards environment according to various variables

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The study group was composed of 114 students from the Education Faculty of Uludag University in the spring semester of 2014 to 2015 academic year. 90 of them were female and 24 were male; 52 were enrolled in the classroom teaching and 62 in the social studies department. The 27-item "Environmental Attitude Scale" developed was used in the study. To analyze the data, the statistical package for the social sciences (SPSS) program was used. The Kolmogorov-Smirnov test was used to check if the data distributed normally. It was observed that while the results of the Environmental Behavior Scale distributed normally, those of the Environmental Thought Scale did not. The Environmental Behavior Scale was composed of 13 items; the Environmental Thought Scale consisted of 14 items. Items were scored from 1 to 5. In terms of environmental behaviors, no statistically significant differences were found according to gender and branch. Again, no statistically significant difference was found in terms of environmental thought according to gender, but a significant difference was observed according to branch. When the students' attitudes were compared, it was observed that they exhibited a high level of attitude towards environmental thought but a middle level attitude towards environmental behavior.

**Key words:** Environment, environmental education, environmental attitude, environmental thought, student teacher.

## INTRODUCTION

The concept of environment denotes humans' mutual relationships with other humans, affecting one another in the process of relationships, their mutual relationships and interactions with all living things other than themselves, that's to say, with species of plants and animals. It also refers to humans' mutual relationships with all non-living things in the environment remaining outside the world of living things but in which living things

continue to live, that is to say, air, water, soil, underground treasures and their mutual relationships with the climate and their interactions within the framework of these relationships (Keleş et al., 2009).

Contrary to other living things, humans take their environments under control with technologies they develop (Çepel, 2008). Hence, in order to meet their gradually increasing requirements, they continue to affect

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natural life negatively and use up natural resources rapidly and unconsciously. Rapid population growth, too, gives acceleration to this destruction (Erentay and Erdoğan, 2009). Together with industrialization, many countries accepted nature as an endless resource but it was too late when they realized that it would be destroyed forever and never come back to its previous state (Nazlıoğlu, 1993).

However, having faced with some heavy environmental problems, our country became aware of the importance of this issue, though it was late. Then, it added the topic of environment to the new education programs accepted in 2004 with the aim of training environmentally-sensitive citizens. In the 4<sup>th</sup> Environment Council held by the Ministry of Environment in Izmir in 2000, it was emphasized that environmental education given in our country was insufficient. That is why, with the aim of having preschool children acquire a love of nature and develop positive attitudes and behaviors towards environment, environment-themed topics were included in the programs starting from this educational stage within the framework of the cooperation with the Ministry of National Education. In this way, by using technology and practicing such matters as love of nature, children were to acquire an ecological viewpoint and the logic of ecosystem starting from the primary education age in all the formal education levels (Environment and Human, 2001).

The awareness of nature to be made to acquire in the childhood period is closely related to the nature education to be given in the socialization process. In this direction, when the actual state is looked in, it is observed that the concepts of nature education and environmental education or those of "nature" and "environment" are used interchangeably. This was also seen in the examination of the dissertations written on the subject matter (Özgüner et al., 2007).

Environmental awareness develops with mutual interaction of various factors parallel to personality development. In the development of environmental sensitivity, the family, educational institutions, mass communication means and non-governmental organizations have important roles. Environmental sensitivity, in other words, environmental awareness, includes a dynamic structure which can develop throughout life. That is to say, it is not a structure which is formed in a period of our life and does not change at all later, but a structure which is shaped, developed and sometimes might be regressed by effects coming both from the person itself and from around the environment. In the formation of this structure, as it is with many other features, the foundation formed in the childhood years is extremely important (Türküm, 1998).

It is a known fact that educational activities are important in the approaches to permanent solutions of environmental problems. Raising individuals who are conscious of environmental problems and sensitive to the environment appears as the most effective way of solving

these problems. It is necessary to inform individuals about the subject of environment and achieve behavior modification by having them acquire positive attitudes. In this context, the importance of education to be given in the solution and prevention of environmental problems is to be considered. The success in this matter is possible through the formation of positive attitudes and behaviors in the society. Undoubtedly, individuals having a negative attitude towards the environment will be indifferent to environmental problems and even continue to create problems to the environment (Uzun and Sağlam, 2006).

Attitude is a mental, emotional and behavioral reaction predisposition which individuals organize based on their experiences, knowledge, emotions and motivations towards themselves or any object, social matter or event around them (İnceoğlu, 2010). Environmental education has an indisputable importance in the analysis of the environment, perception of the integrity of nature and the planet, and the acquisition of environmental sensitivity and awareness. The foundation of the environmental education is for protecting the nature and natural resources. Environmental education should not only give information but also affect human behavior. In order to achieve positive and permanent behavior modifications in individuals and have them actively participate in the solutions of problems is the basic goal of the environmental education (Şimşekli, 2004).

Since education is an important tool in changing attitudes, teachers' knowing their students' attitudes towards their lessons and how to measure them can be an important factor in increasing the quality of education. And this makes it inevitable to measure and evaluate these attitudes and make studies on them (Özgen et al., 2007).

In a study carried out with the aim of determining the effects the environmental education program carried out based on the nature experience on the primary school students' perceptions about and behaviors towards their environment, Özdemir (2010) determined that the participant students' awareness levels related to the environmental values and the fact that they were spoiled, their concrete worries about and reactions towards the environmental problems which they were faced with and also responsible behavior tendencies towards the environment increased. Environmental education is generally examined under three headings:

**1. Education given in the natural environment:** It is the education by which children learn by personally interacting with nature and acquire information by doing and experiencing. Children are made to develop more positive attitudes towards their environments by personally interacting with their natural environments (playing in the mud, feeding birds, etc.).

**2. Education about the environment:** It is the education by which children acquire information about how natural events occur. It is the educational process in which they

acquire information about such matters as how rain takes place, how plants grow.

**3. Education for the environment:** It is the education in which information is given in relation to the protection of the environment and the precautions against the upset natural balance (Kesicioğlu and Alisinanoğlu, 2009).

Low information and awareness level which individuals have in relation to environmental problems is an important cause of these negative attitudes and behaviors leading to these problems. Of course, identification and elimination of environmental problems is possible only through recognition of them. For it is unlikely to expect individuals not being aware of the problems to be sensitive to these problems, and asking them to modify their behaviors result to them having more problems. From this viewpoint, it is considered that determining and increasing awareness levels of individuals in relation to the environment and environmental problems is one of the preconditions of coping with environmental problems (Güven and Aydoğdu, 2012).

Education for the environment is an education aiming to modify individuals' environmental ethics, environmental awareness, environmental knowledge, environmental attitudes and behaviors in a positive way. For this reason, modification of environmental attitudes and knowledge is included among the primary objectives of this education (Atasoy and Ertürk, 2008). At this point, behaviors and thoughts of teachers and preservice teachers about the environment are important. Examination of preservice teachers' attitudes towards the environment in terms of various variables is the aim of this study.

In order to make individuals become knowledgeable and conscious of environment and acquire positive attitudes towards it, environment education has an important place. Student teachers' attitudes towards the environment are important in making their students acquire an environmental awareness in the future. For this purpose, answers were sought for the following questions:

1. How is the normality distribution of the participant students in relation to the environmental behavior sub-scale and the environmental thought sub-scale?
2. How is the distribution of the findings related to the environmental behaviors of the student teachers according to gender?
3. How is the distribution of the findings related to the environmental thoughts of the student teachers according to gender?
4. How is the distribution of the findings related to the environmental thoughts of the student teachers according to branches?

## METHODOLOGY

Since the study was carried out with the aim of examining student

teachers' attitudes towards the environment in terms of various variables, the study made use of descriptive screening. According to Karasar (2006), studies aiming to describe, explain the "nature" of events, objects, entities, institutions, groups and various fields are descriptive ones. Since the aim of descriptive or survey studies is to determine current situation, these kinds of studies are usually carried out in natural environments. Techniques used in descriptive studies always change names of studies. These take such names as questionnaire survey, interview survey and observation survey (Karasar, 2006). In this study, data will be obtained through the technique of questionnaire survey.

## Participant

The study group was composed of 114 students enrolled in the Education Faculty of Uludag University in the spring semester of the 2014 to 2015 academic year. Of these students, 90 were female and 24 were male. 52 students were from the classroom teaching department and 62 were from the social studies department.

## Data collection tools

In the study, with the aim of administering to the students, the "Environmental Attitude Scale" was used. The attitude scale was developed by Uzun and Sağlam (2006) and consisted of a total of 27 items. Factor analysis was applied for the construct validity of the scale and the Cronbach's alpha and the Spearman-Brown split-half reliability coefficient were calculated for the reliability of the scale.

The attitude scale was prepared two-dimensionally, namely the "Environmental Thought (Opinion) Sub-Scale" and the "Environmental Behavior Sub-Scale". The Cronbach's alpha reliability coefficient calculated for the Environmental Thought Sub-Scale was  $\alpha=0.80$  and the Spearman-Brown split-half reliability coefficient was calculated as 0.75.

The Cronbach's alpha internal consistency coefficient was  $\alpha=0.88$  for the Environmental Behavior Sub-Scale and the Spearman-Brown split-half reliability coefficient was calculated as 0.81. In addition to this, the Cronbach's alpha reliability coefficient of the general of the Environmental Attitude Scale was  $\alpha=0.80$  and the Spearman-Brown split-half reliability coefficient was determined as 0.76 (Uzun and Sağlam, 2006).

## Data analysis

In the statistical analysis of the obtained data, the statistical package for the social science (SPSS) 20.0 program was used. To check if the data distributed normally or not, the Kolmogorov-Smirnov test was used. It was observed that while the Environmental Behavior Scale was different, the sub-scale of the Environmental Attitude Scale showed normal distribution, the Environmental Thought Scale did not distribute normally. For this reason, with the Independent Samples T test, one of the parametric tests, was used for the Environmental Behavior sub-scale, with the Mann Whitney U Test, one of the non-parametric tests, was used for the Environmental Thought sub-scale.

The pieces of the obtained data were scored according to the 5-point Likert type scale. The Environmental Behavior scale was composed of 13 items and the Environmental Thought scale was composed of 14 items. When making statistical scoring, the highest score was calculated as 5 and the lowest one was calculated as 1. According to this, the highest score to be taken from the Environmental Behavior scale was 65 and the lowest score was 13. Moreover, in the Environmental Thought scale, the highest score to be taken was 70 and the lowest score was 14.

**Table 1.** Normality distributions for the environmental behavior sub-scale.

<b>N</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>Kolmogorov-Smirnov</b>
114	38.35	38.00	35	0.244	0.560	0.05

**Table 2.** Normality distribution for the environmental thought sub-scale.

<b>N</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>Kolmogorov-Smirnov</b>
114	30.13	28.00	26	2.78	11.4	0.00

**Table 3.** Evaluation of the findings related to the environmental behavior in terms of gender.

<b>Gender</b>	<b>N</b>	<b>Arithmetic mean</b>	<b>Standard deviation</b>	<b>Degree of freedom</b>	<b>t</b>	<b>p</b>
Male	24	38.04	10.37	112	0.180	0.859
Female	90	38.44	6.97	-	-	-

**Table 4.** Evaluation of the findings belonging to the environmental behavior in terms of branch.

<b>Branch</b>	<b>N</b>	<b>Arithmetic mean</b>	<b>Standard deviation</b>	<b>Degree of freedom</b>	<b>t</b>	<b>p</b>
Classroom teaching students	52	38.80	7.87	112	0.563	0.575
Social studies teaching students	62	37.98	7.71	-	-	-

## FINDINGS

### Normality distributions related to the environmental behavior sub-scale and the environmental thought sub-scale

When Table 1 was examined, it was observed that the mean (38.35), median (38) and mode (35) values were close to one another and there were skewness (0.244) and kurtosis (0.560), which indicated that the data distributed normally. Moreover, it was also observed that the distribution graph of the scores was acceptably close to normal. When Table 2 was examined, it was observed that the mean (30.13), median (28) and mode (26) differed from one another and there was skewness (2.78) and kurtosis (11.4), which indicated that the data did not distribute normally. Moreover, when the distribution graph of the scores was examined, it was observed that there was no normal distribution.

