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THE IMPACT OF MULTIMEDIA TECHNOLOGY ON BOOSTING STUDENT TEACHERS' PEDAGOGICAL CONTENT KNOWLEDGE COMPARED TO TRADITIONAL TEACHING

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ABSTRACT

Objectives: The purpose of this research is to find out the role of multimedia technology with multimedia screens in terms of boosting student teachers' pedagogical content knowledge compared to traditional teaching which includes the curriculum of course books and worksheets.
Methods: The triangulation research design was used in this study because there were both qualitative and quantitative analysis of the study. The data collection tools for this study were a smart board, two projectors, academic achievement tests, interviews, observations and questionnaires.
Results: This research which reflects the positive perspectives about the use of the multimedia technology with multi-screens compared to the traditional usage of course books.
Originality: Since multimedia technology will be very effective in developing pre-service teachers' thinking, analyzing, reasoning and self-awareness skills, it will be the basis for many future studies.

PEDAGOJİK İÇERİK BİLGİSİNE SAHİP ÖĞRENCİ ÖĞRETMENLERİN ÖĞRETİM KOŞULLARINDA MULTİMEDYA TEKNOLOJİSİNİN YERİ

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ÖZ

Amaç: Multimedya teknolojilerinin multimedya ekranlarındaki rolünü, öğrenci öğretmenlerin pedagojik içerik bilgisini, ders kitaplarını ve çalışma sayfalarının müfredatını içeren geleneksel öğretime kıyasla arttırmaktır.
Tasarım/Yöntem: Üçgenleme araştırması tasarımı kullanılmıştır, çünkü çalışmanın hem nitel hem de nicel analizi yapılmıştır. Bu çalışma için veri toplama araçları, bir akıllı tahta, iki projektör, akademik başarı testleri, mülakatlar, gözlemler ve anketlerdir.
Sonuçlar: Multimedya teknolojisinin çoklu ekranlar ile kullanılması konusundaki olumlu perspektifleri, ders kitaplarının geleneksel kullanımı ile kıyaslandığında yansıtabileceği düşünülmektedir,
Özgün değer: Çoklu ortam teknolojisi, öğretmen adaylarının düşünme, analiz etme, akıl yürütme ve öz-farkındalık becerilerini geliştirmede çok etkili olacağından, gelecekte yapılmak istenen çok sayıda çalışmaya, temel teşkil edecektir.

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1. INTRODUCTION

1.1 Background Information

The use of multimedia technology is inevitable for teacher education programs in today's world. Computers, internet, mobile phones and blogs play very efficient roles in teacher education programs or Second Language Teacher Education (SLTE) (Crusan et al., 2016). The methods related to technology are now replacing the traditional teaching methods. Students' needs always change in accordance with the developing world. Therefore, educators of student teachers should become alert in order to meet students' needs, and search for both effective and new methods. In addition, the goal of meeting these changes gives teachers more responsibility and challenge (Kubanyiova & Crookes, 2016). The tradition of teacher education programs has been considerably changed with the integration of technology into courses or programs. Technology provides so many options in order to arise student teachers' curiosity and motivation. It also makes teaching more productive by offering various types of activities and providing an active participation of all student teachers. Also, the application of multimedia and technological devices into the pedagogy programs provides a great amount of information in multiple fields as they are effective in creating a more authentic learning environment, enhancing the quality of contents and integrating skills (Mazzoni et al.,2015).

Some student teachers learn by listening to audio, some learn through visuals and some others learn through integrating more than one of their senses during the lesson; therefore, educators of student teachers have a great opportunity when they use a combination of teaching methods and make the classroom environment stimulating by using multimedia devices (Montrieux et al., 2016). In this study, the importance and the application of the multimedia in pedagogical teaching for L2 student teachers was studied and shown clearly. As each of L2 student teacher needs to have a clear and effective pedagogy in order to teach the target language effectively in their future career, a permanent and prosperous educating method was entailed. In addition, the advantages of using multimedia for creating a context to teach pedagogy in SLTE programs were dealt with throughout the study, the role of traditional techniques and its effects for teaching pedagogy in SLTE programs were figured out in this study.

