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Turkish – Technology – Art - Social Studies (Tsta): Integrated Learning Application

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Abstract

The purpose of this research is to compare the effects of the learning based on integrated learning and learning based upon a single discipline in communication learning domain at the level of grade 7. In the research, the descriptive mixed method including both qualitative and quantitative approaches was employed. The study population of the research consisted of the grade 7 students of a secondary school in Konya province in 2015-2016 academic year. While a single discipline-based learning was applied in the control group, integrated Turkish, Social Studies, Technology Design and Art learning was applied in the experimental group. The integrated learning enables meaningful connections between different subject areas, enabling learners to learn effectively in a multidimensional way.In communication learning domain, it was determined that the activities conducted on the experimental group according to integrated TSTA learning were more effective than learning based on a single discipline which was conducted on the control group. When the answers given by the students to the achievement test were compared, it was detected that the students in the experimental group made more explanatory sentences in comparison with the students in the control group, their answers included samples from different domains related to communication and the students were able to integrate these domains with each other.

Keywords: integrated learning, learning based on a single discipline, communication, Turkish education, social studies

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Türkçe – Teknoloji – Sanat - Sosyal Bilgiler (2t2s): Bütünleşik Öğrenme Uygulaması

Öz

Bu çalışmanın amacı, 7. sınıf düzeyindeki iletişim öğrenme alanında bütünleşik öğrenme ile tek disipline dayalı öğrenmenin öğrencilerin akademik başarılarına etkisini karşılaştırmaktır. Araştırma, deneme modellerinden ön test-son test kontrol gruplu modele göre desenlenerek gerçekleştirilmiştir. Çalışma, hem nitel yaklaşımı hem de nicel yaklaşımı içeren açıklayıcı karma yöntem kullanılarak yapılmıştır. Araştırmanın çalışma grubunda, 2015-2016 eğitim-öğretim yılında Konya il merkezinde bulunan bir ortaokulun 7.sınıf öğrencileri bulunmaktadır. Araştırmanın kontrol grubunda tek disipline dayalı öğrenme gerçekleştirilirken deney grubunda ise bütünleşik Türkçe, Sosyal Bilgiler, Teknoloji Tasarım ve Sanat (2T2S) öğrenme uygulaması yapılmıştır. Bütünleşik öğrenme, farklı konu alanları arasındaki anlamlı bağlantılarla öğrencilerin etkili öğrenmelere imkân vererek öğrenmenin çok boyutlu olarak gerçekleşmesini sağlar. Çalışmada yapılan uygulama sonucunda "iletişim" öğrenme alanında deney grubunda yapılan bütünleşik 2T2S öğrenmeye göre gerçekleştirilen etkinliklerin kontrol grubunda yapılan tek disipline dayalı öğrenmeye göre daha etkili olduğu sonucu tespit edilmiştir. Her iki gruptaki öğrencilerin başarı testindeki sorulara verdikleri cevaplar karşılaştırıldığında deney grubundaki öğrencilerin kontrol grubundaki öğrencilere kıyasla verdikleri cevaplarında daha açıklayıcı ifadelere yer veren cümleler kurdukları, cevaplarının iletişimle ilgili farklı alanlardan örnekler içerdiği ve öğrencilerin bu alanları birbirleriyle bütünleştirebildikleri tespit edilmiştir. Uygulamanın sonunda görüşleri alınan öğretmenler, bütünleşik öğrenmenin farklı disiplinleri bütünleştirerek hayatın çok yönlü halini sınıf ortamına taşıdığını ve öğrencilerin öğrenmelerinin daha etkili olduğunu ifade etmişlerdir.