### Findings related to the environmental behavior scale

#### *Evaluation of the findings related to the environmental behavior in terms of gender of the student teachers*

When Table 3 was examined, it was determined that

there was not a statistically significant difference between the students' environmental behaviors in terms of gender ( $p>0.05$ ). Moreover, that the female students (38.44) and the male students (38.04) score supported this result as well.

#### *Evaluation of the Findings belonging to the Environmental Behavior in terms of Branch of the Student Teachers*

When Table 4 was examined, it was observed that there was not a statistically significant difference between the students' environmental behaviors in terms of branch ( $p>0.05$ ). Moreover, this means the classroom teaching students (38,80) and those of the social studies teaching students (37,98) were close to one another supported this result as well.

#### *Evaluation of the findings belonging to the environmental thought in terms of gender of the student teachers*

When Table 5 was examined, it was observed that although the score mean of the male preservice teachers (61.90) was higher than that of the female preservice teachers (56.33), there was not a statistically significant

**Table 5.** Evaluation of the findings belonging to the environmental thought in terms of gender.

Gender	N	Mean rank	Sum of ranks	U	p
Male	24	61.90	1485.50	974.50	0.457
Female	90	56.33	5069.50	-	-

**Table 6.** Evaluation of the findings belonging to the environmental thought in terms of branch.

Branch	N	Mean rank	Sum of ranks	U	p
Classroom teaching students	52	50.94	2649.00	1271.00	0.04
Social studies teaching students	62	63.00	3906.00	-	-

difference between their environmental thoughts in terms of gender ( $p > 0.05$ ).

#### ***Evaluation of the findings belonging to the environmental thought in terms of branch of the student teachers***

When Table 6 was examined, no statistically significant difference was determined between the preservice teachers' score means in terms of branch. It was found that the social studies teaching preservice teachers' means (63.00) were much higher than those of the classroom teaching preservice teachers (50.94). It was also observed that this difference created a statistically significant difference between the branches towards the environmental thought ( $p < 0.05$ ).

## **DISCUSSION**

When scoring the pieces of obtained data, the 5-point Likert type scale was used. The Environmental Behavior scale was composed of 13 items; the Environmental Thought scale consisted of 14 items. The items were scored from 1 to 5. According to this, the highest score to be taken from the Environmental Behavior scale was 65 and the lowest score was 13. Moreover, in the Environmental Thought scale, the highest score to be taken was 70 and the lowest score was 14.

In the category of environmental behaviors and the sub-scale of the environmental attitude scale, no statistically significant difference was found according to gender and branch. When the arithmetic means were examined in terms of gender, it was observed that the male preservice teachers had a mean of 38.04 and the female preservice teachers had a mean of 38.44. This result can be interpreted in a way that the preservice teachers exhibited a moderate level of attitude in terms of environmental behavior. When the arithmetic means were examined in terms of branch, it was observed that the classroom teaching preservice teachers had a mean of 38.80, and the social studies department preservice

teachers had a mean of 37.98. This result can be interpreted in a way that the preservice teachers exhibited a moderate level of attitude in terms of environmental behavior.

Similarly, in a study carried out by Uzun and Sağlam (2007) entitled "Effects of the Course of "Environment and Human" and Voluntary Environmental Agencies on Secondary School Students' Knowledge and Attitudes towards the Environment", no significant difference was found between the secondary school students' environmental attitudes. In their study entitled "Views of Elementary and Middle School Turkish Students toward Environmental Issues", Yılmaz et al. (2004) found that the elementary and middle school students' attitudes towards the environment differed in terms of gender and this difference was in favor of the female students. In their study aiming to develop a valid and reliable awareness scale in order to determine preservice teachers' awareness levels related to environmental problems and reveal science preservice teachers' awareness levels related to environmental problems, Güven and Aydoğdu (2012) determined that the preservice teachers' awareness levels differed according to the items included in the scale and were below the required level.

In the category of environmental thought and the sub-scale of the environmental attitude scale, it was observed that while no statistically significant difference was found on the basis of gender, there was significant difference on the basis of branch. When the arithmetic means were examined in terms of gender, it was observed that the male preservice teachers had a mean of 61.90 and the female preservice teachers had a mean of 56.33. This result can be interpreted in a way that the preservice teachers exhibited a high level of attitude in terms of environmental thought. In their study entitled "Environmental Attitudes of Young People in Turkey:

Effects of School Type and Gender", Tuncer et al. (2005) found that the secondary school students' environmental attitudes differed statistically in terms of gender and this difference was in favor of the female students. When the arithmetic means were examined in terms of branch, it was observed that the classroom teaching preservice

teachers had a mean of 50.94, and the social studies preservice teachers had a mean of 63.00. This result can be interpreted in a way that the preservice teachers exhibited a high level of attitude in terms of environmental thought. However, when it is interpreted statistically, it can be considered that the social studies preservice teachers were more sensitive on the basis of environmental thought.

When the preservice teachers' attitudes towards environmental behavior and environmental thought were compared, it was observed in the obtained findings that they exhibited a high level of attitude towards environmental thought but a moderate level of attitude towards environmental behavior. In their study aiming to determine the attitudes and sensitivities of the students enrolled in different academic fields of Adnan Menderes University towards environmental problems and factors affecting these, Ek et al. (2009) found that although 85.3% of the students reported that they were sensitive to environmental problems and 86.5% of them stated that they were not a member of any related associations. In the light of the data obtained in the study entitled "Examination of Preservice Teachers' Attitudes towards Environment according to Various Variables", the following suggestions can be made:

1. According to the research results, it can be stated that although the male preservice teachers exhibited more positive attitudes in terms of environmental thought, both genders exhibited behaviors at a moderate level in terms of environmental behavior. When these pieces of data are taken into consideration, it can be suggested that various activities to increase preservice teachers' positive attitudes towards the environment should be included in their education process.
2. According to the research results, although the social studies preservice teachers were observed to exhibit more positive attitudes in terms of environmental thought, the social studies and classroom teaching preservice teachers were observed to exhibit behaviors at a moderate level in terms of environmental behavior. When these pieces of data are taken into consideration, it can be suggested that, by assuming that they are more active in the education process of young children, regulations should be made at education faculties to affect classroom teaching preservice teachers' thoughts and behaviors towards the environment in a positive way.
3. When the fact that environmental pollution has reached serious dimensions in the globalized world of the 21st century is taken into consideration, thoughts and behaviors related to the environment are becoming more important. At this point, when the importance of education and the teacher in the process of education is taken into account in raising individuals who are sensitive to the environment, the number of courses aiming to increase preservice teachers' awareness levels at education faculties can be increased.

## Conflict of Interests

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# The importance of strategies of social language learning and cooperative learning in the process of teaching Turkish as a foreign language

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In order to implement the teaching of a foreign language at a desired level and quality, and to offer some practical arrangements, which stand for to the best use of time, efforts, and cost, there is a need for a road map. The road map in teaching is a learning strategy. This article shows how strategies of social language learning and cooperative learning can be used in teaching of Turkish as a foreign language. The article uses the framework of the research made on learning strategies and is based on qualitative research methods. It evaluates the strategies which are connected to the social language learning and the principles of cooperative learning and puts a particular emphasis on the issues which are connected to the process of teaching Turkish as a foreign language by bringing into a discussion such questions as which principles should the learning activities be prepared and what are the roles of students and a teacher. In addition, the article gives some suggestions on how to detect learning strategies of every student and to accomplish their internalization by the students - achieving thus success in teaching Turkish as a foreign language.

**Key words:** Teaching Turkish as a foreign language, strategies of social language learning, cooperative learning.

## INTRODUCTION

### Aim of the research

Teaching and learning a foreign language is a difficult and complex process both for students and for teachers. In order to complete this process in the most productive and effective way, one must use all kinds of methods. For the same reason, there is a need for a learning guidance, which would provide the process of learning is realized within the shortest time and in the most efficient way.

Due to recent growth in the number of foreign students learning Turkish, the subject of teaching Turkish to foreigners started to gain a larger popularity. The situation demands that teaching Turkish is made according to modern approaches and methods and with the use of effective teaching materials. In order to make teaching Turkish more systematic within one particular programme, there is also a need to study different problems which can occur in the process of teaching and

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as well as to suggest some solutions. The problems originate from educational environments, from teachers, and students. Therefore, it is important to divide the problems into the dimensions of *teaching* and *learning*, afterwards to split them into smaller topics and to offer proper solutions. Consequently, there is a need for research, which will focus on the student experience, by taking into the light how the students learn the material in the easiest way and by bringing into the study the use of learning strategies.

In this respect, this article will shed some light on such issues as how the strategies of social language learning and cooperative learning influence the process of language learning and how it is possible to benefit from them in teaching of Turkish as a foreign language.

### What is a language learning strategy?

In a general way, the term 'strategy' can be defined as a road, which is followed in order to reach a certain aim. "It comprises also such connotations as making a decision, overcoming obstacles, setting proper conditions, trying the most suitable ways, and showing similar manners in every condition/situation" (Saydı, 2007:7). A strategy "expresses an establishment of a long-term goal and general aims of an action, a start of the action, and the choice and use of proper sources which will bring to the aim" (Köksal and Varışoğlu, 2012:82). When a foreign language is concerned, a language learning strategy can be defined as a set of techniques which are used by the students to bring his/her to the aim of his/her learning faster, and to give the process of learning a more enjoyable and enthusiastic character.

The strategies of language learning can be also defined as "conscious actions made by the student in order to acquire knowledge, memorize, remember the memorized information, and use this information as well as certain activities, actions, and techniques which are used by the student to develop his/her skills in the learning of a foreign language" (Oxford, 1996; Oxford et al., 2004)

The most important known characteristic of the learning strategies is the fact that it influences the process of learning directly and can be taught (Oxford et al., 2008). The other feature is that it is connected to individual differences of the students; therefore, every student has his/her own learning strategy.

The learning strategies provide planning and evaluation of the studies, control over the studied material, making decisions connected with the learning process and identification of the issues in which occur difficulties (Chamot, 2004). With the use of the learning strategies, the student learns how to organize himself/herself, how to remember the material and how to think (Özkal and Çetingöz, 2006). In addition, it is quite frequent that the strategies used by the student consciously while learning

a foreign language, will help him/her during his/her future studies.

### The classification of the strategies of language learning

The language learning strategies, "which started to be first studied in the 1970s in the frames of the research of the characteristics of those who success in language learning" (Cesur and Fer, 2007), were classified differently by researchers (O'Malley et al., 1985; Weinstein and Mayer, 1986; Rubin, 1987; Gagné and Driscoll, 1988; Chamot and Kupper, 1989; Oxford, 1990; Öztürk, 1995). The classification made by Oxford is shown in the following:

1. Direct strategies:
  - (a) Memory strategies
  - (b) Cognitive strategies
  - (c) Compensation strategies
2. Indirect strategies:
  - (a) Metacognitive strategies
  - (b) Affective strategies
  - (c) Social strategies

This paper will explain how the social strategies which belong to the classification made by Oxford (1990) can be employed in teaching of Turkish as a foreign language.