The benefits and effective use of the multimedia are always seen a critical point for better teaching in SLTE programs because multimedia teaching helps students to get involved and learn according to their interests. It provides student-centered teaching model, attracting and arousing the students' learning interests, presenting more information at once. Thanks to this method, student teachers are no longer passive receivers in the learning process because it encourages active participation of student teachers. As student teachers generally enjoy working on computers, the use of multimedia should be utilized in order to motivate students during the learning process.

1.2 Problem Statement

Most of student teachers lack a great deal of appropriate pedagogy in SLTE programs, they don't have enough knowledge on how to teach and what to teach during their courses. In addition, they can't get pedagogic content knowledge very easily and encounter difficulties in learning it as the education programs follow traditional techniques such as teaching via course books and worksheets; therefore, they are faced with many problems in their future careers because they are not able to control the class effectively and can't develop autonomous perspectives in teaching.

1.3 Aim of The Study& Research Questions

The purpose of this study is to find out the role of multimedia technology with multimedia screens in terms of boosting student teachers' pedagogical content knowledge compared to traditional teaching which includes the curriculum of course books and worksheets. Furthermore, it also aims to catch the advantages of multimedia in enhancing student teachers' motivation and interest for learning pedagogic content knowledge through analysis of observation, interviews and questionnaires.

- What are the advantages of using multimedia teaching with multimedia screens over traditional teaching methods?
- What are the students' reactions towards multimedia teaching method?

- What is the importance of application of multimedia technologies in teaching education programs?

1.4 Significance of The Study

The present study is closely linked to the activities and methods that the authors have learned in teacher education course of their Ph.D. Teacher education course which has given us a great insight in order to conduct this research. This current study is quiet fruitful because it contributes to the researchers in terms of professional development through self-observation, interviews and questionnaires. Also, this research is quite significant because it focuses on the perception of pedagogic content knowledge in SLTE programs and it pinpoints the process of perceiving pedagogic content knowledge through multimedia technology. Furthermore, this study gives the researchers a great chance to monitor student teachers, and have accurate results on the application, the procedure and analytical study of the processes. Finding effective solutions and demolishing learning barriers is the researchers' greatest aims throughout the study. Many different theories and applicants have been investigated in this study and it is hoped that this study will be quite effective in terms of boosting student teachers' pedagogical content knowledge and be a good sample for teacher educators seeking effective and enjoyable learning ways in SLTE programs.

2. LITERATURE REVIEW

The development of technology has lead teacher educators to use multimedia tools as a new method of teaching. There are many advantages of using multimedia to create a context for teaching and learning. Pedagogical content knowledge and multimedia technology should complete each other and they are needed to be integrated in order to have a fruitful learning for student teachers in SLTE programs (Gilakjani, 2012). Shulman (1986) described the pedagogical content knowledge as transformation of knowledge because teachers use the subject matter, find multiple ways, and adapt these for the students. Pedagogical content knowledge includes the core business of teaching, learning, curriculum, assessment and reporting, these are effective for promoting learning and the links among curriculum, assessment and pedagogy. Multimedia technology is also very significant like pedagogic content knowledge as it gives the chance of teaching and learning in an interactive way because technology manages a transparency of perception (Bruce & Hogan, 1998). Integration of technology with pedagogic content knowledge is the most advantageous and effective way of learning for student teachers because it gives the chance of flexibility and interaction among students. Koehler & Mishra (2009) pinpointed the need of teaching with technology. They stated that technological devices are protean, unstable, and opaque as these devices are able to present new challenges to teachers. They also focused on some probable problems of teachers using technology. They asserted that teachers have always been provided with inadequate training for the application of technology in the class because most of approaches to teachers' professional development offer only one aspect of technology integration and this is a real problem for professional teachers as teachers need to operate in diverse contexts of teaching and learning; therefore, teachers should be educated well in order to fit the uses of technology or multimedia into their classes. In addition, this education of technology needs to be consistent with teachers' existing pedagogical beliefs (Ertmer, 2005). Most of traditional technological devices such as pencils, pendulums and chalkboards are thought as specificity, stability and transparency of function (Simon, 1969). These devices undergo some common changes due to achieving the transparency of perception (Bruce & Hogan, 1998). Also, these devices aren't thought as technological devices anymore because digital technologies such as computers, handheld devices, and software applications have been considered as technological devices. In fact, a pencil and a software simulation are both technological devices in the academic world but their functions are not the same as a pencil is unstable and not opaque; however, multimedia technology with simulation or multi-screens is more technological and offers a great deal of assistance in teacher education programs.