Anahtar Sözcükler: bütünleşik öğrenme, tek disipline dayalı öğrenme, iletişim, Türkçe eğitimi, sosyal araştırmalar

Introduction

This education, which is known as STEM (Science, Technology, Engineering, Mathematics) in English is being applied in the U.S.A. and some other countries, has not been studied enough in our country yet. Whereas integrated learning is also very important for social sciences in order to raise individuals who acquire skills such as problem solving, critical thinking, and teamwork. It is necessary to provide different educations for teachers and students in order to cope with the problems of today's world and to compete on a global scale. Thus, reconstruction and rearrangement is needed in our country, especially in curricula and in many issues. STEM may be identified in different ways by educators who try to design programs and lessons that improve learning of students. It is seen that some educators are trying to integrate their STEM topic knowledge in order to compose deeper understanding. It is anticipated that students may transfer into their future technical and scientific careers and might lead better lives (Fan & Ritz, 2014). In other words, STEM education is the content of knowledge, skills and beliefs which is formed collaboratively at the intersection, rather than a STEM subject area (Çorlu, Capraro & Capraro, 2014). According to Foucolut (1999), science does not change and remove current applications.

Yavuz (2015) states that different disciplines do not penetrate into each other efficiently in school environment and they are not included at the desired level in a circle whose center is the real life, and draws attention to the New Generation School (NGS) involving "Integrated Learning Domains". When native language and social studies curricula of different countries are examined, it is seen that connection among lessons is considered to be important. In the curricula within the content of social studies; for example in Turkey, relating to lessons such as Turkish, mathematics, science and technology (Ministry of National Education, 2005); in Canada Ontario, inter-curricular integrated learning(Ministry of Education Ontario, 2013); in Estonia, relationships to skills of other subject areas such as mathematics, national language, foreign language, natural sciences, technology, fine arts (Republic of Estonia Ministry of Education and Research, 2011); in People's Republic of China Hong Special Administrative Region, association between different domains and lessons (The Curriculum Development Council Hong Kong, 2011); in Australia, the use of knowledge and skills acquired in other domains such as English, mathematics and science(Australian Curriculum Assessment and Reporting Authority, 2010) are emphasized.

Within the framework of information expressed above, this research aims a learning in which multiple domains such as Turkish, Technology and Design, Art(Visual Arts, Music) , Social Studies integrate and teachers of these domains collaboratively teach these subjects in an integrated way in classroom environment. In line with this purpose, attainment and activity samples in the content of "Communication" learning domain were prepared. As it is known, the issue of communication is not only a discipline or domain, but it includes multiple domains as in many other subjects. Communication is not simply the whole of crumbs of information between two individuals at a certain time (Birdwhistell, 1990).

4 TURKISH – TECHNOLOGY – ART - SOCIAL STUDIES (TSTA): INTEGRATED LEARNING APPLICATION

Communication is the whole of intellectual and relational activities which is the compulsory condition for a person to produce and develop his/her biological, psychological and social existence (Erdoğan, 2011). In other words, it is the most important factor which enables a person's transformation from a biological being into a social being. Beginning from early childhood, understanding other people and getting information which would prepare a person for the world comes true through communication (Tuna, 2012). On the other hand, means of communication providing flow of information continue developing day by day.

The issue of communication is highlighted in mother tongue lesson curricula in the world and the transformation of communication into applications in different domains is emphasized. In Finnish Mother Tongue and Literature Curriculum (2004: 51), communication and interaction skills have been particularly purposed.

"- Functional, appropriate for the purpose, ethics; they will gain practice in order to be individuals who can communicate effectively, speak, read, write in school and various communication environments, -They will try to maintain suitable environments for communication, become accustomed to the awareness that interaction has different ways and there are different perspectives." In Australian English Curriculum (2012: 1): multi-directional communication is emphasized and communication skills are included in different learning domains: *"Understanding, using English language with its all varieties, gaining competence in expressing feelings, making interaction easier, effective thinking, gaining persuasive skill and discussing", "Speaking standard Australian English- comprehending the use of its written forms and non-linguistic forms in communication in getting a meaning".* In the Language Curriculum of Canada Ontario State (2006: 4), *"Using language for the interaction of individuals and communities, using language for personal development and the active participation as a citizen of the world"* is aimed, communication is pointed out by underlining the multicultural and very different world. *"Reinforcing students' communication through knowledge and opinions, focusing on their learning at school, in the multicultural and world".* In Turkish Lesson Curriculum (2015: 32) which is going to be applied in 2016-2017 academic year: the attainments of *"They notice different points of view in conversation/discussion. In order to transfer information better, they support their speech/presentation in appropriate situations with multimedia devices such as graphics, visuals and so on. They form an opinion about what they listen/watch"* are included in verbal communication learning domain.