### METHODS

In this study, qualitative research method has been used. According to Yıldırım and Şimşek (2006) this method is a research type through which the receptions and the events are manifested in a realistic and total manner in their natural environment. In this study, the instructions acquired by means of the analyses of documents and observations have been reported. For this reason, the research process of the research is appropriate to the qualitative research method.

### THE STRATEGIES OF SOCIAL LANGUAGE LEARNING AND THE PRINCIPLES OF THEIR USE IN TEACHING

One of the most important functions of the strategies of social language learning in the teaching of a foreign language is to encourage the students to establish communication with people who speak the target language. Among the functions of the social strategies there are such as asking questions in a foreign language, receiving answers, correcting mistakes, establishing cooperation, trying to study feelings and thoughts of people of the targeted culture (Lan and Oxford, 2003).

In order to make communication in a foreign language effective, there is a need to develop the oral communication skills. The biggest contribution of the social strategies into the language learning process is the emphasis on the importance of social environment and oral communication.

The learning and teaching environment is a social environment. In this environment, the teacher plays a very big role to establish communication among the students. The students' perception of their self-esteem plays an important role in the process of achieving success in language teaching as well as in the students' adaptation with the language which they learn. Besides, it is possible to develop the skills of cooperation between the students. The students can learn in the easier way when they share their knowledge with a teacher and other students.

Some of the social strategies which can be used to learn a foreign language are the following (Saydi, 2007:52):

1. Reaching clarity: Explanation and giving a definition of information that is not understood or not completely understood in the process of language learning.
2. Confirmation of knowledge: Correction, giving a definition - with the help of different sources - of situations, in which the students are not sure and make mistakes.
3. Establishing cooperation: Making cooperation in order to bring the targeted language into the part of the students' life during the process of language learning; the cooperation is established with people who have enough knowledge and skills in the target language.
4. Cultural sensitivity: The attempts of the students to learn in the process of language learning the feelings and thoughts of their friends who belong to different cultures.

## **COOPERATIVE LEARNING AND THE PRINCIPLES OF TEACHING**

Learning is a both individual and social process. For this reason, it has been expressed that there is a growth in social skills of those students who work in cooperation (Dollman et al., 2007:44). In a classroom, in which a foreign language is taught, the use of cooperative learning makes dialogues among the students more efficient.

In teaching, the general aim of cooperative learning is the establishment of social relationships among the students and with the teachers. With the help of these relationships, the responsibility for learning is left to the students themselves and the students is encouraged to manage in the learning environment which is based on their communication. (Varışoğlu, 2013:36). Because of this, cooperative learning has a great importance in such

language learning processes as the application of a team-work, discussion groups, activities of asking and answering questions, problem solving, as well as in the development of social and cognitive skills of the students.

The process of cooperative learning is a process of group learning. The groups are composed with the aim of the establishment of partner learning, which provides that all the students benefit from successful learning. The members of the group encourage each other to understand the subject of learning and to learn it more. Therefore, all group members gain more success by learning from each other than they could learn by having an individual work (Slavin, 1999).

Johnson et al. (2000) state that the cooperative learning is needed for intellectual, social, and psychomotor development. To reach success, cooperation is compulsory. During cooperative language learning, each student in the group has to work together with other students in his or her group as well as with the students in the other groups. Throughout the teamwork practice, the students gain new standpoints and develop the communication skills and friendly relations (Panitz, 2006).

In the process of foreign language learning, cooperative learning develops social connections and increases motivation among the students. Social connections belong to a process of the establishing of positive bonds between the members of the group. This bond brings the increase of conformity within the class and encourages the students for participation. According to Saban (2004:28), the lack of social connections among the members of the group lays the grounds for the students' independent work and the lack of any interaction among them.

Cooperation plays an important role in the development of communication in a foreign language, as well as in the increase of the richness of meanings. Language learning activities which are based on cooperation and social learning theories guarantee that a contribution is made in the development of the students' language vocabulary. Activities of cooperative learning reflect richness of the language used by both the teachers and the students. Such activities increase the variety of words used while speaking a foreign language, making thus the study of the functions of the language more efficient. Along with the contribution that the student makes into the development of his language skills via his/her individual efforts, he/she contributes also into the inter-class communication. As it is put forward by Slavin (1988), cooperative learning provides the contribution into the concepts of successful language learning.

Language learning environment which is based on the cooperative learning influences the students to become more open to the outside world develops their abilities of listening and activates the skills of understanding of others. At the same time, cooperation is the principle



foundation of a social motivation (Johnson and Johnson, 1999). A student following the strategy based on cooperative learning is aware of the development of his/her learning and of the learning of the members of his/her team. As a result, we see that the teacher steps out of the role of the only person who transfers knowledge during the process of learning.

The social environment which becomes established alongside with the cooperative learning helps to transfer the language into different aspects and spheres (Jacobs, 2006). The learning activities do not belong only to the classroom; they become to be spread into different spheres of social life. Therefore, the student has an opportunity to transfer his/her experiences into a real life and the living language.

### **THE IMPORTANCE OF THE APPLICATION OF THE STRATEGIES OF SOCIAL LANGUAGE LEARNING AND COOPERATIVE LEARNING INTO THE TEACHING OF TURKISH AS A FOREIGN LANGUAGE**

People try to develop the ways of communication because of different social reasons, such as travelling, studying, participation in art and sport activities, etc. Nowadays, due to different reasons, the increase in the number of Turkish language learners is seen. Consequently, it is expected that students of Turkish acquire functional and communicational language skills. The strategies of a foreign language learning and cooperative learning are implemented along such organization of the study process which takes the student into a central position. In teaching of Turkish as a foreign language, the use of the strategies of social language learning and cooperative learning is needed to provide social interaction between the teacher and the students and to create a bond between them for the time of the study. The process of learning can be made easier if the planning of teaching activities is made according to the social strategies and cooperative learning and is based on the use of suitable methods, techniques and materials. In order to be able to find practical solutions to the problems which students will face during the process of learning and to establish an efficient learning process, it is important to know which learning strategies the students have and if they like cooperative learning or not.

The strategies of social language learning and cooperative learning are not limited to in-class activities. From this point of view, there is an increase in the students' active use of language and opportunities to practice of the language, there is a positive development in their performance.

According to social language learning and the principles of cooperative learning, every student is responsible for the learning of his/her classmates at the same level as he/she is responsible for his/her own

learning activities. Success in the individual learning and the strategies which bring the student to it form also an efficient tool in the social learning performance. However, in most cases, the students may be not totally aware of the efficient learning strategies which lay behind their learning success. It is needed to teach them the ways to learning success and to do this, it is important to draw the learning strategies. There is a need to make every student to notice what the social strategies that he/she develops are and to encourage him/her to share these strategies with the students and the teacher during the class.

Another issue - which is connected with the strategies of social language learning and cooperative learning and which the teachers who teach Turkish and the students who learn Turkish as a foreign language has to keep in mind - is how the used strategies and the activities of cooperative learning correspond with Turkish culture and the circumstances of language practice. There is a need to keep the students who learn Turkish active throughout the process of language learning and practicing. It is also important to notice whether the strategies which are going to be used suit the process of teaching as well as the methods and techniques of learning and teaching.

It is important to try to make the student to use Turkish in a communication-based environment; therefore there is a need to include activities which will build up the students' readiness for social interaction. In the class of Turkish, there is a need to strengthen the skills of the students for a teamwork performance and to choose activities which are based on cooperative learning. The teacher must know the reason behind the students' wish to learn Turkish and increase their motivation for learning with the help of a proper planning.

There is a need to establish the profiles of the students learning Turkish, to know what foreign languages they know and to make an effort to harmonize their previous skills with the learning skills in Turkish. It is the responsibility of the teacher to develop in the students a resistance against a cultural shock and situations of misunderstanding and to provide that they are active in social environment.

### **CONCLUSION AND SUGGESTIONS**

In teaching Turkish as a foreign language, the effective methods will be those which are arranged according to the strategies of social learning and the principles of cooperative learning. Despite of a rather theoretical character of this particular paper, the practical accuracy of this conclusion can be proved by works which evaluate the level of success of the English and German language learners (Özkal ve Çetingöz, 2006; Baykan et al., 2007; Oflaz, 2008; Cesur and Fer, 2011). Making a reference to these works, it is possible to conclude that the strategies

of language learning will be also efficient in teaching Turkish as a foreign language. Similarly, those teaching activities, which are prepared in accordance with the mentioned strategies of language learning, will offer a contribution to answer the student-centred problems which he/she may face during his/her studies of Turkish as a foreign language. To obtain success, there is a need to support socialization attempts of every student. It is impossible to learn a foreign language at the level of the mother tongue, fully and perfectly, and to use it completely without mistakes. However, the students can achieve the active use of language in social environment and within the process based on cooperative learning. Therefore, in the teaching of Turkish as a foreign language, it is very important that the teacher includes such activities which will bring the student to the opening of his/her language skills and which will keep him/her in a tight communication both with the teacher and the students. The process of learning of Turkish by the students, their abilities to use its functionally, making acquaintance with Turkish culture and the efforts to develop communication skills are tightly connected with the abilities to establish social relations and cooperation. In order to reach absolute success in teaching and learning Turkish as a foreign language, both the teachers and the students have to make an active use of the social strategies and cooperative learning.

### Conflict of Interests

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# Do L2 writing courses affect the improvement of L1 writing skills via skills transfer from L2 to L1?

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**This study investigates the relationship of second language (L2) writing skills proficiency with the first language (L1) writing skills, in light of the language transfer. The study aims to analyze the positive effects of L2 writing proficiency on L1 writing proficiency. Forty native Turkish-speaking university students participated in the study. While 20 of them attended a two-semester-L2 writing course, the other 20 students did not take any writing courses in L2. At the end of the course, all of the students took an essay writing exam in L1. They were asked to write an essay on education. The exam scores prove that writing skill transfer from L2 to L1 is possible in adult English as a Second Language (ESL) learners. The study illustrates that L2 learning and acquisition enable L2 writing skills transfer from L2 to L1; and this can bring about a progress in their first language writing skills.**

**Key words:** Writing skills, transfer, first language, second language, acquisition, learning.

## INTRODUCTION

First language (L1) acquisition is a process which differs from second language (L2) acquisition in many ways. While first language acquisition reflects infant's mother tongue, second language acquisition is additional language acquisition process for both children and adults. First language acquisition starts in early years and babies start to distinguish sounds, words and basic sentences in a very short time. However, in L2 acquisition, a learner is familiar with basic L1 knowledge. In addition to this, a learner has world knowledge that helps him/her to acquire L2 easily.

First language has a great effect on second language. Researchers define this as "transfer", "interference" or "cross-linguistic influence". Transfer has long been studied in language literature. Many researches demon-

strate that the effect of L1 transfer to L2 acquisition is inevitable (Gass and Selinker, 2008). Almost all second language acquisition researches went in the single direction. However, many researches state that transfer can go in both directions. When the learner acquires a second language, some properties of L1 are also transferred into L2. Among those properties, language skills are the ones that are mostly studied since they are much easier to observe and evaluate. Compared to reading, speaking and listening, writing is a language skill that is more difficult to be observed and evaluated. Thus, most researchers prefer not to study writing skills transfer.

