DETERMINATION OF APPROACHES OF TEACHERS TO INFORMATION AND COMMUNICATION TECHNOLOGIES: IMPLEMENTATION OF TECHNOLOGY ACCEPTANCE MODEL TO MALATYA, DARENDE*

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ABSTRACT

The changing and developing educational methods and techniques give priority to the technology based education and learning methods. Both the students and their teachers react to these developments and methods that have emerged in the last 25 years and there is a limit to the literature that evaluates the way they perceive these methods. The purpose of this research is to show teachers' tendency to use information technology and to use information and communication approach by using Technology Acceptance Model (TAM). By doing this our goal is to find out whether technological development is used effectively in a productive way or not. On the other hand, as a result of this study our aim is to understand the feelings and expectations of teachers while they are using technological devices.

In the study, 143 teachers working in the province of Darende in Malatya answered the survey and the results were analyzed and we tried to determine the attitude, perception style and how they used this technology in accordence with the participants' responses to the use of Information and Communication Techniques.

Consequently, according to the answers given to the survey, while there is a significant relationship between the perceived usefulness and the facilitating situations and the variables, on the other hand there is not a significant relationship between the types of schools that teachers are working and the perceived attitudes towards the use of information technology in the formation of behavior.

Keywords: Technology Acceptance Model, Educational Methods, Teachers' Use of Technology

ÖĞRETMENLERİN BİLGİ VE İLETİŞİM TEKNOLOJİLERİNE YAKLAŞIMLARININ BELİRLENMESİ: TEKNOLOJİ KABUL MODELİNİN MALATYA, DARENDE'DE UYGULANMASI

ÖZET

Değişen ve gelişen eğitim öğretim yöntem ve teknikleri teknoloji tabanlı yöntem ve tekniklere öncelik vermektedir. Hem öğretmenler hem de öğrenciler son 25 yılda ortaya çıkan bu gelişme ve

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yöntemlere tepki vermektedirler ve onların bu yöntemleri nasıl algıladıklarına dair alan yazında da sınırlılık söz konusudur. Bu araştırmanın amacı Ö-TKM- Öğretmen Teknoloji Kabul Modelini kullanarak öğretmenlerin bilgi teknolojilerini kullanma eğilimleri ve bilgi ve iletişim teknolojilerine yaklaşımlarını göstermektir. Bunu yaparken amacımız teknolojik gelişmelerin verimli bir şekilde kullanılıp kullanılmadığını ortaya çıkarmaktır. Diğer yandan bu çalışma sonucunda öğretmenlerin teknolojik aygıtları kullanırken hissettiklerinin ve beklentilerinin anlaşılması hedeflenmiştir.

Bu çalışmada Malatya'nın Darende ilçesinde çalışan 143 öğretmene ulaşılmış ve sonuçlar, katılımcıların Bilgi ve İletişim Teknolojilerinin kullanımına dair verdikleri yanıtlarla onların bu teknolojileri algılama tarzları ve kullanım biçimleri belirlenmeye çalışılmıştır.

Sonuç olarak, ankete verilen cevaplara göre algılanan kullanışlılık ile kolaylaştırıcı durumlara yönelik tutum arasında anlamlı bir ilişkinin varlığından söz etmek mümkünken öğretmenlerin davranışlarının biçimlenmesinde, çalıştıkları okulların türleri ile bilgi teknolojilerinin kullanımına yönelik algılanan tutumları arasında bir ilişkiden söz edilemeyeceği ortaya çıkmıştır.

Anahtar Kelimeler: Teknoloji Kabul Modeli (TAM), Eğitim Metotları, Öğretmenlerin Teknoloji Kullanımı

INTRODUCTION

The growing influence of technology since the industrial revolution has been present in education over the last years, though not as much as individual technology-based areas such as banking or engineering. Currently, students in schools are seen as digital natives with extensive experience of using social and other new media.

The use of personal computers and the subsequent use of the internet, which started in the 1970s and continued after the 1990s, increased the number of users with the spread of the web sites and channels and reached the point where the social media became operative in the 2000s (Vural and Bat, 2010:3).