Some examples of attainments which are formed by integrating Turkish, Technology and Design, Art (Visual Arts, Music), Social Studies lessons are given below:

1. They notice and explain visual, written and verbal dimensions of communication. They express the communication media in their lives.

2. They share their products that they prepare in written, verbal, visual and electronic environments by using media devices.

3. Considering the development of communication technologies, they prepare presentations displaying the role of art in communication.

4. They explain and exemplify the effect of the culture of the environment where they live on communication environments.

5. They compare their culture with the ways of communication, signs or situations in other cultures.

6. They express their feelings and thoughts through pictures, photos, writing, signs, songs, notes or other ways of art.

Integrated TSTA Learning Applied to the Experimental Group

Integrated learning enables students to use their creativity through integration which is based on using different fields together in the learning environment. Aybek (2001: 1) describes integrated learning as "an approach which helps students combine, integrate knowledge from different fields and enables students to focus on thinking at the level of analysis and synthesis via concepts. According to Jacobs (1989), integrated learning is "the understanding which uses methods and knowledge of multiple disciplines consciously.

In integrated learning, students better learn connections among events, facts, concepts and ideas clearly and they can build new and different information on them easily by learning how to make deeper connections across disciplines from different perspectives (Bean, 1990; Cited in: Mcdonald and Czerniak, 1994).

In integrated learning, a particular concept (or a problem, an issue) is used as base, knowledge and skills which might give insights into this concept from different perspectives are integrated by collecting from related fields. Here, the main purpose is to examine the concept which constitutes the topic of a lesson. Besides, it is important in this process to learn knowledge and skills of various learning domains related to the concept (Yıldırım, 1996).

Lucas (1981) states that individuals perceive the external world in an integrative way and multiple learning domains form a meaningful pattern in this integration. The ability of students to integrate knowledge from different fields is crucial in order to gain higher level thinking skills such as critical and creative thinking. In this way, knowledge learned by students can be transferred to daily life.

In the learning applied to the experimental group, lessons were integrated and the purpose was to enable students to learn about communication in a multi-directional way. In order to form the integrated curriculum, the researchers

cooperated with the teachers of Turkish, Technology and Design, Social Studies and Art (Music, Visual Arts).

Attainments were written based on the necessity that these lessons need to be studied by integrating in order to provide meaningful learning in terms of communication. The lessons were studied in the frame of prepared activities in order to acquire these written attainments. The lessons were carried out by the teachers together within the lesson plan instructions.

Examples related to integrate TSTA learning activities conducted in the experimental group are given below:

- Students share their writing, visual and auditory products that they form related to a book they have read, a film they have watched, a musical piece they have listened, a work of art they have seen or an event they have experienced by using them together (short film, photograph, music, animation, etc.) by means of technological environments (blogs, social networking sites, etc.) (2nd attainment) (6th attainment)

- With reference to photographs and pictures showing situations which prevent communication in their environment and at the international level, they design dialogues indicating solutions. (4th attainment) (5th attainment).

- Trips to photograph and art exhibitions and technology and science museums are organized, music activities are done. (3rd attainment) (5th attainment)

- Choosing an event that they have experienced in their daily lives, role plays reflecting different viewpoints of people in this event are performed. (1st attainment) (4th attainment) (6th attainment)

- Students choose one of the works in the museums, they get answers to questions such as “When was it made? Which civilization does it belong to? Where was it made? Why was it made? Why does it maintain its importance today? Where was it found? How did it arrive at the museum?, and afterwards they try to find out the symbols that the work has, whether it provides information and clues related to the period and civilization where it was made, tales or legends related to the symbols if any. They create visual designs by looking at the work they investigate. In this regard, tiles; miniatures, murals, motives of carpets-rugs, kerchiefs are employed (4th attainment) (5th attainment) (6th attainment).

- By studying in groups, students search technologies belonging to previous years and they write a report related to what a child who lived in those years could do with the technology s/he had. They also try to determine advantages and disadvantages of today’s technologies by brainstorming (1st attainment) (2nd attainment) (3rd attainment).