What makes writing a challenging task is that it involves many elements such as drafting ideas, content, voca-

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bulary, organization, mechanics, cohesion, revising and editing. When a writing task is given, in L2 writing, at first lower-level L2 writers are generally inclined to use their L1 writing skills. However, Jones and Tetroe (1987) state that proficient L2 learners do not depend heavily on the L1 to drive the writing process because they have a sufficient level of L2 automaticity and knowledge to think and plan in the L2. There are many studies on the effect of L1 knowledge during L2 writing. While L1 writing proficiency affects L2 in many ways, is L2 writing skills to L1 writing skills transfer likely?

This study searches if there are any positive effects of language transfer from the L2 to the L1 in writing skills by focusing on two different adult Turkish speaking English learners. One group of these students took L2 writing course for one semester, other group did not take any L2 writing courses. In the first part, L1 and L2 transfers are explained. In the second part, the possibility of writing skills transfer from L2 to L1 is discussed in detail. And in the final part, the methodology and the findings are submitted.

### L1 and L2 transfers

The "language transfer" has been defined in different ways by various researchers. Mackey (1968) defines it as "the use of features belonging to one language while speaking or writing another". Some researchers define this as "code-switching and borrowing". As a terminology, it is very broad. Many borrowings can occur while learning and/or acquiring a language. It is clear that L2 learners interact with L1 skills while acquiring or learning L2.

There are two different kinds of hypotheses of L1/L2 transfer in literature. These hypotheses are called "the linguistic interdependence hypothesis" (LIH) and "the linguistic threshold hypothesis" (LTH). According to the linguistic interdependence hypothesis (LIH), literacy skills are acquired in the student's first language; and it may promote literacy development in the targeted second language.

This hypothesis propose that those skills such as reading and writing can easily be transferred to L2. The linguistic threshold hypothesis claims that academic skills are heavily influenced by the transfer of L1 skills (Cummins et al., 1984; Cummins, 1991; Snow, 1990). By this cross-linguistic transfer, the underlying proficiencies help learners to use previously acquired L1 to acquire skills in L2. These skills generally include the language associated with written and oral forms of language (Cardenas-Hagan et al., 2007). The similarities and differences between languages have an important place in language transfer. Although the transfer effects of two languages which have similarities can be seen easily, it does not mean that there is no transfer between languages which have less common features.

### Four skills and transfer

The transfer of four skills may vary based on learners' initial competence in L1 and L2. Because of varied strengths and weaknesses in L1 and L2, the transfer may produce varying results for different groups of language learners. If vocabulary and language skills are developed in L1, it creates a leading high competence in L2. On the contrary, before sufficient proficiency in L1 vocabulary and language skills, L1 may not influence L2 acquisition in a positive way. In this case it can be said that low levels of L1 vocabulary and language skills have a limited effect on the development of L2.

In literature, there are many researches on L1 four skills and their effects on L2 acquisition. Cummins (1984) explains that students who begin school with higher L1 skills are hypothesized to acquire L2 more easily. Lopez and Greenfield (2004) also support Cummins' suggestion in their study. Cobo et al. (2002) state that it is critical for children to have a grasp on language skills in L1 before beginning the process of learning to read in L2. Urdenata and Lorenzo (2011) in their study, examine the influence L1 written structure has on L2 written structure when students are asked to carry out assignments in the L2. Twenty four students of the first semester at UNICA University were asked to write some papers in English during the semester. The results of this study indicate that the influence of L1 (Spanish) can definitely hinder the writing processes in L2. In addition, four basic mistakes (word order, missing the verb "be", implicit subject, and the incorrect use of the article "the") in student papers take place as a direct influence from L1 to L2 writing. All of these studies enlighten the influence of native language and transfer effects in languages.

Some researches show that multi-lingual people differ from their monolingual peers in diverse ways (Cook, 2003). In 1991, Cook (2003) introduced 'multi-competence' to mean 'knowledge of two or more languages in one mind'. It was originally defined as 'the compound state of a mind with two grammars'. Later, Cook (1994) defined multi-competence as 'the knowledge of more than one language in the same mind'. Cook (1994) explains that multi-competence presents a view of second language acquisition (SLA) based on the second language user as a whole person rather than on the monolingual native speaker. Multi-competence opened up reverse transfer from the second language to the first and other forms of transfer (Jarvis and Pavlenko, 2009).

Some researches have proved that knowing a second language affects the first language in different ways. Keskcskes and Papp (2000) state that knowing another language compliments first language. According to them, this situation invokes the concept of 'brain-training'. They explain that Hungarian children who know English use more complex sentences in their first language than those who do not. Cook (2003) found that the cues to the processing of L1 word order change when another

language is known. Pavlenko (2003) analyzed that Russians who knew English interpret film sequences differently from monolinguals. The researches show that the effects of the L2 on the L1 are not limited with grammar or vocabulary. According to some researches the intonation, pronunciation, lexicon, syntax, pragmatics can be changed in L1 via L2. Zampini and Green (2001) states that the duration of silence that distinguishes voiced and unvoiced consonants changes (Voice Onset Time) in the L2 user's first language, for example English Spanish. Mennen (2004) in his study, explained that L1 intonation is influenced by the L2.

In recent researches, different areas have been studied related with language transfer. Montrul (2010) in the study searches if L1 influence in adult L2 learners is similar to L2 influence in the L1 of early bilinguals. Results of the study shows that there are advantages for the heritage speakers in some areas, but similar effects of transfer from English in the two groups. These findings reflect the vulnerability of certain linguistic interfaces in language and for theories that stress the role of age in L2 acquisition and permanent transfer effects. In another study, Siu and Ho (2015) examine the roles of different dimensions of syntactic skills in predicting reading comprehension within and across two languages (Chinese and English) with contrasting structural properties. The findings suggest that young bilingual students may draw on the correspondence between L1 and L2 syntax to support their L2 learning.

Language is a complex domain with a number of subskills. These skills appear in various fields such as grammar, vocabulary, pragmatics, syntax, semantics, morphology, functions, comprehensions, pronunciation, etc. Due to the complexity of the language, it can be said that transfer can occur in different directions and fields. As it is seen in the examples, not only the L1 affects L2 skills but also the people who know a second language have transfer effects in L1. The L2 user discovers the differences in two languages so in the first language more complex linguistic, syntax and semantic organisation can occur. The transfer also takes place in pronunciation, vocabulary and language skills.

### **Writing skills**

Writing is not an ability we acquire naturally, even in our first language has to be taught. Many things such as spelling, grammar, context, discourse, cognitive and lexical knowledge affect the development of writing skills. When children learn to write in L1, they acquire basic writing skills, such as morphological awareness, letter recognition, word recognition. Also, they reach the ability to interpret and create meaning. However, L2 learners are engaged in an experience which is very different from L1 writing skills. Firstly, one of the most important differences is that these learners have previous L1 knowledge and L1 writing abilities and skills.

The learners who start L2 acquisition, are face with differences in the two languages. Although L2 learners have their L1 writing skills from their childhood, they come across with new writing process in L2. Without question, an educated person should be able to write in a clear, coherent and comprehensible manner. The point is that language students often have very poorly developed writing skills even in their native language. Most of the students produce unclear and incoherent writings including misspellings, grammar mistakes and insufficient vocabulary usage. Composing written texts is arguably the most cognitively taxing of language production tasks requiring the integration of multiple processing demands across lower order (for example, handwriting and spelling) and higher order (for example, ideas generation and organization) skills (Bourdin and Fayol, 1994). The situation is not very different in L2. If L2 learners are not taught how to write in the new language, their writing skills are likely to get left behind. It is clear that writing aids language development at all levels in grammar, vocabulary, phonology and discourse. Writing provides the learners to engage with the language at a deeper level of processing.

Teaching writing enable learners to have a better knowledge and awareness of the new language they use. When they write, they have time to think about the language. Writing enforces listening and speaking, and commonly, students feel more confident when they are dealing with the written language. In addition to this, the writing process gives the students the opportunity to improve their writing through systematic self-correction (Franco, 1996). Teaching writing is not just about grammar, spelling, or the mechanics of the alphabet. Learners also need to be aware of and use some criteria such as generating ideas, focusing ideas, organising ideas, having cohesion and comprehension, expressing unique ideas in a proper way. Of course, the goals vary in writing. Some of them are entirely focused on the language itself, some on communication, and others on both the forms and message. During the language learning sequence, students may need to focus their attention on the components of language and to practice manipulating them (Chastain, 1988).

Franco (1996) states that it has always been focused primarily on the teaching of a language as a means of oral communication- listening and speaking skills with secondary emphasis on reading and writing skills. Second language learners' compositions are often criticized for being incoherent. It is argued that learners lack vocabulary and have difficulty describing, defining, explaining, and paraphrasing their ideas and points of views. It is clear that if the learners are not prepared well, we can not expect them to get good results in writing performance.

In the process of teaching writing, there are some crucial parts such as organising information and generating ideas in a clear way. By focusing on ideas, the relevant ideas would form the topic of the text. Another

important factor in writing is to organize the ideas. By connecting the ideas in a meaningful way, a fluent expression is created. In order to have a clear and fluent expression the sentences should be coherent. Cohesion refers to the grammatical and lexical connections between individual clauses. In addition to these, grammatical and stylistic devices should be taken into consideration in writing.

In the last two decades, the researches in L2 writing have undergone tremendous growth. However, there are very limited studies in writing researches in linguistics. Also, there are very few studies on how students use writing competences to learn a second language. Most of the L2 writing researchers tend to address the issue of how students learn to write in a second language. In literature, there are many studies about proficiency of language skills and its effects. Depalma and Ringer (2011) argue that discussions of transfer in L2 writing and composition studies have focused primarily on the reuse of past learning, and thus have not adequately accounted for the adaptation of learned writing knowledge in unfamiliar situations. This study theorizes a construct forged from collective insights on transfer of learning in the fields of educational psychology, education, and human resource development--namely, adaptive transfer.

In another study, Sersen (2011) aims to utilize an experimental-education technique for improving the writing skills of Thai English as a Foreign Language (EFL) students. This improvement of skills is sought by making the student-participants in this study consciously aware of those specific aspects of L1 to L2 transfer that would appear to affect their English writing products in a very direct and negative way. The results of this research suggest that making students consciously aware of negative (L1 to L2) transfer has resulted in a mitigation of certain aspects of that transfer, hence, yielding a degree of improvement in writing skills. Moqimipour and Shahrokhi (2015) in their study aim at analyzing writing errors caused by the interference of the Persian language, regarded as the first language (L1), in three writing genres, namely narration, description and comparison/contrast by Iranian EFL students. The results reveal that the first language interference errors fell into 12 categories and different structural features required in a genre influences the writing errors made in the genre.

In fact, the instrumental role of writing in the acquisition of a second language has a very important place. The effect of writing in language acquisition is not only in one direction from L1 to L2. The interference of language items are bilateral or multilateral. However, there are very few studies on the transfer of L2 writing to L1. The purpose of the present study is to examine the components of writing skills of students academically in their L1 by the way of L2 writing skills' transfer. As this area has not received a great deal of research attention, some points have not been analyzed yet. In the study, the connection between language proficiency and writing

skills in L2 and L1 is scrutinized.

## MATERIALS AND METHODS

### Research design

The purpose of this study is to investigate the relationship of L2 and L1 writing proficiency and writing skills transfer from the L2 to the L1. In addition to this, in the study it is searched that if there is any development in L1 writing subskills. In this research, the following questions are sought to be answered:

1. What is the relationship of the L2 to the L1 in the dimension of transfer?
2. Is it possible to transfer L2 writing skills into L1 writing skills?
3. Is it possible to develop L1 writing skills by having L2 writing courses?

