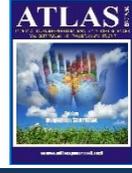




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## AN INVESTIGATION OF ATTITUDES OF PRESERVICE TEACHERS TOWARDS USING TECHNOLOGY IN COURSES

### ÖĞRETMEN ADAYLARININ DERSLERDE TEKNOLOJİ KULLANIMI İLE İLGİLİ TUTUMLARININ İNCELENMESİ

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#### ABSTRACT

This research study aimed to investigate the attitudes of preservice teachers' towards using technology in courses. The importance of this topic was underlined in the comprehensive literature review that highlighted the existing debate between technology being a vital aid and helpful in colleges. The 276 student participated from Faculty of Education at The Manisa Celal Bayar University, were all enrolled teacher training programmes and had access to technology. In the survey, there were two different sections of questions. The first section was about the demographic characteristics of the participants. The second section consisted of twelve questions about how using technologies tools helped in classrooms. Participants responded on a 5-point Likert-type scale, from 1 (Strongly disagree) to 5 (Strongly agree) Likert Scale of 1-5, with 5 having the highest value was used in the survey. The study results provided conclusive evidence that students viewed the use of technology as an effective, helpful way of learning and improve the learning process in the classroom.

**Key words:** Preservice teachers, attitude, technology

#### ÖZET

Bu araştırmanın amacı, öğretmen adaylarının derslerde teknoloji kullanımına karşı tutumlarının incelenmesidir. Üniversitelerde teknoloji kullanımının önemli bir destek olduğu ile ilgili devam eden tartışmalar bu konunun önemini göstermektedir. Bu araştırmaya Manisa Cella Bayar Üniversitesi Eğitim Fakültesi'nde öğretmen eğitimi programlarına kayıtlı ve teknoloji erişimine sahip 276 öğrenci katılmıştır. Ölçekte iki farklı tür sorular bulunmaktadır. Birinci bölümdeki sorular katılımcıların demografik özellikleri ile ilgili olup, ikinci bölümde derslerde teknolojinin kullanımının katkıları ile ilgili on iki soru bulunmaktadır. Katılımcılar 5 li likert türü ölçeğe 1(kesinlikle katılmıyorum) den 5 e (Kesinlikle katılıyorum) kadar görüşlerini belirtmişlerdir. Ölçekte 1-5 arası değer bulunmakta, en yüksek puan 5 olarak yer almaktadır. Çalışma sonuçları öğrencilerin derslerde teknolojinin kullanılmasını önemli ölçüde yararlı, öğrenme sürecini katkı sağladığı yönünde görüş bildirdikleri görülmüştür.

**Anahtar kelimeler:** Öğretmen adayları, tutum, teknoloji.

#### 1. INTRODUCTION

Although the incorporation of technology into the education system has been seen as necessary and vital to the development of society as a whole, it is also stressed that there is a current debate about the role that technology should play and whether the impact is always positive or if there are certain challenges involved and problems that exist in applying technology to the teaching and learning process (Selwyn, 2011; Domine, 2009).

The work by Vrasidas and Glass specifies that “a lack of technology training, resistance to, negative attitudes toward technology and instructional changes, as well as personal biases are important factors and certainly, teacher's beliefs and practices are instrumental in how technology is used in the classroom” (2005, p. 33).

The use of technology within the education system and the classroom in particular has been the subject of intense debate in recent years (Zhang & Barber, 2008). Initially the debate focused on whether it was possible to integrate technology into the classroom without disrupting the learning process (Maddux & Johnson, 2005) and whether technology should even be considered as a part of the teaching and learning process (Heide & Henderson, 1994). However, with the growth of technology's importance to society, as well as the belief that all children now and in the future will need to apply their technology skills during their working adult life, this debate has become moot