In the field of information technologies, students are asked to design a device that would meet a need in future. They are asked to design this device on paper, and then to present it as a picture or a model (2nd attainment) (6th attainment).

A Single Discipline-based Learning Applied to the Control Group

The learning based on a single discipline provides acquisition of knowledge and skills in a single domain. The aspects of a field can be studied in detail. Its purpose is not to relate this discipline to other disciplines. Only knowledge and skills concerning that field are transferred.

Learnings which include only one discipline are crucial in developing scientific thinking and research skills as they provide concentration on only that field. In learnings based on a single discipline, in order to solve problems, the work of combining knowledge and skills which are obtained in different lessons are left to students and it is usually supposed that it would happen automatically. Teachers try to give information only on their own lessons and they do not lay emphasis on to what extent knowledge and skills learned in these lessons are used in other lessons or how they are related (Yıldırım, 1996).

The hypothesis of the research was determined as "Integrated learning increases academic achievement of grade 7 students in communication learning domain in comparison with learning based on a single discipline". It was determined that the studies conducted on integrated learning in the literature (Corlu, Capraro and Caproro, 2014; Fan and Ritz, 2014; Korkmaz and Konukaldı, 2015) were mostly done in numeric fields. There are no researches in which multiple domains such as Turkish, Technology and Design, Art (Visual Arts, Music), Social Studies are examined and integrated by considering their intersection points. Kanatlı and Çekici (2013) suggested the lessons which can be studied by integrating with Turkish lesson as Foreign Language, Social Studies, Music, Visual Arts, Drama, Information Technologies, and Media Literacy. Due to these reasons, the purpose of the research is to compare the effect of integrated learning and learning based on a single discipline on student achievement at the level of grade 7 in communication learning domain by integrating Turkish, Social Studies, Technology Design and Art lessons.

Method

Model of the Research

The purpose of this research is to compare the effect of the integrated learning and single discipline-based learning on academic achievement of students at the level of grade 7 in communication domain. This experimental research was done according to the pretest-posttest control group design which is one of the experimental designs.

Experimental designs are research designs in which the data that would to be observed is directly produced under the control of the researcher in order to determine the cause-effect relationship. In a research which use experimental design, objectives are usually expressed as hypotheses. In pretest-posttest control group

design, there are two groups which are formed randomly. One of them is called experimental group, the other one is called control group. In both groups, measurements are carried out before and after the test (experiment) (Karasar, 2008).

In the qualitative dimension of the research, document analysis was applied. Document analysis includes the analysis of written materials which involve information about the fact and facts that would be searched (Yıldırım and Şimşek, 2011). The answers given by the students to questions which were asked as pretest and posttest and the opinions of the teachers about the application at the end of the application were examined in detail.

In the research, the descriptive mixed method including both qualitative and quantitative approaches was employed. The mixed method is a research type in which data are collected, analyzed, findings are integrated and used to draw inferences by using qualitative and quantitative approaches (Tashakkori and Teddlie, 2003).

Symbolic view of the research model is given in Table 1 below:

Table 1

Symbolic View of the Research Model

G1	O1.1	X1	O1.2
G2	O2.1		O2.2

G1: The experimental group in which integrated learning was applied.

G2: The control group in which learning based on a single discipline was carried out

X1: Integrated Learning

O1.1-O2.1: Pretest (Achievement Test)

O1.2-O2.2: Posttest (Achievement Test)

The table given below shows the research process:

Table 2

The Research Process

- The Main Objective of the Research

To compare the effect of integrated learning and learning based on a single discipline on academic achievement of grade 7 students in communication learning domain.

- Application of pretests

(10 weeks)

- Providing education according to integrated learning in the experimental group, learning based on a single discipline in the control group
- Application of posttest

Participants

The study population of the research consists of 7th grade students in a primary education school in the center of Konya in 2015-2016 academic year. The study population includes 38 students in total, 19 students in the experimental group and 19 students in the control group. The class 7-A represents the experimental group, the class 7-B stands for the control group. 11 students from the control group participating in the research are female (57.89%), 8 students are male (42.10%). In the experimental group, 10 students (52.63%) are female, 9 students are male (47.36%).