In this research, literature review, document analysis and experimental data were used to search writing language transfer both quantitatively and qualitatively.

### Research sample

The present study examines how L2 (English) writing courses affect the performance of students in their L1 (Turkish) writing skills. The study represents a subsample of a longitudinal project focusing on L1 writing proficiency development of university ELT students in Ankara, Turkey. The sample chosen for this study was deliberately selected randomly from Turkish-speaking ESL university students. These students, who were at intermediate and upper-intermediate levels of ESL, range in age from 18 to 21.

The study was conducted with 40 adult native Turkish-speaking ELT university students who were at the same L1 proficiency level. One group of learners took two- semester-ESL writing courses. The other group didn't take any ELT writing courses. After two semesters, the participants were given an essay writing exam in L1. The subjects were given an essay topic on "education" and they were expected to write an essay in 30 min. For the assessment, a writing criteria check list were prepared. The items of the criteria were evaluated by the professionals. In the assessments, five writing criteria - content, organization, mechanics, grammar, and setting were analysed. The essay type question consist of a topic on education, and must be completed in 30 min. The topic was selected "education" because all of the students have background information on this subject. The writing criteria which were taken into consideration while evaluating these paragraphs are as follows:

The participants were divided in two groups. The first group consisted of the 20 students (n:20) who have not taken any L2 writing classes. The second group of students (n:20) were made up of students who have had a year-long-writing class experience. The students have same L1 proficiency (Turkish) backgrounds. The L1 courses in universities and their highschools have same contents and equal-course hours. So, in this study, it is accepted that these two groups have almost same L1 writing proficiency (Table 1).

### Research instruments and procedure

Data for the study were collected after one group of students completed their L2 writing courses. An essay writing exam in L1 was used to examine explicit proficiency of first language writing. This assessment contains 300-word-vocabulary essay writing consisting of five assessment items mentioned earlier. It identifies

Table 1. Writing criteria.

Writing criteria	Scores
Content	-
A clear understanding and complete analysis of the topic	-
The use of appropriate quotations and examples	-
Originality of ideas and expression	-
Purpose	-
Organization	-
A clear thesis statement	-
A variety of effective transitions to make the writing 'flow'	-
Appropriate and logical structure within the paragraph	-
Good main idea at the paragraph level	-
Maintenance of 'purpose' of the writing	-
An introduction, development and conclusion (at the paragraph level)	-
Effective sentence variety	-
Mechanics	-
Spelling—correct and consistent in usage	-
Punctuation—correct, consistent and with appropriate variety	-
Capitalization	-
Legibility, particularly of handwritten assignments	-
Grammar	-
Sentence formation; clauses and phrases appropriately formed and connected	-
Appropriate word order and form	-
Verb tense, form, voice (active or passive), direct or indirect speech and mood (indicative, imperative, subjunctive)	-
Subject-verb agreement	-
Pronoun case forms and pronoun agreement with antecedent	-
Parallelism	-
Appropriate use of modifiers	-
Style	-
Evidence of stylistic control	-
Writing at the appropriate language level (informal, general, formal)	-
Writing appropriate to content, subject, purpose, and audience	-
Demonstration of effective tone and appropriate vocabulary	-
Evidence of creativity	-
Length and complexity of sentences	-
Maintenance of consistent style	-
Total	-

the strengths and weaknesses of the students in their L1 writing. In assessment, through the writing criteria check list, sentence connectors, verb tense, question words, articles, prepositions, word forms, adjectives, pronouns, relative pronouns, adverbs and auxiliaries were also checked.

In their English writing course, the students have gained a different perspective via different types of materials such as newspapers, magazines and academic works. The main goal of the course was to teach how to organize a paragraph and to make the students to be able to write an essay in different types. To reach this goal, the students would be able to extract main ideas, supporting ideas of the texts; predict the inter-connections of the sentences and to provide high-level of writing skills. With the help of these, the students would learn how to analyze the problems and to gain critical thinking skills. In order to have practice, the students have developed their writing skills by writing subparagraphs. The

students were introduced to different types of paragraphs. Also, outlining, summarizing, spelling and punctuation were taught in the courses. In paractice, the students would work on the topic, title, theme of the paragraph. Through the end of the course, the students would be able to draft an essay and analyze an essay.

#### Data analysis

A parametric data analysis was performed to answer 3 research questions in the study. To compare the means of two independent groups, T-test, Levene's Test of Equality, Kolmogorov-Smirnov(a), Shapiro-Wilk and Annova tests were used. The scores of essay writing exams in L1 are given in Table 2. In the tables, the students who did not take writing courses are shown as "Group A"; and the students who took writing courses are shown as "Group B".



**Table 2.** Comparison of exam results.

Exam scores	Sts	Content	Organization	Mechanism	Grammar	Style	Total
	1	6	8	10	10	8	42
	2	3	7	7	9	5	31
	3	8	8	8	12	9	45
	4	8	8	10	10	8	44
	5	8	10	10	10	8	46
	6	6	6	8	8	7	35
	7	7	6	8	8	7	36
	8	6	5	7	7	6	31
	9	13	14	12	13	12	64
Group A *	10	7	6	8	8	5	34
	11	14	15	12	12	12	65
	12	4	13	12	12	13	54
	13	5	10	10	10	12	47
	14	12	12	12	12	8	56
	15	18	10	13	10	10	61
	16	2	1	2	1	1	7
	17	3	3	3	3	3	15
	18	7	8	8	8	7	38
	19	4	3	4	3	3	17
	20	4	3	3	2	2	14
Total	-	145	156	167	168	146	782
	21	15	14	15	17	18	79
	22	15	7	13	14	20	69
	23	12	12	12	12	18	66
	24	7	8	12	12	8	47
	25	13	12	12	14	12	63
	26	6	6	6	7	6	31
	27	7	6	6	2	4	25
	28	17	18	18	7	18	78
	29	13	8	12	12	20	65
Group B**	30	14	14	12	12	14	66
	31	4	10	10	10	4	38
	32	7	12	12	12	18	61
	33	12	6	7	7	20	52
	34	6	8	6	6	14	40
	35	12	12	14	14	14	66
	36	6	12	12	12	14	56
	37	16	14	16	16	14	76
	38	5	12	12	12	20	61
	39	4	12	12	12	12	52
	40	6	13	12	4	16	51
Total	-	197	216	231	214	284	1142

Group A\*: The students who do not take writing exam; Group B\*\*: The students who take writing exam.

In Table 2, the scores of students in Group A and B are shown separately including "content, organization, mechanism, grammar and style parts. In addition to this, the total scores of each students are given in Table 2. The descriptive statistics are given in Table 3 and Table 4. In Table 3, it is seen that with 95% confidence mean score of the students who did not take writing courses is between

31,18 and 46,92. In Table 4, it is seen that with 95% confidence mean score of the students who take writing courses is between 50,03 and 64,172. The hypothesis of test of normality are given in Table 4. As it is seen in Table 4, the exam scores are distributed normally. According to the results of the test of normality, the T-test can be applied. The results of the independent sample test is

**Table 3 .** The descriptive statistics of Group A.

Variable	Total
Group A	
Mean	39.5
Lower bound	31.18
Upper bound	46.92
95 % confidence interval for mean	-
Std. deviation	16.826
Standard error of mean	3.380

**Table 4.** The descriptive statistics of Group B.

Variable	Total
Group B	
Mean	57.10
Lower bound	50.03
Upper bound	64.17
95 % confidence interval for mean	-
Std. deviation	15.117
Standard error of mean	3.380

**Table 5.** Test of normality.

Variable	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	statistics	df	Sig.	statistics	df	Sig.
Group A	0.116	20	0.200 (*)	0.959	20	0.533
Group B	0.152	20	0.200 (*)	0.952	20	0.398

\*This is a lower bound of the true significance; A Lilliefors Significance Correction.

shown in Table 6.

Levene's test is used to assess variance homogeneity. In the table, it is seen that there is homogeneity of variances. As  $0.691 < \alpha$ , we can accept the null hypothesis and it can be said that there is significant differences between two means. Table 6 shows that the students who have L2 writing courses are more successful in L1 writing than the students who do not take L2 writing courses. As the result of the T-test, it can be said that there is significant difference between two groups.

### Statistical analyses

For all two tests, scores are based upon the mean scores of the essay writing exams. The descriptive measures (Table 3 and Table 4) are the total number of the mean, the lower bound, upper bound, the standard deviation and standard error of mean. Test of Normality, Kolmogorov-Smirnov(a) and Shapiro-Wilk (Table 5) are used to show relationships between the lower bound of the true significances. According to the results of the test of normality, the t-test can be applied. The results of t-tests are given in Table 6. T-test results indicates that the results show that there is significant difference between two groups. The means of these subskills (content, organization, mechanics, grammar and style) are demonstrated in Table 7.

As it is seen in Table 7, there is a certain evidence that means of

the students who take writing courses are higher than the means of the other group. In Table 7, it is seen that the difference of the "style scores" is highly noticeable between two groups. In order to understand if there is any differences between the mean scores in content, organization, mechanism, grammar and style in "Group A" (the students who did not take writing courses), the Anova test is implemented. In Table 7, the Anova test for Group A is shown. Variance analysis results indicate that  $\text{sig}=0.77 > \alpha = 0,05$ . According to the results it can be said that there are no significant differences in the mean scores in content, organization, mechanism, grammar and style parts of Group A.

In order to understand if there is any differences between the mean scores in content, organization, mechanism, grammar and style in "Group B" (the students who take writing courses), the Anova test is implemented. In Table 9, the Anova test for Group B is shown. According to Variance Analysis results, as  $\text{sig}= 0,01 < 0,05$ ,  $H_0$  is rejected. It shows that there is at least one different mean scores in content, organization, mechanism, grammar and style parts of Group B. In order to find the different mean scores in that group, multiple comparisons test is done. As the variances are homogenous, Tukeng test is used.

When the significance values are analyzed, between the content and style scores there is meaningful difference. As a result, it can be said that with the % 95 confidence level, there is difference between the mean scores of the students in Group B (the students who take writing courses) in content and style parts.

**Table 6.** Independent sample test.

Variable	Levene's Test for Equality of Variances		t-test for equality of means					95 % Confidence interval of the difference	
	F	Sig.	t	df	Sig.(2-tailed)	Mean difference	Std. error difference	Lower	Upper
Equal variances assumed			-3.56	38	0.001	-18.050	5.058	-28.28	-7.81
Equal variances not assumed	0.161	0.691	-3.56	37.57	0.001	-18.050	5.058	-28.29	-7.80

**Table 7.** Means of the students.

Variable	Content	Organization	Mechanism	Grammar	Style	Total
Group A: Means of the students who do not take writing courses	7.25	7.80	8.35	8.40	7.30	39.10
Group B: Means of the students who take writing courses	9.85	10.80	11.55	10.70	14.20	57.10

**Table 8.** Anova test (Group A).

Groups	N	Total	Means	Variance	-	-
Content	20	145	7.25	17.03947	-	-
Organization	20	156	7.8	14.90526	-	-
Mechanism	20	167	8.35	10.87105	-	-
Grammar	20	168	8.4	12.77895	-	-
Style	20	146	7.3	12.01053	-	-

  

Anova test (variance sources for Group A)						
Variance source	SS	df	MS	F	P value	F criterion
Among groups	24.26	4	6.065	0.44856	0.773198	2.467494
In Groups	1284.5	95	13.52105	-	-	-
Total	1308.76	99	-	-	-	-

**RESULTS AND DISCUSSION**

Writing is the most difficult skill in language learning as it needs many different subskills and

background information. This study searched the possibility of skill transfer from L2 to L1 in writing. As this area is not studied much, the results would be interesting. The data in this study give

evidence of the association between writing skills in L2 and L1. The results support the hypotheses in this research.