Another and the most important opportunity that the multimedia technology has given us is the internet which has multiple uses. The significant tribute of the internet is dealing with education because it gives the student teachers the chance of reaching a wide range of collection of texts or information in various departments. It has been thought by many scholars that nowadays students at colleges or universities are luckier because they have the chance of checking, revising, editing and rewriting tasks, texts or the other goals related to their learning easily thanks to multimedia technology, but it was different in the past because most of the instruction was personified mostly by the teachers

or by the lectures pinpointing errors on students' texts, projects or works which was quite traditional for learning and teaching at that time. Kasper, (1997) conducted a study and found that using multimedia such as print, film, video, and internet motivate students to write a critical analysis on projects or school works. According to the study, by means of multimedia technology, the students' success increased considerably as 92 % of the students were able to pass the reading and writing examinations in the department. Also, students gave very positive feedback on the discussion of multimedia and were very confident in using multimedia in their classes because the materials such as film and the internet were very helpful in understanding the courses as students were hearing, seeing and reading about the topic related to the course. Also it is asserted that that multi-media technology has great functions in developing the bonds between teaching and reflection as teachers use multiple ways to catch the important points within multimedia teaching in classes (Mao, 2010). What is more, the multi-media teaching is also essential for getting socialized because it may contribute learners to develop a sense of the socio-cultural context in which the language is being used (Kramsch, 1999).

Gary Motteram (2013) is on the idea that equipping a class with technological gadgest is rather fruitful as students can learn better with digitial gadgets. Pun (2013) also found similar results on the usage of multimedia gadgets in language teaching and it is found that using multimedia technology develops communication skills and learning well because students feel more motivated to participate in tasks. In addition, Joshi (2012) aimed to come up with advantages of multimedia technology for student teachers in classes and found that through the multimedia technology, the teacher is able to give more opportunities and choices to student teachers in order to let them define their ideas freely and enjoy the time during the courses and students had a great deal of motivation in completing various tasks. Teachers as facilitators can use the pictures and sounds together to enhance the students' learning and affect more senses simultaneously. Vision and hearing are the dominant senses. Multimedia can provide a sensory and a real learning experience. As the design of Edgar Dale, *Cone of Experience* (Dale, 1946) emphasized the importance of audio-visual materials because information can be conveyed with a single image or an audio more easily rather than a description. With the help of audio, visual and animation effects, students become more eager and motivated. Since the multimedia tools seem more appealing, students participate in the courses more actively. Furthermore, the multimedia teaching is also flexible because some tools such as blogs and social media allow us to create a context after school as well. These tools are effective for student teachers to develop autonomous attributions in learning because students can have the advantage of technology whenever they have questions out of the lessons, by contacting teachers through e-mails or social media. In addition, it is important to have a good cooperation between educators' guidance and learners' focus as it is stated that teaching must focus on the guidance of teachers and be student-centered (Holec, 1981).

In conclusion, multimedia technology has become an indispensable part of teaching as it is significantly important in boosting student teachers' skills for various aspects such as pedagogic knowledge, pedagogic content knowledge and general pedagogical knowledge.