(Cennamo, 2012). The latest debate is the impact of technology in the classroom and what obstacles there are to its successful implementation, with the knowledge that these obstacles need to be worked out and resolved due to the relative importance of using technology in society (Cennamo, Ross & Ertmer, 2010). It was also found that there were numerous problems within this application of technology in the classroom, not least because of the fact that teachers were not always ready for its use and lacked training and confidence when using technology (Petrina, 2007). This lack of confidence and training meant that students suffered greatly from using technology because the literature notes that it was simply used as an expensive way of projecting images, rather than allowing them to embrace technology and learn how to apply it in their own learning. A study by Evertson and Weinstein (2006) indicated that "the problem of managing technology in the classroom is one of the greatest challenges mentioned by teachers" (p. 543) while Morella (1997) stressed that teachers lacked training and were often less skilled in using technology than their students, meaning that many were afraid to implement technology in the classroom and the learning suffered as a result. The main obstacles in the classroom environment with regard to the use of technology tend to revolve around the teacher's lack of training, leading to the view that the application of technology is not implemented to its maximum potential (Hanson-Smith & Rilling, 2006). This view is supported by a range of scholars within the scholarly debate on the subject. Recent research by Adelsberger, Kinshuk and Pawlowski (2008) stress that in developing countries, the three most "frequently listed problems are large classroom sizes, lack of infrastructure and inadequate teaching staff" (p. 424).

However, these issues are not simply limited to developing countries. Kobayashi's (2008) work notes that although developed nations have smaller class sizes, it is often true that they still lack the infrastructure and that teachers (particularly those that are older and have not had recent training) are far too out of touch with technology to be able to apply it successfully, meaning that students often receive an imbalanced education in terms of their knowledge of technology. The work indicates that the major problem with integrating technology is that "as technologies become increasingly important to school education, teacher-training is challenged by insufficient access to suitable software and a

lack of knowledge about the classroom use of IT (Information Technology)" (2008, p. 16). The inadequate training for teachers can seriously impact upon the overall success of the implementation of technology in the classroom and this should be viewed as one of the major obstacles apparent in the present day (Chiazzese, 2005). In this way, the debate has shifted from the view that technology was not important to the belief that it is central to societal development and that the education system is woefully unprepared for its implementation. Despite the importance of the lack of training, it is possible that there is another more important obstacle to the successful implementation of technology in the classroom. However, perhaps the most important aspect is touched upon by (Vrasidas & Glass

2005). There also are problems associated with the hardware when using technology in the classroom, rather than simply idealistic issues or problems involving the ability to use technology appropriately by both students and teachers. A study by Pass (2008) stated that

there are hardware concerns with the use of technology, with problems including "glitches with the technology, the freezing of programs while attempting to run them, difficulties accessing files, students storing work on servers and forgetting passwords and downed equipment occurring for various reasons" (Pass, 2008, p. 83). Moreover, Pass notes that when using technology, these reasons included "the failed attempt to Access and use video and audio streaming because of too little bandwidth, electricity outages, programs freezing up and sometimes a lack of computer expertise resulting in lost data" (2008, p. 83). Evidently, from this statement the belief emerges that there are numerous obstacles relating solely to the hardware and software of technology systems rather than external factors such as the ability (or lack of) of the teacher in charge. The viewpoint that hardware issues are often serious problems in the classroom that has attempted to integrate technology is supported by Cennamo (2012). Her work identifies that "it would be simple if all teachers had to do was install a piece of hardware or software and then it would operate forever without any problems. Classroom technologies though like all technology needs to be updated, regularly monitored and can suffer from a range of problems that can render their use impossible at a moment's notice in the classroom" (2012, p. 202). These two studies clearly indicate that even if teachers are well trained and can use the technology successfully in the classroom, they are still often victims of hardware and software failures due to the limited lifespan of some technology and the lack of knowledge in terms of fixing it. Moreover, even simple problems such as the lack of power could result in a lesson built around the use of technology being rendered useless at the last minute, with the teacher needing to refer back to traditional methods of teaching and learning. Having identified the debate existing over the use of technology in education, it is necessary to view how its use can be implemented by teachers in the classroom.