In the study, the five significant writing subskills

**Table 9.** Anova test ( Group B).

Groups	Number	Total	Means	Variance	-	-
Content	20	197	9.85	19.39737	-	-
Organization	20	216	10.8	10.8	-	-
Mechanism	20	231	11.55	10.47105	-	-
Grammar	20	214	10.7	15.69474	-	-
Style	20	284	14.2	27.32632	-	-

  

Anova test variance sources for Group B						
Variance sources	SS	df	MS	F	sig.	F criterion
Among groups	222.26	4	-	-	-	-
In groups	1590.1	95	55.565	3.319	0.013	2.467
Total	1812.36	99	16.737	-	-	-

**Table 10.** Test of homogeneity of variances.

Levene statistic	df1	df2	Sig.	
2.413	4	95	0.054	Homogenous

were analyzed. The study showed that writing skill transfer from L2 to L1 was noticeable. The results of the statistical tests show that writing courses alter the L1 writing scores. In the study, it is noticeable that the students who took L2 writing courses are more successful in essay writing in L1 than the students who didn't take L2 writing courses. In addition to this, in the study Anova tests are implied in order to understand if there are any differences between the mean scores in content, organization, mechanism, grammar and style in "Group A" and in "Group B". According to variance analysis results of Group B, it is seen that  $H_0$  is rejected. It shows that there is at least one different mean scores in content, organization, mechanism, grammar and style in Group B. To find the different mean scores in that group, multiple comparison test is done. Tukeng test results show that between the content and style scores in Group B there is difference. As a result, with the %95 confidence level, it can be said that there is a meaningful difference between the mean scores of the students in Group B (the students who take writing courses) in Content and Style parts. At the end of the study, it can be said that there is a relationship between L2 writing proficiency with L1 writing proficiency. According to the data, it can be said that the writing proficiency in L2 can be transferred to L1 writing, and it effects the improvement of L1 writing skills.

The purpose of this study was to isolate the particular skills of writing and to analyze the effects of transfer. In literature there are limited studies that tries to analyze the effects of language skills to each language. Urdaneta and Lorenzo (2011) in their study, examined the influence L1 written structure has on L2 written structure when students were asked to carry out assignments in the L2.

The results indicated that the influence of L1 (Spanish) can definitely hinder the writing processes in L2. In addition, four basic mistakes in student papers were found to be a direct influence from L1 to L2 writing: word order, missing the verb "be", implicit subject, and the incorrect use of the article "the." DePalma et al. (2011) emphasized that because adaptive transfer acknowledges both the reuse and the reshaping of prior writing knowledge to fit new contexts, this framework could have important implications for L2 and L1 writing pedagogies, and research in the areas of contrastive rhetoric, English for academic purposes and writing across the curriculum.

The role of transfer of skills in the relationship between L2 to L1 is an area which needs more in-depth investigation; however, in the current study these data clarify some of the details about the writing proficiency transfer of L2, showing that L2 writing courses have an important impact on L1 writing. Writing is a very difficult skill, encompassing many other component skills such as comprehension, morphology, vocabulary, syntax, semantics and so on. In this study, some of those skills were picked and analyzed in detail. For further studies, different elements (which is mentioned above) can be searched in terms of writing skill transfer from L2 to L1 and L1 to L2.

## Conclusions

This study focused on the transfer of writing skills from the second language to the first language. The goal was to determine whether L2 learners gain writing skills and transfer their experince to L1. Results from the analyses

## Test 11. Multiple comparisons.

Dependent variable	After	Mean difference (I-J)	Std. Error	Sig.	95% confidence interval		
					Lower Bound	Upper Bound	
VAR00006							
	Content	Organization	-0.95000	1.29375	0.948	-4.5477	2.6477
		Mechanism	-1.70000	1.29375	0.683	-5.2977	1.8977
		Grammar	-0.85000	1.29375	0.965	-4.4477	2.7477
		Style	-4.35000*	1.29375	0.010	-7.9477	-0.7523
	Organization	Content	0.95000	1.29375	0.948	-2.6477	4.5477
		Mechanism	-0.75000	1.29375	0.978	-4.3477	2.8477
		Gramm	0.10000	1.29375	1.000	-3.4977	3.6977
		Style	-3.40000	1.29375	0.073	-6.9977	0.1977
	Mechanism	Content	1.70000	1.29375	0.683	-1.8977	5.2977
Tukey HSD		Organization	0.75000	1.29375	0.978	-2.8477	4.3477
		Gramm	0.85000	1.29375	0.965	-2.7477	4.4477
		Style	-2.65000	1.29375	0.251	-6.2477	0.9477
	Grammar	Content	0.85000	1.29375	0.965	-2.7477	4.4477
		Organization	-0.10000	1.29375	1.000	-3.6977	3.4977
		Mechanism	-0.85000	1.29375	0.965	-4.4477	2.7477
		Style	-3.50000	1.29375	0.061	-7.0977	0.0977
	Style	Content	4.35000*	1.29375	0.010	0.7523	7.9477
		Organization	3.40000	1.29375	0.073	-0.1977	6.9977
		Mechanism	2.65000	1.29375	0.251	-0.9477	6.2477
		Grammar	3.50000	1.29375	0.061	-0.0977	7.0977

provide evidence of language transfer from the L2 to the L1 writing skills, and also writing subskills such as content, grammar, mechanics, style transfer across language groups as well. The results seem to shed light on the importance of considering the effects of L2 skills on L1 under which language transfer occurs.

This study paves the way for future researches to design language programs. In designing language programs and syllabus, language skills transfer in the L1 and the L2 should be taken into consideration to benefit from both language simultaneously. These findings have important implications for researchers, teachers and program designers. They can design their programs accordingly for students with varying L2 and L1 language abilities.

## RECOMMENDATIONS

L2 and L1 writing courses in a program can be designed in the form of skill-based syllabus model (White, 1988). According to results of the present study, it can be suggested that L2 writing and composition studies would be helpful to improve L1 writing proficiency if a program is

designed in the form of adjunct courses. The followings can be designed in the program:

1. L1 and L2 writing courses which have common objectives can be planned.
2. The objectives of these courses should be integrated with two languages and writing skills.
3. The exchange of implementations from the L2 to the L1 and the L1 to the L2 can take place in the courses.

With this integrated L1/L2 writing skill courses, positive transfer would take place in both languages and writing skills. This kind of syllabus design will open way to have procedural and cyclical teaching in the L1 and L2 writing courses.

## Conflict of Interests

The authors have not declared any conflict of interests.

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## CITATION

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*Full Length Research Paper*

# The investigation of the effects of physical education lessons planned in accordance with cooperative learning approach on secondary school students' problem solving skills

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The purpose of the present research was to investigate the effects of physical education lessons planned in accordance with cooperative learning approach on secondary school students' problem solving skills. The research was conducted on 48 students studying at Konya/Selçuklu Şehit Mustafa Çuhadar Secondary School in fall semester of 2015-2016 school year. The research utilized an experiment (24 students) and a control (24 students) group. In order to investigate the effects of physical education lessons planned in accordance with cooperative learning approach on students' problem solving skills, "Problem Solving Inventory for Primary School Children" developed by Serin et al. (2010) was implemented. Data were analysed on statistics software, using Mann Whitney-U and Wilcoxon Signed Rank tests. According to the findings obtained in the present study, there are not any significant differences between experiment and control groups in terms of pre-test confidence in problem solving skill, self-control, and avoidance and total score averages ( $p > 0.05$ ). There are significant differences between control group pre-test and post-test scores in all dimensions and total scores, in favour of post-test ( $p < 0.05$ ). There are significant differences between experiment group pre-test and post-test scores in all dimensions and total scores, in favour of post-test ( $p < 0.05$ ). There are significant differences between experiment and control groups' post-test scores in all sub-dimensions and total scores ( $p < 0.05$ ). Obtained findings showed that, problem solving skills of the experiment group students, on who cooperative learning approach was conducted, significantly increased more than control group students, on whom traditional methods were conducted, and the difference between these two groups was significant.

**Key words:** Cooperative learning, problem solving skills, physical education lesson.

## INTRODUCTION

Physical education is education intended for developing individuals' physical and mental health and physical

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skills, that is based on flexible rules, which can be changed in accordance with environmental conditions and characteristics of participants if necessary, and conducted through game, gymnastics and sport oriented educative physical activities (Yamaner, 2001; Aracı, 2001; Güneş, 2003; Güllü and Korucu, 2005). Today, physical education lesson is considered as the complement of modern general education that takes individuals in a holistic approach. The objective is making students adopt life-long sporting habits, understand the importance of sport, learn movement skills and develop their physical fitness. In addition, it is considered as the activities intended for physical, psycho-motor, mental, affective and social development (Yenal et al., 1999; Çiçek et al., 2002; Özşaker and Orhun, 2005).

Qualified physical education should attain objectives for students as a result of educational decisions made by teachers (Grineski, 1996). Moreover, physical education should provide students with the opportunities to maintain the active life style during adulthood adopted during childhood and adolescence, besides acquiring knowledge and skills students require for the development (Lee et al., 2007). Besides aiming at developing these mentioned features, a qualified physical education should be organized in a way to provide an environment in which students have equal rights during activities (Kiremitçi and Doğan, 2010). Physical education lessons provide the ideal environment for developing student-centred learning approaches as they provide movement variation (Mosston and Ashworth, 2002). Therefore, the use of cooperative learning by teachers in physical education lessons is considered as an effective way of improving quality (Grineski, 1999).

Cooperative learning has been researched thoroughly since its foundation as a pedagogical strategy in 1970s, and it is presented as an effective classroom implementation. It is one of the most commonly used approaches in active learning (Gillies, 2003; Peterson and Miller, 2004; Tsay and Brady, 2010). Cooperative learning is an approach that is based on cooperation between small groups of students of different characteristics in achieving a certain task and a group task (Dyson et al., 2010). The approach projects the learning of students in a cooperative environment in groups. The most important characteristic of cooperative learning is that students work in groups in accordance with a common objective in small groups by helping in each other's learning. The purpose of cooperation is not being better than one another, but doing better together (Bacanlı, 2005; Açıkgöz, 2005). Cooperative learning includes a procedure during which students try to comprehend the content of the course by working in small heterogeneous groups (Dyson, 2001). Students are responsible for both their own learning and their group mates' learning equally. For the learning to be achieved in cooperative learning, all of the group members should attain the set objective. The main purpose here is

learning how to perform the tasks as a team, rather than performing the task (Slavin, 1996; Johnson et al., 2007). In other words, cooperative learning is the instructional use of small groups that requires cooperation in order to maximize students' own learning, and other students' learning (Johnson et al., 1994). Rozmajzl and Bayer-Alexander (2000) defined cooperative learning as a learning approach that involves small groups formed by students of every level, who are able to work together, to attain a common objective. Cooperative learning is an alternative to traditional teaching approaches, and is conducted to improve the teaching and learning of physical education, and provides active learning by placing the students in the centre of learning (Dyson, 1997; Hendrix, 1999; Dyson and Grineski, 2001). Improving physical education with a new perspective based on students and their learning is of importance. Cooperative learning is considered as an effective way for such development of physical education. If cooperation groups can function effectively, students can learn to learn from each other, exist together, respect each other, and listen to each other (Battistich and Watson, 2007). Forming groups, developing individual responsibility, and improving cooperative skills are basic principles of cooperative learning approach (Grineski, 1996). Students, who participate in physical activities conducted in accordance with cooperative learning approach, learn as they move. They improve their self-realization, entrepreneurship and participating abilities as they learn. Additionally, it is presumed that working in groups can develop problem skills as well.