3. METHODOLOGY

3.1. Research Design

The triangulation research design was used in this study because there were both qualitative and quantitative analyses of the study. It was stated that the triangulation research design requires both quantitative and qualitative data. These two types of data are very significant for the triangulation research design because the research has both statistical and comprehensible data. To start with, the quantitative research design checks the statistics of results, finds the analytical grades for each statistic and then uses these findings or evaluations to validate (Fraenkel & Wallen, 2006). On the other hand, the qualitative research design being a part of the triangulation design is an exploratory research in which the researcher involves looking things in depth in their natural settings by trying to make sense and interpret meanings (Denzin & Lincoln, 2005). The research design of the study was mostly based on observations, interviews and questionnaires. In addition, a comparative study was made between the two applications of the study for the same group. The aim of the comparative research is to find out something about one or all of the things that being compared and this study mainly focuses on the effects of multimedia teaching with multimedia screens. The advantages and disadvantages of multimedia technology with multi-screens for teaching, reactions and thoughts for this technique were figured out via this research design.

3.2 Research Context and Participants

The study was applied to bachelor students studying at the department of English Language Teaching (ELT) in Turkey. The research context is the education faculty of the university and the department for this study is ELT. The number of the participants for this study is fifty. Most of the students in this research are bilinguals. Some of their mother tongues are Kurdish and the others' are Arabic. The participants are the 4th grade student teachers in the department of ELT. The students' ages change between twenty and twenty-three. There are both male and female participants. The participant student teachers have been learning English for thirteen years and they are English teachers next year. All of them have an advanced level of English.

3.3 Data Collection Tools

The data collection tools for this study were a smart board, two projectors, academic achievement tests, interviews, observations and questionnaires. Smart boards are available in all of universities nowadays. These smart boards give a great interaction between student teachers and their educators. The educators of student teachers used them to multiply as they have the chance of showing the videos related to the course, writing on the board and letting students listen and write effectively while using the boards. Also the educators can save all the notes on the smart boards and share the notes to students' tablet computers via the smart board. The smart boards are quiet motivating and interactive for students. The projectors are used to reflect the information from a tablet or a personal computer. In this study, two projectors are used, one of them is used in order to show the related videos and the other is used for the aim of showing the related pictures.

Academic achievement tests are helpful for student teachers see their progress and the comprehension after each topic. There were two academic achievement tests and each of them included 10 questions compromised of multiple choice questions. These academic achievement tests let both the researchers and student teachers compare the academic outcomes of the study. Interviews are research instruments that are generally used to collect data in a study. They can be both used for qualitative and quantitative analysis, but mostly they are used in qualitative studies. They were very effective in gathering ideas of participants in a study. It is noted that interviews are among the most familiar strategies for collecting qualitative data (DiCicco-Bloom & Crabtree, 2006). The interviews being applied to students included five questions for each student teacher and there were basic questions in English in order to gather critical ideas of the student teachers. Each of the interviews were being recorded in order to give the researcher the chance of going back and forth for the analysis of the study. By applying the interviews, student teachers' thoughts and feelings towards the traditional and multimedia teaching may be understood well. Observation is also very important as it really helps us to understand something better that we need to explore. Also, for observational purposes, video recording is a very effective way in a study because it lets us keep and analyze the important facts of a study; therefore, video recordings were used during the applications of the study. Observing students' attitudes towards teaching with both traditional and multimedia technology methods will give us important feedbacks.

Questionnaires were used in this study. They are generally used for statistical analysis in a study and significant for both qualitative and quantitative studies because they give clear results. The preparation of questionnaires was challenging and it was noted that designing and having an effective questionnaire is generally difficult as researchers need to think carefully and clearly in order to form what they aim and wish to have in their questionnaires (Peachy, 2008). There were ten items in the questionnaires because the feedback of students was aimed to be gathered as quantitatively at the end of the study. Each item had five choices as 1,2,3,4 and 5. Among the choices, 1 represented "almost seldom", 2 represented "seldom", 3 represented "sometimes", 4 represented "often" and 5 represented "always" (Ebrahimi et al., 2013).