According to Manovich, many different products form the content of the new media concept, from films prepared in 3D environment to TV programs broadcasted on computer. The writer has examined the use of computers and related technologies in various media in a synergistic manner in his work, which states that the products printed on paper are not covered in this context while the products presented in the computer-related media, according to the popular definition, are included in the definition of the new media, and indeed the content of the new media concept, has covered many products offered both on paper and on computer. (Manovich, 2001).

In light of all these developments, in cooperation with the Ministry of National Education and other institutions, new targets have been developed in order to keep pace with the technological progress in education. Presentation of information about the school's student life, www.eba.gov.tr web site and FATİH project and presentation of education and training materials by using e- okul portal which is used in 2007 (MEB, 2007) , tablet computers distributed to students and teachers, and smart boards presented in classroom use, form the technological hardware constitute the infrastructure of these goals.

The Technology Acceptance Model (TAM) shows how users adopt and use a particular technology (Holden and Rada, 2011). Despite being applied in many different disciplines, the Technology Acceptance Model developed by Davis (1989), which is accepted as the basis in this study, is mostly applied to students in studies carried out in Turkey and it seems that the researches that examine how teachers accept technology and the effects on acceptance intentions are inadequate.

In order for researchers and practitioners to take acceptable steps in an ideal model, it is also necessary that this model be not purely predictive but also explanatory. For this reason, the main focus of the TAM is to explain the influence of external factors that influence intentions, attitudes and internal beliefs (Davis et al. 1989: 985).

Technology Acceptance Model developed by Davis (1986) is shown in Figure 1. Hypotheses in the study will be tested according to this model framework.

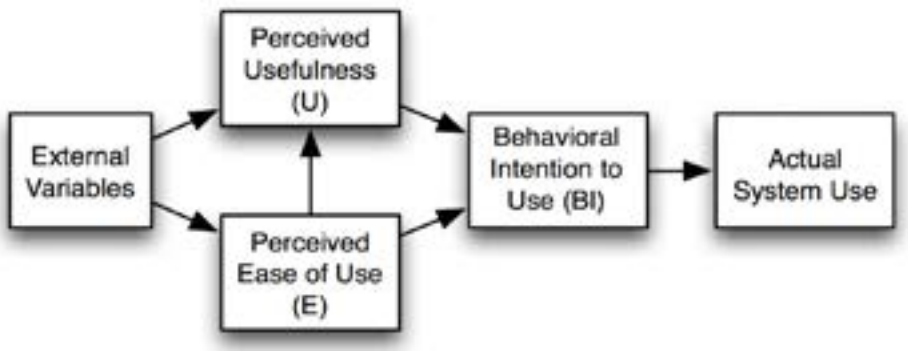

Figure 1: Venkatesh, Viswanath; Davis, Fred D (1996). A model of the antecedents of perceived ease of use: Development and test Decision Sciences; Summer 1996; 27, 3; pg. 453.

The Technology Acceptance Model suggests that the individual accepts or rejects the use of information technologies, that is, the primary factor that determines actual use is the behavioral intent of the individual, and that this intent has an important role on the individual's tendency towards using technological products or services. The Technology Acceptance Model indicates that the perceptions of usability and ease of use towards information technology are influential in the development of the individual's tendency to use information technologies. The behavioral intent of the individual is indirectly influenced by the perceived usefulness and ease of use, and these indirect effects are based on the individual's tendency towards use. External factors play an important role in the formation of perceived usefulness and ease of use perceptions of the individual (Çivici and Kale, 2007).

1. CONCEPTUAL FRAMEWORK

The main purpose of using technology in education is to contribute to the cognitive,

emotional and psychomotor development of students by providing learning. For this reason, it can be argued that teachers' use of technology and the knowledge and skills that the teacher possesses are an important factor in evaluating the use of technology. Nowadays, when problems related to technological equipment are solved more easily and quickly, there is more focus on teachers' use of technology effectively.

1.1. Computer and New Communication Technologies

Internet usage, which started in the 1970s and continued rapidly after 1990s, has increased the number of users with the spread of the web sites and channels, has reached such a point that e 2000s all people have been interested in it when the social media became active (Vural and Bat, 2010: 3).