Problem is defined as a conflict encountered when prevented in attaining the objective (Morgan, 1998). Problem solving is the a cognitive, affective and behavioural process, developed and produced by the individuals to find ways to effectively cope with problematic situations in their daily lives (D'Zurilla and Nezu, 1990). During their lifetimes, individuals encounter many problems, and develop various solutions depending on the problems. Coping with the problems encountered in life, in other words problem solving skills is an important skill that is effective in every part and activity of human life. This skill has an important effect in the process of coping oneself and the environment (Barut and Yılmaz, 2000).

Problem solving skill is a behaviour that is learnt as of childhood and developed during school years (Miller and Nunn, 2001). In today's educational programs, the skills that should be acquired by successful students are defined as establishing communication, scientific, rational and logical thinking, using technology, researching, being productive, and sharing knowledge. Besides these, adopting human values and problem solving skills take place, and problem solving is considered as a skill that should be acquired (Söylemez, 2002). Improving problem solving skills provide students with many individual and social advantages in their future. Therefore, educational



studies should focus on developing problem solving skills, and they should be based on student centred programs that can develop students' social skills, instead of traditional methods (Chen and Cheng, 2009). Accordingly, cooperative learning approach that enables effective learning by placing students in the centre of learning should be set to work. As stated by Riley and Anderson (2006), students are more active in problem oriented brainstorming in classes taught in accordance with cooperative learning.

### Research objective

The general purpose of the present research is defining the effects of physical education lessons planned in accordance with cooperative learning approach on secondary school students' problem solving skills. While setting the objective, that mostly some certain approaches and methods are adopted in physical education lessons, and new approaches are not used adequately, which was detected by researches, played a very important role (Donnelly, 2002; Koç, 2005; Yılmaz Saraç et al., 2005; Taşmektepligil et al., 2006; Keske, 2007; Ünlü and Aydos, 2007). Detecting whether cooperative learning, which is based on student centred instruction and eases the learning process, is effective on students' problem solving skills was considered as a necessity. Moreover, it is expected that the findings of the present research will shed light on curriculum development studies for physical education lesson, and further studies on the subject point. In accordance with this general purpose, the problem statement of the present research was set as "Does cooperative learning approach in secondary school physical education lessons have an effect on student' problem skills?" In order to solve this problem, the answers to the following sub-questions are sought:

1. Is there a significant difference between pre-test and post-test results of experiment group students?
2. Is there a significant difference between pre-test and post-test results of control group students?
3. Is there a significant difference between pre-test and post-test average scores of experiment and control group students?

### Importance of the research

Cooperative learning approach reinforces the sense of respect to others' skills and talents besides critical thinking skills, confidence and belonging to a group. Additionally, it strengthens relationships, communication and cooperation between students. Many researches have proven that the approach increases student achievement and positive attitudes towards both school and education among students (Rondinaro, 2004;

Sönmez, 2005; Şengören, 2006; Yıldırım et al., 2006; Bozkurt et al., 2008; Ünlü and Aydın, 2011; Arısoy and Tarım, 2013; Genç and Şahin, 2015). Besides these aspects, the effects of cooperative learning approach in physical education lessons on students' problem solving skills should be investigated, because it is important to know the contribution of cooperative learning to problem solving skills.

Literature review presented many studies conducted on the effects of cooperative learning on problem skills in many different disciplines and different levels of education (Genç and Şahin, 2013; Yıldız and Bümen, 2013). There also have been studies on the effects of physical education lessons based on cooperative learning on social skills/problem solving skill (Polvi and Telama, 2000; Dyson, 2001; Dyson, 2002; Tunçel, 2006; Gülay, 2008; Kiremitçi and Doğan, 2010; Altınkök, 2014). However, no studies have been conducted on the effects of cooperative learning approach on the problem solving skills of secondary school senior year students. Accordingly, the use of this approach in secondary school senior year students' physical education lessons is considered to develop students' problem solving skills. This approach is expected to provide physical education with a new perspective, change students' expectations from physical education lessons in a positive way, and provide physical education teachers with new alternatives to be implemented in their fields. Additionally, the findings to be obtained in the present research are expected to shed light on further studies in this field.

## METHODOLOGY

### Research model

The present is an experimental study conducted to define the effects of physical education lessons based on cooperative learning on secondary school senior year students' problem solving skills. The research was conducted in accordance with "Pre-Test-Post-Test Group Experiment Model", which enables equality between groups based on random selection and also one of the most commonly used models in experimental studies (Cohen and Manian, 1994; Erdoğan, 2003; Karasar, 2011).

### Work group

The work group of the present research consists of 48 secondary school senior year students, who studied at Şehit Mustafa Çuhadar Secondary School in Selçuklu central district of the province of Konya in 2015-2016 school year. In order to test the efficiency of cooperative learning in comparison to traditional method, two of the senior year classes were selected randomly, and one of these was assigned as the control group (n=24), and the other as the experiment group (n=24). Cooperative learning based instruction was implemented on the experiment group, while traditional method was adopted in the control group. Before and after the experiment, "Problem Solving Inventory for Children (PSIC)" was implemented on both groups. Experiment duration was planned as 10 weeks, which is considered as an appropriate time for the cooperative learning take effects (Putnam et al., 1996).

**Table 1.** Mann Whitney U test results for pre-test score averages of groups.

Tests	Groups	N	Mean rank	Rank sum	Mean±SD	U	P
Confidence in problem solving skill	Experiment	24	26.40	633.50	54.91±3.10	242.500	0.345
	Control	24	22.60	542.50	53.33±5.61		
Self-control	Experiment	24	23.81	571.50	10.95±2.36	271.500	0.732
	Control	24	25.19	604.50	11.08±2.93		
Avoidance	Experiment	24	21.75	522.00	8.08±2.51	222.000	0.168
	Control	24	27.25	654.00	8.54±1.53		
General	Experiment	24	24.40	585.50	73.95±4.65	285.500	0.959
	Control	24	24.60	590.50	72.95±7.72		

In order to test whether pre-test averages of experiment and control groups are homogeneous, pre-test Problem Solving Inventory for Children score averages of both groups were analysed with Mann Whitney U test. Findings related to the comparison are shown in Table 1.

As shown in Table 1, there is no statistically significant difference between experiment and control groups' pre-test score averages in "confidence in problem solving skill" sub-dimension (U= 242.500,  $p>0.05$ ). There is no statistically significant difference in "self-control" sub-dimension (U=271.500,  $p>0.05$ ). There is no statistically significant difference in "avoidance" sub-dimension (U=222.000,  $p>0.05$ ). There is no statistically significant difference in problem solving total score averages (U=285.500,  $p>0.05$ ). Taken mean rank and rank sum values, these results indicate that pre-test scores of experiment group students, on who cooperative approach was implemented, and control group students, on who traditional methods were implemented, were almost at the same levels before the experiment.

### Measurement tool

The present research utilized Problem Solving Inventory for Children (PSIC) developed by Serin et al. (2010) in order to evaluate secondary school students' problem solving skills. This inventory consists of three factors as "Confidence in Problem Solving Skill" (12 items), "Self-control" (7 items), and "Avoidance" (5 items), the total of 24 items. Each item is scored on a five-point scale from 1 (I never behave this way) to 5 (I always behave this way). Construct analysis conducted on the 24-item scale showed that the inventory explained 42.26% of the total variance in the inventory. Additionally, confirmatory factor analysis results were in agreement with the three-factor model ( $\chi^2/df= 2.49$ , RMSEA= 0.051, GFI= 0.92, CFI= 0.90). Internal consistency coefficients were calculated as 0.85 for confidence in problem solving skill sub-dimension, 0.78 for self-control sub-dimension, and 0.66 for avoidance sub-dimension. Test-retest reliability scores were 0.84 for confidence in problem solving skill, 0.79 for self-control and 0.70 for avoidance. These scores presenting the problem solving skills are obtained from the total scores obtained from sub-dimensions (Serin et al., 2010).

### Data analysis

Data collected for the present research from the data collection tool were analysed on SPSS 20.0 (The Statistical Package for The Social Sciences) with Mann Whitney-U Test, and Wilcoxon Signed

Ranks Test. Mann Whitney-U test is used to test whether scores obtained from two independent groups differ at a significant way, while Wilcoxon Signed Ranks Test is used to test the significance of the difference in scores obtained from two related data sets. In the present research, the significance of the difference between score averages was tested at 0.05 significance level.

### Application

Secondary school senior year students studying at the same school were selected as the sample of the present research. Two senior year classes were selected as experiment and control groups randomly. Before the experimental application, Problem Solving Inventory was conducted on these groups as pre-test. The same inventory was also conducted as post-test in order to test the developments in groups, and differences between them after the experimental procedure. In both groups, physical education lessons were carried by the researcher in accordance with physical education curriculum, and the subjects were distributed according to two class hours (40'+40') weekly. The activities conducted during the lessons of these groups included activities intended for the objectives in the physical education curriculum, and activities intended to develop social skills. Physical conditions of the school were examined, the indoor sports hall, free activity hall, and school garden were arranged in accordance with the activities, and necessary security measures. Due to the nature of cooperative learning, what should be done before the application was planned by the researcher. In this planning, objectives related to the acquisition of academic and social skills were set, what students will do during the application was planned, and the materials to be used were presented to students (Dunn and Wilson, 1991; Yıldız, 1999).

At the beginning of the application, groups of 3 students were formed as preparation groups, for students to get used to group work. During two-week preparation period, communication skills and social skills were tried to be given to students through "think-pair-share" based "think-share-do" technique developed by Kagan (1992). The groups tried to find individual solutions for the complex movements presented by the researcher accompanied with music, then they tried to accomplish the task working in groups (Grineski, 1999).

In accordance with the curriculum, the researcher worked on volleyball, table tennis and football branches. The researcher planned the classes including the activities related to the subjects of spike-block and dive for volleyball (2 weeks), forehand, backhand and attack hits in table tennis (3 weeks), and shooting, crossing, and offside rules for football (3 weeks).

The techniques to the implemented during the research were

**Table 2.** Wilcoxon signed rank test results for experiment group pre-test and post-test scores.

Tests	Group	N	Mean rank	Rank sum	Z	P
Confidence in problem solving skill	Negative rank	0	0.00	0.00	-4.297*	0.000*
	Positive rank	24	12.50	300.00		
	Equal	0	-	-		
Self-control	Negative rank	0	0.00	0.00	-4.291*	0.000*
	Positive rank	24	12.50	300.00		
	Equal	0	-	-		
Avoidance	Negative rank	0	0.00	0.00	-4.290*	0.000*
	Positive rank	24	12.50	300.00		
	Equal	0	-	-		
General	Negative rank	0	0.00	0.00	-4.287*	0.000*
	Positive rank	24	12.50	300.00		
	Equal	0	-	-		

\*Based on negative ranks basis ( $p < 0.05$ ).

determined by the researcher in accordance with the objective of the lesson, and the subject to be studied, and physical education activities were adapted to the selected techniques. In volleyball teaching, “mutual teaching” and “mutual interrogation” techniques (Slavin, 1990) were utilized. Basic skills were presented to students by the researcher first, then students conducted learning-teaching in pairs. After that, 4 heterogeneous groups of six were formed, and the pairs in the groups from the previous application performed what they learnt, and the watching pairs provided them with warnings. In the last lesson, “team score” technique (Grineski, 1999) was implemented in game form.