3.4. Data Collection Procedures

The study was taken two months to implement. There was only one class and there were two applications at different dates. This class had two hours of pedagogy, each week. Also, two different subjects related to pedagogic content knowledge were applied in this study. The aim was to teach two

different topics of the pedagogical content knowledge in SLTE classes for student teachers via different two methods.

In the first week, the first application were applied in a traditional way by using course books, worksheets and pencils. The topic of the first application was the drawbacks of poor classroom management in SLTE classes. Student teachers participated in each activity in a traditional way, the educator of student teachers explained each point from the book and the application was in question-answer formats. During the second week, an academic achievement test related to the first application was applied in order to learn what extent student teachers have perceived the topic. The academic achievement test included multiple choice questions. On the third week, the second application of the study was applied by using a smart board and two projectors. The topic of second application was the effective ways of classroom management in SLTE programs. Student teachers participated in each activity interactively and the educator of student teachers explained each point from multi-screens. The usage of multimedia technology with multi-screens were aimed to be used fruitfully and effectively in this phase. There were three screens in the course room. In the first screen which was reflected via the first projector on the left, there were pictures related to the topic; in the second screen which was the smart board in the middle, there were presentations related to the topic; and the last screen which was the second projector on the right, there were videos related to the topic. In other words, there were three screens; on the left (first projector), in the middle (smart board) and on the right (second projector) in the course room and each of these screens reflected the different points of the topic. Student teachers' visual and audio intelligences were boosted in this phase and the interactive participations of student teachers were aimed to be maximized during this phase. On the fourth week, an academic achievement test related to the second application was applied in order to learn what extent student teachers have perceived the topic by the techniques of multimedia technology with multi-screens. The academic achievement test will include multiple choice questions. In the fifth and sixth weeks, the interviews for these two applications were done with student teachers. Each student teacher was asked five questions and their answers were recorded in order to let the researcher go back and forth for deep analysis. Students answered the interview questions on their own, and their all answers whether positive or negative were recorded. During the seventh week, the questionnaires were applied in order to have quantitative data from student teachers' perspectives for the use of these two applications. The questionnaires included ten items and each item was calculated for reliability, validity and deviation in terms of the regulations of SPSS. In the eighth week, which was the last week of the study, there were comparison and analyses of these two applications by examining the recordings and questionnaires.

In conclusion, each phase of the study was done with a great care in accordance with the planned procedure in order to carry out an acute and clear research for student teachers' professional development.

3.5. Data Analysis Procedures

All of the data in this study were analyzed both qualitatively and quantitatively because the study has the triangulation research design. The study conducted by a class at different times with different application ways, and both the participants and the classroom's atmosphere was analyzed qualitatively and quantitatively.

The first stage of data analysis was the applications of the study, which were two applications with different aspects of this study. The analysis of these two applications was completely done qualitatively, because the analysis was based on observation, and it gave a great help in terms of analyzing students' attitudes towards the study. To start with, the first application was managed by means of traditional ways and the second application was via the use of multimedia technology with multi-screens. The first application included the traditional way of teaching and its effected on student teachers. While analyzing the first application, student teachers' motivation, participation, critical thinking and deduction skills were taken into consideration and the second application was included teaching pedagogic content knowledge with the help of multimedia technology with multi-screens, and for the analysis of the second phase, some multiple intelligences such as auditory and visual ones were tried to be analyzed qualitatively because student teachers are listening and watching at the same time. Also student teachers' feelings, thoughts, motivation and the degree of engagement in the study are aimed to be analyzed in the second application. Student teachers' skills of reasoning and inferring were also taken into consideration for the analysis of the second application because students watched some