With the simultaneous development of the computer and printed recording period, computer technologies started to be used in the recording process from the second half of the 20th century and the products produced in this environment were categorised as New Media. Although the new media concept is described in media such as CD-ROM, HTML, streaming media, digital video editing, network applications, DVD video, multimedia, according to Manovich, many different products can be included, ranging from movies made in 3D environment to TV programs broadcast on computer. Therefore, it can be said that expressing the media as new media is related to developments in the communication sector. In the communication sector, computer capacities have increased the use of new communication technologies by increasing the possibilities of storing information more rapidly than in the past, increasing the possibilities of internet service providers, decreasing the value of computer equipments in proportion to digital transformation.

Rapid diversification and development of technological products has also led to a certain need in every aspect of life. Naturally, users also need to educate themselves in the direction of using these technological products in order to prepare themselves for these developments. Therefore, for the individuals firstly it is necessary to accept the technology, to know the benefits to be provided, but also to be free of prejudice against the technological products. The reluctance of individuals to accept new information technology products and systems and to use them in their social lives and in their professional fields undoubtedly leads to the fact that the efficiency expected from these systems would not be at the desired level (Serçemeli and Kurmaz, 2016: 44). For instance, a customer representative working in the banking sector may think that using a smartphone or a communication program like Whatsapp unnecessary. Davis and Venkatesh (2004) emphasize that the information systems projects developed in a study fail 24% and that the human factor is the most important factor in the success of information systems. In the failure of these systems, the share of technological problems in total problems is less than 10%. Moreover, systems that serve users' expectations are more successful (Aras et al.,

2015: 343). This shows that technology becomes a useful and functional structure as long as it reaches its users and cooperates with them. For example, the ICQ program, which provides people with periodic free communication for a period of time, has not received much interest from users. This may be the result of the fact that the program was not fully responsive to the needs of users or that people were not ready to use this technology in the period it was presented.

Just like the rest of the world, the use of technology in many occupational areas is increasing in our country. This seems necessary not only for acceleration of work and the reduction of bureaucracybut also for a more productive work. National Education Ministry and teachers are again confronted as a part of this necessity. The use of technology in education is sometimes seen as a necessity for Internet-based educational environments, sometimes for simultaneous follow-up of new professional developments, and sometimes as state policy. Naturally, teachers are expected to use these technologies and adapt them to their professional work. In this study, the teachers' approaches to occupational field use of technology and the factors affecting it were tried to be discovered.

1.2. Technology Acceptance Model and Concepts Used in the Model

Technology Acceptance Model (TAM), was developed by Fred D. Davis in 1989. The model based on the Critical Theory of Behavior, prepared by Fishbein and Ajzen, was developed to clarify the behavior of information technology users and to provide a theoretical explanation for determining the determinants of computer acceptance. (Davis et al., 1989: 985-986). Davis (1989: 319-320), with the Technology Acceptance Model, has attempted to explain how people or society have incorporated or embraced the use of technology in their lives. In Davis's model, some theories about why or how this new technology will be used when an individual or society is presented with the use of a new technology. One of these is Perceived Usefulness (PU) and the other is Perceived ease-of-use PEOU. In the perceived usefulness, it is foreseen that the individual will realize or think that he will provide a benefit (increase in performance, etc.) in his life or work owing to the new technology. In the Perceived Ease of Use, the convenience of the new technology comes to the forefront. However, many external factors play a role in the introduction of technology into human life. These external factors may also influence perceived usefulness and perceived ease of use. The perceived usefulness and ease of use can be followed by intent to use or behavioral intent. This shows that people can sometimes take direct use of technology after perceived usefulness and perceived ease of use, but sometimes they can evaluate technology and reveal intention to behavior after a while.

It is worth mentioning briefly the important variables of the Technology Acceptance Model.

Attitude: Attitudes refer to the views of individuals as they pertain to another person, object, behavior or a policy. The attitude of one person represents his own assessment of a matter (Ajzen and Fishbein, 1977: 889). Taylor and Todd (1995), reported that attitude was a strong motivating factor in predicting the intention to use information technology in their work (Özer et al., 2010).