While showing quotes from students' answers, codes were used. Sample coding: (C, M, 2): Control group, male, 2nd student. (E, F, 6): Experimental group, female, 6th student.

Comparison of the Experimental Group and the Control Group

In order to determine whether study groups are equal, an achievement test including open ended questions asked as pretest at the beginning of the application and as posttest at the end of the application was used. The results of the pretest were analyzed using t test, which is utilized whether the difference between two unrelated sampling means is meaningful. The pretest results of the groups are given in the table.

Table 3

Communication Skills Assessment Form Pretest Scores of the Groups

Group	N	$\overline{X}$	S	sd	t	p
Experimental Group	19	60.42	6.46			
Control Group	19	59.84	7.43	36	.40	.56

When the result of the t test which was conducted to assess pretest scores of the study groups are examined, depending on the [$t_{(38)} = .40$, $p>.05$] results in total, it is seen that there is not a meaningful difference between the pretest scores that the experimental and the control groups got in "The Communication Skills Assessment Form". Therefore, it is possible to say that the experimental and the control groups are equal to each other.

Data Collection Instrument

The students were assessed by using an achievement test including open ended questions. The prepared achievement test included the entire attainments of integrated TSTA curriculum. Sample questions are given below:

"What is communication? What does this concept mean to you? Explain it by considering all of its dimensions (visual, written and verbal) and giving examples from your own life."

"Compare new media tools with traditional media tools."

"Critically evaluate the last news text you read, listened or watched."

In order to test whether the achievement test is valid, first of all, the test was examined in terms of content validity. The content validity is the indicator whether test items qualitatively and quantitatively measure the defined behavior (trait) (Büyüköztürk, 2007). The opinions of the subject matter experts were asked for the content validity of the test. To assess the question pool sent to the experts, sections of "appropriate-inappropriate and your suggestions if it is not appropriate" were included next to each item. The opinions of 7 out of 9 subject matter experts to whom the question pool was sent were obtained. The questions approved by the experts were included and necessary changes were made in the questions which were suggested to be changed. For example : The question "Evaluate the last news text you read, listened or watched" was changed as "Critically evaluate the last news text you read, listened or watched".

In order to ensure reliability, the results of the achievement test which was used as the pretest and posttest were assessed by the researchers and the assessments were averaged.

Data Collection

Learning based on a single discipline was carried out in the control group, whereas integrated TSTA learning was applied in the experimental group. In the classroom environment which was arranged according to the integrated learning; lessons were taught with activities and lesson plans prepared cooperatively by teachers of Turkish, Social Studies, Technology Design and Art. Before starting lessons, in relation to communication topic, attainments pursuant to integrated learning were written, activity samples and lesson plans were prepared and integrated learning was introduced to the students.

Through this research, integrated learning and single discipline-based learning programs have been formed for communication domain. The lessons were taught in accordance with the prepared curriculum and daily lesson plans.

Analysis of Data

Each of the questions in the achievement test was scored. Standard deviation of the distributions were calculated using the means of pretest and posttest scores that the students got in the achievement test, and t test was conducted in order to see whether the difference was meaningful.

Results

The hypothesis of the research was "Integrated learning increases academic achievement of grade 7 students in communication learning domain in comparison with learning based on a single discipline". To test this hypothesis, the means of the pretest and posttest scores that the experimental and control groups got in the achievement test were compared and the findings related to the comparisons are given in the table below.

Table 4

The Findings Related to the Pretest and Posttest Scores of the Groups

Groups	**N**	**Pretest**		**Posttest**		**Difference of Means**			
		$\overline{X}$	**S**	$\overline{X}$	**S**	$\overline{X}$	**S**	**t**	**p**
Experimental Group	19	60.42	6.46	73.31	7.02	12.89	2.01		
Control Group	19	59.84	7.43	64.31	6.86	4.47	2.98	7.38	.02

According to the findings in Table 4, it is seen that the posttest scores of the experimental and the control groups are higher. This increase which is [t (38) = 7.38, p<.05] in total is at a meaningful level in favor of the experimental group. In order to see to what extent integrated TSTA learning applied to the experimental group was effective in comparison with the control group, it was tested whether there was a difference in terms of posttest application averages of the groups. The analysis results of posttest score means of the groups are given in Table 5.