videos, pictures, presentations, and tried to perceive the topic within projectors and a smart board. The second stage of data analysis was the academic achievement tests. In the academic achievement test, there were ten items and each item included five choices. These items were for evaluating student teachers' comprehension of the topic. The two applications of these two academic achievement tests were investigated individually. Then student teachers' scores for each item were enrolled, and the deviation, median and success percentages of the tests were figured out for comparison. The third stage of data analysis was interviews. In these interviews, there were five questions and each question had parallelism among each other. Student teachers' answers were collected and recorded. Then, the same ones were found and analyzed qualitatively. If there were some unique answers, these answers where also taken into consideration and analyzed in accordance with the study, but the assumptions and ideas were given based on these overall same questions. By analyzing the interviews, students' final thoughts, feelings and wishes were aimed to be learnt. The last stage of data analysis was the questionnaires which were effective in gathering quantitative data from student teachers' perspectives. The ten items in the questionnaires were checked and enrolled into the Statistical Package (SPSS) program, and then the quantitative data were evaluated for both validity and reliability in accordance with SPSS. Also standard deviation and median were calculated. In addition, the factor analysis was done using the SPSS program.

To sum up, the study had many phases to be followed and each of them were analyzed separately with academic achievement tests, observation, interviews and questionnaires. Then the results were given qualitatively and quantitatively.

4. ANALYSIS AND FINDINGS

In Table 1, the answers to the questions from the participants' data were analyzed and interpreted using mean, standard deviation and confidence interval test as well as bootstrap analysis. In Table 2, the answers to the multimedia technology related questions were evaluated and interpreted by frequency analysis and then the assumptions were tested. In Table 3, the data obtained from the replies of participants' were subjected to factor analysis, factor loadings, KMO and Bartlest test as well as Cronbach alpha test.

Table 1. Mean, Standard Deviation, Confidence Interval of Multimedia Technology

Multimedia Technology			Bootstrap		
		Statistic	Std. Error	95% Confidence Interval Lower	Upper
Questions					
I prefer multimedia technology to traditional teaching by course books.	Mean	3,5800	,1824	3,2000	3,9400
	Std. Deviation	1,26314	,09408	1,03730	1,41652
I prefer traditional teaching by course books to multimedia technology.	Mean	2,7800	,2214	2,3400	3,2395
	Std. Deviation	1,52917	,08457	1,31878	1,66398
I think multimedia technology with multi-screens is very easy, effective, comprehensible and interactive.	Mean	3,5200	,1871	3,1605	3,8800
	Std. Deviation	1,29741	,08615	1,09567	1,43649
I think traditional way of teaching by course books gives more enthusiasm and interactive.	Mean	2,7400	,2226	2,3000	3,2000
	Std. Deviation	1,53610	,08700	1,32497	1,67198
I don't find multimedia technology effective because it is time consuming.	Mean	3,5200	,2015	3,1200	3,8800
	Std. Deviation	1,40320	,09617	1,17475	1,56762
I find multimedia technology very effective in terms of covering the whole curriculum and topics accurately	Mean	3,4800	,2395	3,0200	3,9400
	Std. Deviation	1,65665	,08932	1,42802	1,77980
I find traditional teaching by course books very effective in terms of covering the whole curriculum and topics accurately.	Mean	2,7400	,2249	2,3000	3,1995
	Std. Deviation	1,54933	,08484	1,34761	1,68317
I can see, understand, criticize, compare and contrast easily by multimedia technology with multi-screens.	Mean	3,6000	,1962	3,2005	3,9800
	Std. Deviation	1,38505	,10654	1,15511	1,56489
I can see, understand, criticize, compare and contrast easily by traditional teaching of course books.	Mean	2,8200	,2420	2,3400	3,3200
	Std. Deviation	1,64986	,07943	1,46310	1,77562
I want to have multimedia technology in our teacher education programs.	Mean	3,7800	,1765	3,4400	4,1395
	Std. Deviation	1,21706	,08564	1,03729	1,36777

Table 1 shows the frequency distributions of multimedia technology levels of student teachers. The arithmetic mean of the expressions (2.74) and Standard Deviation (1.54; 1.53) were lower in the analysis results of the expression. A large part of the participants responded negatively to the statement that "the traditional teaching method in the textbooks is more enthusiastic and interactive and that the traditional teaching textbooks", "The whole teaching program and the subjects are found to be very effective in correctly handling them". At another level, participants were asked the following question about multimedia technology tools; "I want to have multimedia technology in our teacher education programs". This revealed an arithmetic mean of the expressions (3.78) and a Standard Deviation of (1.21).