Within this context, the purpose of this study is to examine the use of technology and attitudes towards technology among college students who enrolled Teacher training programmes.

The main research questions are:

- 1- To what extent do students perceive technology as useful to help them learning.
- 2- Is there significant differences according to variables such as;
  - a) gender,
  - b) department,
  - c) grade level

## 2. RESEARCH METHODOLOGY

### 2.1. Participants

Participants of this study included 276 preservice teachers grade 2, 3, and 4. This study survey took place at Faculty of Education at Manisa Celal Bayar University. The respondents included 118 male students (43%) and 157 (57%) female students are shown Table: 1 below.

Table 1. The Demographic Characteristics of The Participants

		N	%
Gender	Male	118	43
	Female	157	57
Department	Science Teaching Training	67	24
	Social Teaching Training	74	27
	Turkish Teaching Training	32	12
	Primary Teaching Training	101	37
Grade Level	Grade 1	-	-
	Grade 2	108	39
	Grade 3	106	38
	Grade 4	63	23

## 2.2 Procedures

The study used survey method to explore the use of technology and students' attitudes toward technology in the classrooms. 276 students completed the questionnaire as the surveys were given out and collected during a 15- 20 minute break in the classrooms at Manisa Celal Bayar University. Students who indicated their willingness to take part in the study were asked to complete the the scale.

## 2.3 Instruments / Measures

In the survey, there were two different sections of questions. The first section of the survey included demographics questions as they relate to the respondents' gender, grade of education and department. The second section consisted of twelve questions about how using technologies tools helped in classrooms.

## 3. RESULTS

Cronbach alpha reliability of the scale was found 0.71.

This part presents the major findings from the survey that was implemented in grades two, three and four of the classes at Faculty of Education .

Table : 2 – The mean and standart devitation of questions of related to attitudes of preservice teachers towards using technology in courses.

		Mean	Std. Deviation
1	I get more actively involved in courses that use technology	4.66	1.17
2	By the time I graduate, the technology have used in my courses will have adequately prepared me for the workplace	4.29	1.34
3	I skip classes when materails from couses ara available online	4.11	1.25
4	When I entered college, I was adequately prepared to use technology needed in my courses.	3.83	1.37
5	Technology helps me ready for educational plans for future	4.84	1.05
6	Technology makes me feel more connected to other students.	4.62	1.16
7	Technology makes me feel more connected to instructor	4.39	1.22
8	Technology elevates the level of teaching	4.87	1.03
9	Technology helps me achieve my academic outcomes	4.37	1.28
10	Technology helps increase the level of learning	4.33	1.28
11	I am more likely to get involved in a campus activity when made aware of it through technology.	4.36	1.29
12	Technology decrease the cost of education	3.65	1.55

The study results provided conclusive evidence that students viewed the use of technology as an effective, way of learning improve the learning process in the classrooms. An analysis t-test was applied to data in order to test whether the means of attitudes towards technology based on participants' gender is significantly different or not. According to the test, significant difference has not been found. An analysis of variance (ANOVA) applied to data in order to test whether the means of attidues level based on participants department and grade level are significantly different or not. According to the test there isn't a significant difference among departments and grade levels.

## 4. LIMITATIONS AND NEED FOR FURTHER RESEARCH

As is the case with any research, readers need to consider the presented results within the context of limitations. The following recommendations for research are based on the study findings:

1- This new research could be applied to other college students from different universities nationally and internationally. Similar research should be conducted and applied to a larger population sample to be able to generalize these findings with any great success.

2- Further studies should look at elementary or intermediate schools for attitudes of students towards technology. It would perhaps be more appropriate to design a pilot study in which two classrooms develop their academic achievement, with one of the classrooms using a host of technology tools in their learning while the other does not. It would then be possible to gain a comprehensive comparison of how students that are exposed to technology in the classroom are helped and participate in lessons when placed next to a group of students that do not have this access.

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