Table 5

Findings Related to the Posttest Scores of the Groups in the Achievement Test

Group	**N**	$\overline{X}$	**S**	**t**	**p**
Experimental Group	19	73.31	7.02		
Control Group	19	64.31	6.86	4.38	.02

As it is seen in Table 5, when posttest score averages of the groups are compared, there is a meaningful difference which is [t (38) = 4.38, p<.05] in total in favor of the experimental group. This result shows that integrated TSTA learning applied to the experimental group has an effect at a meaningful level in communication learning domain.

It was determined that the students in the control and experimental groups gave similar answers to the achievement test which was applied as the pretest.

Samples from the answers given by the students to the question; *"What is communication? What does this concept mean to you? Explain it by considering all of its dimensions (visual, written and verbal) and giving examples from your own life"* are given below:

The answers given by the students to the question which served as the pretest:

> *"Communication means talking to people. I think we cannot live without communication. Communication is established on television and the internet, in writing and speaking. I also try to communicate."(C, F,5)*

> *"I consider communication as being able to speak. Speaking is the first step of visual, written and verbal communication. In order to communicate in my life, first of all, I speak" (E, M, 9)*

The answers given by the students to the question which served as the posttest:

> *"Talking to people, meeting people and writing to people are communicating. People who can speak, listen and write may communicate with each other. It is necessary to know the entire dimensions of communication in order to communicate. Communicating is also very important in my life." (C, F, 7)*

> *"Communication is a multidimensional concept. Visual communication is communication through visual materials. This shows that communication is not only face-to-face. Being able to communicate makes life easier.*

> *"As a matter of fact, written communication and visual communication- in other words, all dimensions of communication are for people's interactions. We the people see, speak and listen. We understand each other. Communication is actually being able to understand each other. When I communicate with my friends and other people, first of all, I try to understand them. I try to understand while speaking or writing. Sometimes I try to understand a person who produced a visual."(E, F, 2)*

Samples among the answers given by the students to the question; *"What do you think about the past and the present of communication technologies? Evaluate."* are given below:

The answers given by the students to the question which served as the pretest:

> *"Today, communication technologies are more common. There are more computers. There were fewer computers in the past."(C, M, 1)*

"Communication technologies have developed a lot. Today, communication technologies have developed a lot because technology has developed a lot." (E, F, 8)

The answers given by the students to the question which served as the posttest:

"Technology has developed a lot. Therefore, there are more ways of communication. Today, there are various ways. Computers, mobile phones make our communication easier." (C, F, 5)

"As technology has developed a lot today, it is possible to communicate in various ways in comparison with the past. A piece of music we listen to on our computers, a picture or a photograph we see on our mobile phones or text messages we send to each other. All of them have occurred as a consequence of development in communication technologies. Whatsapp, instagram, facebook are some them."(E, M, 4)

Samples of answers given by the students to the question *"Critically evaluate the last news text you read, listened or watch."* are given below.

The answers given by the students to the question which served as the pretest:

"I watched the news last night. There were people who escaped from Syria. I was really sorry. I wish there were no wars." (C, M, 3)

"I saw a car accident in the latest news. There were two deaths. The driver was driving very fast and did not fasten his seatbelt. He should not have driven that fast and he should have fastened his seatbelt."(E, F, 4)

The answers given by the students to the question which served as the posttest:

"The latest news I watched on television was a burglary. Burglars broke into a market. Everybody must know stealing is bad. Now, the market owner is in trouble. I think everybody should help him" (C, M, 2)

"What I saw in the news was news about war. There is a war in Syria. The whole world is deeply saddened by this war but it is still going on. Now it must be ended. Instead of hearing news on the war, there must be news which is made to stop the war. We are almost watching live how the war is happening. We must also use these technologies to end wars." (E, M, 3)

Samples of opinions which were given at the end of the experimental application by the teachers who taught lessons cooperatively are presented below:

"The topic communication, especially in my lesson, that is, in Turkish lesson, is both very important and it is the most significant objective of my lesson. Up until today, I always taught my lessons on my own. For the first time, I taught lessons with my colleagues from other fields. Just as life, communication is also multifaceted and it has another facet in each field of life. I believe that this application was very helpful for the students in the experimental group. (Teacher of Turkish)