Table 2. The Comparison of Multimedia Technology

Questions	Frequency	Percentage (%)
I prefer multimedia technology to traditional teaching by course books.		
-Almost Seldom	3	6.0
-Seldom	10	20.0
-Sometimes	6	12.0
-Often	17	34.0
-Always	14	28.0
I want to have multimedia technology in our teacher education programs		
-Almost Seldom	1	2.0
-Seldom	9	18.0
-Sometimes	10	20.0
-Often	10	20.0
-Always	20	40.0

The aim of the study was to increase the role of multimedia technologies on multimedia screens, the pedagogical content knowledge of student teachers and the curriculum of textbooks and worksheets. As Table 2 shows, participants often prefer multimedia technology (34%) to traditional education (28%). Furthermore, the participants always want to learn multimedia technology training programs (40%). The result of these values is that student teachers prefer multimedia technology compared to traditional education.

Table 3. Factor Analysis

Factors	Item	Factor Loadings
Multimedia Technology N=50; KMO=0.910; Bartlett's Test of Sphericity =642.246,P=0.000 Total Variance Explained=%7.611, Factor Loadings ≥ 0.50		
Multimedia Technology (α=0.82; V.E=%84.57)	I prefer multimedia technology to traditional teaching by course books.	0,847
	I prefer traditional teaching by course books to multimedia technology.	0,875
	I think multimedia technology with multi-screens is very easy, effective, comprehensible and interactive.	0,749
	I think traditional way of teaching by course books gives more enthusiasm and interactive.	0,918
	I find multimedia technology very effective in terms of covering the whole curriculum and topics accurately	0,902
	I find traditional teaching by course books very effective in terms of covering the whole curriculum and topics accurately.	0,901
	I can see, understand, criticize, compare and contrast easily by multimedia technology with multi-screens.	0,767
	I can see, understand, criticize, compare and contrast easily by traditional teaching of course books.	0,834
	I want to have multimedia technology in our teacher education programs	0,818

The KMO value and the Bartlett test were used to check whether the factor analysis could be performed on the statistical attitude scale items. When the KMO value is 0.91 and the Bartlett test is at α = 0,000, it is assumed that the sample size is sufficient to perform factor analysis. As shown in Table 3, the compliance values of the measurement model is good. Factor loads appear to be significant because the disclosed mean variance value exceeds the specified minimum value of 0.50 (Fabrigar et al., 1999)

It is expected to see a great change between the beginning and end of the study because students experienced different methods, applications and ways during the study. Therefore, a dramatic switch of the comprehension of student teachers throughout the study is not coincidence. With regard of the observations about the applications done in accordance with the first research question, it is thought that student teachers found the use of multimedia technology with multi-screen more advantageous than the traditional use of course books because student teachers engaged in the learning process more actively and they might feel more motivated. In accordance with the second and third research questions, student teachers' attitudes towards the study might be anticipated very easily. In the first application of the study, most of the student teachers might not feel enthusiastic for the traditional method of the application because they tried to catch the main points of the topic in boring and tiring ways. They feel unmotivated and always check their watches for the end of the session; however, more enthusiasm was expected for the second application because there was an interactive way of teaching, and students get engaged into the learning process very dynamically thanks to the multimedia technology with multi-screens. In addition, using multimedia technology in teacher education

programs is helpful for a full integration and interaction among student teachers as major Office of Technology Assessment (OTA) (1995, 1988) reports asserted that educators of student teachers and educational researchers usually cite the classroom teacher as central to the full integration of technology in our schools.