In table tennis teaching, “pair-check-do” technique, which is based on Kagan’s (1992) pair control structure, was implemented. The skill was first explained and performed by the researcher, then cooperation pairs were formed and students learnt the skill in pairs, then the skill was performed again in groups, and after students reinforced the skill in groups, they started studying the next skill.

In football teaching, Slavin’s student teams success parts and Johnson’s “learning teams” (Grineski, 1999), which is based on learning constructs, were implemented. The researcher explained and performed the skill, then checked if students could understand, and performer, audience, feedback provider, and equipment corrector roles were distributed to students in each group, and the performances were evaluated by group members. Both individual and group points were taken into evaluation.

Before starting each activity, the summary of the previous activities were examined from different perspectives by the groups, and tips, feedbacks, corrections and reinforces were provided for both individuals and groups, because in cooperative learning, monitoring of the activities, immediate correction and reinforcing the correct behaviours are of great importance (Demirhan, 2006). The researcher tried that students support each, establish correct bonds with each other and act as a group. Additionally, the researcher acted as a guide during the process of activities to be conducted correctly, and be clear of mistakes. In such situations, the guidance of the teacher and motivating the students is of utmost importance (Senemoğlu, 2009).

In the control group, traditional approach (teaching with instructions, practice) was used. The researcher explained and performed the basic skills in volleyball, table tennis and football first, and the students performed these activities accompanied by the

researcher. Whole lesson processes (start-finish, perform-repeat) were carried out by the researcher, and no student interaction was allowed.

## RESULTS

In this part of the research, data related to the sub-problems collected before and after the experiment were analysed with appropriate statistical techniques, and the findings are presented in tables.

In order to test whether there is a significant difference between experiment group students’ pre-test and post-test score averages, experiment groups’ inventory scores before and after the experiment were compared with Wilcoxon Signed Rank Test. The results from the test are shown in Table 2.

As shown in Table 2, there is a statistically significant difference between experiment group students’ pre-test and post-test score averages in “confidence in problem solving skill” sub-dimension ( $Z = -4.297$ ,  $p < 0.05$ ). There is a statistically significant difference “self-control” sub-dimension ( $Z = -4.291$ ,  $p < 0.05$ ). There is a statistically significant difference “avoidance” sub-dimension ( $Z = -4.290$ ,  $p < 0.05$ ). There is also a significant difference in experiment group’s problem solving skill total score ( $Z = -4.287$ ,  $p < 0.05$ ). Taken the mean rank and rank sum values, cooperative learning approach has a significant effect on experiment group students’ problem solving skill.

In order to test whether there are significant differences between control group students’ pre-test and post-test score averages, control groups’ inventory scores before and after the experiment were compared with Wilcoxon Signed Rank Test. The results from the test are shown in

**Table 3.** Wilcoxon signed rank test results for control group pre-test and post-test scores.

Tests	Group	N	Mean Rank	Rank Sum	Z	P
Confidence in problem solving skill	Negative rank	3	11.17	33.50	-2.074*	0.038
	Positive rank	14	8.54	119.50		
	Equal	7	-	-		
Self-control	Negative rank	1	3.00	3.00	-2.354*	0.019
	Positive rank	8	5.25	42.00		
	Equal	15	-	-		
Avoidance	Negative rank	0	0.00	0.00	-3.898*	0.000
	Positive rank	18	9.50	171.00		
	Equal	6	-	-		
General	Negative rank	2	9.75	19.50	-3.485*	0.000
	Positive rank	20	11.68	233.50		
	Equal	2	0	0		

\*Based on negative ranks basis ( $p < 0.05$ ).

**Table 4.** Mann Whitney-U test results for groups' post-test scores.

Tests	Group	N	Mean rank	Rank sum	Mean $\pm$ SD	U	P
Confidence in problem solving skill	Experiment	24	36.33	872.00	62.66 $\pm$ 2.51	4.000	0.000*
	Control	24	12.67	304.00	54.00 $\pm$ 5.38		
Self-control	Experiment	24	34.67	832.00	23.41 $\pm$ 6.08	44.000	0.000*
	Control	24	14.33	344.00	12.45 $\pm$ 3.92		
Avoidance	Experiment	24	35.46	851.00	18.08 $\pm$ 4.79	25.000	0.000*
	Control	24	13.54	325.00	9.58 $\pm$ 1.61		
General	Experiment	24	36.38	873.00	104.16 $\pm$ 8.67	3.000	0.000*
	Control	24	12.63	303.00	76.04 $\pm$ 8.17		

\* $p < 0.05$

Table 3. According to Table 3, there is a statistically significant difference between control group students' pre-test and post-test score averages in "confidence in problem solving skill" sub-dimension ( $Z = -2.074$ ,  $p < 0.05$ ). There is a statistically significant difference "self-control" sub-dimension ( $Z = -2.354$ ,  $p < 0.05$ ). There is a statistically significant difference "avoidance" sub-dimension ( $Z = -3.898$ ,  $p < 0.05$ ). There is a significant difference in control group's problem solving skill total score ( $Z = -3.485$ ,  $p < 0.05$ ). Taken the mean rank and rank sum values, traditional approach has a significant effect on control group students' problem solving skill.

In order to test whether there are significant differences in experiment and control groups' problem solving skill post-test score averages, both groups' Problem Solving

Inventory score averages after the experiment were compared with Mann Whitney U test. Test results are shown in Table 4.

As shown in Table 4, there is a statistically significant difference between experiment and control group students' post-test score averages in favour of experiment group, in "confidence in problem solving skill" sub-dimension ( $U = 4.000$ ,  $p < 0.05$ ). There is a statistically significant difference in "self-control" sub-dimension in favour of experiment group ( $U = 44.000$ ,  $p < 0.05$ ). There is a statistically significant difference in "avoidance" sub-dimension in favour of experiment group ( $U = 25.000$ ,  $p < 0.05$ ). There is a statistically significant difference in problem solving skill total score in favour of experiment group ( $U = 3.000$ ,  $p < 0.05$ ). Considering mean rank and

mean sum values, post-test score averages of experiment group students, on who cooperative learning approach was implemented, higher than post-test score averages of control group students, on who traditional approach was implemented.

## DISCUSSION

In this part of the present research, conducted to define the effects of physical education lessons organized in accordance with cooperative learning approach on secondary school students' problem solving skills, obtained findings were discussed and interpreted in accordance with the related literature.

According to the pre-test scores conducted before the experimental procedures, problem solving skill total score of groups were similar, and this similarity was random. This finding indicates that beginning levels of experiment and control groups were almost the same, and sample selection was appropriate.

According to problem solving skill in group pre-test and post-test score comparisons, there are significant differences between pre-test and post-test scores of experiment group students in both test general, and sub-dimensions. This significant increase in problem solving scores of experiment group is considered to be resulted from the cooperative learning approach implemented on these students, because, as stated by Gillies and Haynes (2011), in cooperative groups, students use their communicative skills effectively, share knowledge, and be more tolerant towards their friends. As a result of all these, they develop problem-solving skills. Sevim (2015), who used jigsaw technique of cooperative learning approach on secondary school students in Turkish lesson, found that the technique improved experiment group students' problem solving skills at a significant level.

According to problem solving skill in group pre-test and post-test score comparisons, there are significant differences between pre-test and post-test scores of control group students in both test general, and sub-dimensions. This significant increase in problem solving scores of experiment group is considered to be resulted from the fact that physical education lesson is effective in developing problem solving skills. According to Karabulut and Ulucan (2011), when individuals, who participate in a physical activity, encounter a problem, they try to produce solution through problem solving thinking, and with problem solving thinking they can use their existing skills and abilities purposively. Dyson (1995) suggests that environments, where physical activities take place, are one of the most effective environments for developing problem solving skills especially for primary school students.

As stated earlier, both groups' intra-group problem solving skills improved at a significant level. The increase

in control group students may have resulted from the nature of physical education lesson, since in physical education lessons students get away from the boring classroom atmosphere and are in more interaction with their friends. This provides them with a good opportunity to develop their social skills. On the other hand, the improvement in experiment group must have resulted from the combination of physical education lesson with cooperative learning effect. Students worked in groups in physical education lessons where they felt more comfortable, and as a result their problem solving skills improved significantly. Previous studies (Sutherland, 2002; Perels et al., 2005; Ilgin and Arslan, 2012) have shown that students' problem solving skills can be developed through education. In order to attain that, classes should include activities that develop social skills and the classroom environment should be organized accordingly. In this context, we can claim that physical education lessons provide an effective classroom atmosphere for developing problem solving skills.

Comparison of post-test scores of experiment group students, on who cooperative learning approach was implemented, and control group students, with who traditional methods were used, produced significant differences in both sub-dimension and in general in favour of experiment group students. This finding shows that positive effects of physical education lessons carried out in accordance with cooperative learning on students' problem solving skills. Findings of the previous studies conducted on the subject point are in agreement with the findings of the present research. Kiremitçi and Doğan (2010) studied the effects of dancing education conducted in accordance with the approach on problem solving skills of students, and Altinkök (2014) studied the effects of physical education lessons constructed in accordance with the approach. Both these experimental studies found that cooperative learning approach had positive effects on the development of problem solving skills. Another experimental study in a different field (Genç and Şahin, 2013) used the same construct, and reported that students' problem solving skills improved significantly. Similarly, Yıldız and Bümen (2013) reported that cooperative learning developed problem solving skills. Additionally, in an experimental study, Sevim (2015) compared experiment and control groups' problem solving skills, and obtained findings, which were in favour of experiment group.

Previous researches conducted on the subject point showed that students, on who cooperative learning approach is implemented, use cognitive processes more frequently. With this approach, students can understand-comprehend-summarize what they read more easily, are more motivated, can learn concepts more easily, analyse, are more willing to participate in debates, and gain problem solving skill more easily (Veenman et al., 2000; Quinn, 2002; Walmsley et al., 2003; Güngör and Açıkgöz, 2005). Small learning groups are more effective than

individual learning in realizing meaningful learning and problem solving. Compared to the classical methods, studies intended for cooperation increase more effective reasoning strategies, meta-cognitive skills, and motivation in problem solving with different ideas (Tinzmann et al., 1990; Topsakal, 2010). Studies on physical education have revealed that cooperative learning decreases dependency on the teacher, and negative verbal communication, develops interpersonal skills, enables learning through cooperation and group work, develop listening and criticizing skills, and provides equal trial opportunities. According to the findings, cooperative learning is effective in improving problem solving skills in physical education (Penelope, 1993; Smith, 1996; Smith et al., 1997; Grineski, 1999; Polvi and Telama, 2000; Dyson, 2002; Tunçel, 2006; Gülay, 2008; Kiremitçi and Doğan, 2010; Altınkök, 2014). Cooperative learning provides an environment where students can have a rich interaction in how to reach information for complex and real life problems, how to get, how to analyse, how to organize and how to use this information (Gültekin et al., 2007).

Consequently, cooperative learning contributes to physical education lessons. In this way, students learn cooperation and group work together, and are active being in the centre of learning. Their listening and communication skills improve, and their physical development and problem solving skills are affected in a positive way. The present research was conducted with the assumption that the use of cooperative learning approach in physical education lessons improves secondary school senior year students' problem solving skills. Further studies can be conducted on broader samples of students at different levels of education.

## Conflict of Interests

The author have not declared any conflict of interests.

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