"Today technology is indispensable in every field of life. Moreover, one of the benefits of technology is to make communication easier. By integrating lessons, we had more effective lessons and we already made the technologies that the students would use more productive for them. I think we have also contributed to their creativity as well." (Teacher of Technology and Design)

"The Social Studies lesson is a lesson which is very appropriate for the integrated learning because it is a very comprehensive lesson. It includes the past, the present and the future. It was a great and useful experience to teach with my colleagues. I think we were more beneficial to the students in terms of communication by working together." (Teacher of Social Studies)

"One of the best ways of communicating is music. I think we have made our students understand this. Even only this will contribute to them. Of course, seeing their teachers while communicating to each other was also important." (Teacher of Music)

"I am very lucky to participate in the integrated learning application because teachers feel happiest when they know they are beneficial to their students. We tried to make them understand communication in every respect and I think we have achieved this. As a matter of fact, we uncovered the truth of life by integrating different lessons." "Teacher of Fine Arts"

Conclusion and Recommendations

It was determined that integrated TSTA learning applied to the experimental group was more effective than the single discipline-based learning applied to the control group in communication learning domain. In the research by Jacobs (1989), it was detected that interdisciplinary teaching made important contributions to the learning of students. According to Duman and Aybek (2003), topics became more meaningful by the help of integrated learning. It is possible to say that these results indicate the effectiveness of integrated learning on academic achievement.

When the answers given by the students to the achievement test were compared, it was observed that the students in the experimental group made more explanatory answers in comparison with the students in the control group. Mcdonald and

Czerniak (1994) remark that students learn how to establish deeper relationship among different disciplines and to structure different information easily through integrated learning. Yavuz (2015) states that different disciplines cannot benefit from each other sufficiently at schools and he emphasizes that it is likely to contribute to students in terms of getting a multiple, different and integrated perspective by the simultaneous presence of teachers of different disciplines in the learning environment according to the content which would be taught through integrated learning. It is possible to express that integration of different skills in different fields by integrated learning is effective on developing thinking skills of students

It was determined that the answers of the students in the experimental group included samples from different fields related to communication and these students could integrate these fields with each other. Kansızoğlu(2014) states that using different disciplines together contributes to the academic, personal and social development of a student and it would make contributions to students' critical, multi-directional, creative and integrative thinking, skills of problem solving and acquiring different perspective. Aybek (2001) supposes that integrated learning is very crucial in terms of encouraging students to be interested in lessons and ensuring teaching. Depending on these findings, it is likely to say that it is necessary to do integrated learning activities in different fields.

Students in the control group gave answers mostly at the level of knowledge, whereas students in the experimental group gave answers at the level of analysis and evaluation. Leatham, Lawrence and Mewborn (2005) stated that higher order thinking processes such as problem solving, evaluating, drawing conclusions and making connections could be measured using well-prepared open ended questions. Depending on this, it is possible to state that integrated learning is important to students in terms of gaining higher order thinking skills.

At the end of the application, the teachers expressed that integrated learning brought multi-directional situation of life into the classroom environment by integrating different disciplines and learning of the students was more effective. Yıldırım (1996) stated that teachers could discover how to study together in terms of effective and meaningful learning by recognizing aspects and needs of each other's field by the help of integrated learning. In their researches (Mason, 1996; Tchudi and Stephen, 1993), it was stated that teachers need to be in cooperation for an effective learning environment. From this point of view, it is likely to say that integrated learning makes positive contributions to the cooperation among teachers.

Yıldırım (1996) points out that students, especially at the level of secondary school, are not ready to go into the rigid patterns of disciplines, this situation causes problems such as finding learned knowledge meaningless, irrelevant to daily life, abstractness of knowledge and skills and difficulty in putting into practice. Integrated learning is more appropriate for the natural learning process and the way a student perceive the world.

Accordingly it is possible to say that integrated learning provides a way for students that they can use in order to reach their goals and solve their problems by integrating attainments of different fields for the solution of the problem emerging because of limits of a single field and not being able to transfer the acquired attainments to other fields.

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