With regard of the interviews done in accordance with the research questions, thanks to interviews which are dramatically beneficial in gathering information about student teachers' attitudes and perspectives for the study, we can understand student teachers' perspectives clearly. In accordance with the first research question, student teachers may express the advantageous use of the multimedia technology with multi-screens because they may feel anxious and bored with the usage of course books in the learning process. In accordance with the second research question, student teachers may express more positive thoughts for multimedia technology with multi-screens than the use of traditional ways in teacher education programs. In accordance with the third research question, most educators supported the use of multimedia technology in teacher education because they were helpful for educators to overcome student teachers' fears, concern and anxiety in the education programs (Bitner & Bitner, 2002).

With regard of the questionnaires done in accordance with research questions, all of the students expressed their thoughts on the items and they assessed each item with a number such as 1,2,3,4 and 5. Then the results were converted into statistical evaluations which will show the percentages, mean, validity and reliability. Valid and reliable results were expected from the study in accordance with student teachers' answers and it is also hoped that reactions and thoughts of the student teachers were evaluated thoroughly in the questionnaires. Furthermore, it is expected that student teachers participate more in the courses. In accordance with the first research questionnaires, it is anticipated that most of the students give the highest grades for the advantages the use of the multimedia technology in teacher education programs in order to have a fruitful teaching environment. In accordance with the second research question, students may not show negative reactions for the use of multimedia technology and they may develop favorable attitudes towards the multimedia technology; therefore, they choose the items suitably. In accordance with the last research question, it is expected that most of student teachers find the use of multimedia technology as a requirement in teacher education programs as it is mostly believed that multimedia technology is effective in demolishing learning impediments. It is also helpful in providing teachers with knowledge of the very basics of computer use. Beichner (1994) stated that the multimedia technology is influential for knowledge and emotions of the students who study science subjects in their programs.

6. DISCUSSION AND CONCLUSION

Effective learning opportunities have been provided and improved upon by the innovations in multimedia. Teachers have effectively enhanced their teaching methods through the adoption of modern pedagogical technologies which as reasonably advanced educational theories to achieve their curriculum goals. Therefore, the utilization of multimedia technologies facilitates an effective understanding of the learning materials, the teaching process, and increase students' interest to study. These new approaches do not only positive impact on the quality of education, but also to other necessary educational conditions. This implies that teachers should be armed with recent multimedia teaching skills and armed with the knowledge of new technologies for optimal performance in schools.

Interactive multimedia, encourages students to play an active role in the field of knowledge. Providing unlimited space for reinforcement and implementation, is of great importance in terms of increasing the confidence of individuals in their abilities. It is thought that the various benefits of using multimedia technologies in education will be seen over time. With the utilization of these benefits, its usage increases significantly every year. For example; the Baptist Medical Center of Wake Forest University has a wireless accessible handheld computer for approximately one hundred students in the third year of study, allowing access to both reference and patient information when needed (Bulun et al., 2004). In this way, students who have the chance to access information where and when, offered a situation where both students and teachers were satisfied. The value of any multimedia technology that contribute to this learning will be much higher than its real value. For this reason today, the use of multimedia technology for teacher training programs has become an important element. The application of multimedia and technology devices in teacher education programs creates a more authentic learning environment. Multimedia technology's have the ability to integrate multi-screen

content, qualities and skills into the teacher's learning experience which provides a large amount of information flow in multiple areas. In the context of research questions, when we look at the results of interviews and analyzes, student teachers has been found to have more positive thoughts for multimedia technology with multi-screens than the use of traditional ways in teacher education programs.

In conclusion, most of the findings and implications reflect the positive perspectives about the use of the multimedia technology with multi-screens compared to the traditional use of course books because multimedia technology is very effective in boosting student teachers' thinking, analyzing, reasoning, deduction, self-awareness skills. Conversely, SLTE will create a central role towards an understanding of the key concepts of this enterprise, including teachers, teaching, and the nature of education.

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