Perceived ease of use: Describes the degree to which an individual believes in performance enhancement he or she is willing to perform when doing certain tasks and solving problems (Davis, 1989: 320).

Perceived Usefulness: This concept refers to the tendencies and thoughts of individuals as they use a technology to increase their performance at their works (Davis, 1989: 320).

Behavioral Intention: This refers to the degree to which the person consciously plans to move or not to move in a certain way in the future (Jeffrey, 2015).

Actual Behavior: The frequency and intensity of usage of information technology products by individuals (Çivici and Kale, 2007: 120).

The Ministry of National Education has provided the opening of computer laboratories and the reorganization of curriculums in schools in order to use computers in educational environments. In parallel with this aim, in-service courses have been given to teachers regarding the use of computer technology. The Bologna Process (YÖK, 2009) foresees that prospective teacher candidates will use information and communication technologies effectively and that current teachers' information and communication technologies can be effectively used according to the principles of "general qualifications of the teaching profession" (MEB, 2009) published by the Ministry of National Education (Bahar, Uludağ and Kaplan, 2009). In addition to all this, keeping up with new technology and using these technologies effectively is not easy for our teachers. Because it seems like a negative situation for some of our teachers to abandon the teaching methods they are used to and to plan and maintain teaching activities by using completely different tools. The adaptation of teachers and prospective teachers to information technology and the studies on the use of these technologies do not seem very positive. Oakes & Martin (2002) and Haydn & Barton (2007) state that teachers do not use technology to enhance learning in the education and training process, and that they do not feel ready to use these technologies. Meyers (1999) stated that it was one of the reasons for the failure of implementing students to be elected instead of teachers as the first group to focus on adapting IT to schools. Teo (2010) has developed a technology adoption scale for prospective teachers to explain the acceptance of technology for pre-service teacher candidates. However, although it is important to investigate prospective teachers before they start their career, there is a need for measuring tools developed for the profession, as the environment, the practices and the pressures they are exposed to are not sufficient to understand how the profession teachers are adopting and using Information and Communication Technologies (Ursavaş et al., 2014).

2. METHOD

2.1. The aim and importance of the research

Along with developing technology, changing and evolving needs manifest themselves in every aspect of life. The development of Web 2.0 tools, which allow the use of interactive applications of information and communication technologies, has made it as important as books and notebooks in the field of education. According to Ursavaş, Şahin and McIlroy (2014), although the Technology Acceptance Model developed by Davis (1989) has been applied in many different sciences, it has been observed that most of the studies, especially in Turkey, are applied to the students and that the teachers have accepted the technology, but the studies that investigate the effects on it are inadequate. The purpose of this research is to demonstrate the reasons for using information technology in teaching using Technology Acceptance Model. The relationship between the perceived usefulness, perceived ease of use, attitudes towards use, intentions towards behavior and behavioral attitudes were tried to be tested through TAM.

2.2. Limitations

It has emerged that some of the teachers are not willing to participate in such volunteer work because of reasons such as their distance from Information Communication Technologies, their inability to use these tools, and their prejudice against responding to the questionnaire. For this reason, the study is limited to teachers who respond to the questionnaire sent to the target group set on the internet. It can be said that these teachers, when they accept to answer the questionnaire, actually have positive attitudes towards technology. This work is limited to teachers who work in the province of Darende, Malatya. It can be applied on a larger scale so that the results can be generalized to teachers working in Turkey. Teachers' attitudes towards technology adoption may also vary according to geographical location.

2.3. Research Hypotheses

The following alternative hypotheses have been identified within the framework of the research objectives and these hypotheses have been tested with statistical analyzes. The hypotheses are prepared according to the research of Özer, et al. (2010).

Hypothesis 1. There is a significant relationship between the perceived usefulness (PU) and the facilitating situations (FS) in the formation of teachers' behaviors for information technology use.

Hypothesis 2. There is a significant relationship between teachers' attitudes toward use and the year they spent in the profession for the purpose of using information technology.

Hypothesis 3. Perceived Usefulness, positively influences attitudes towards use in the formation of teachers' behavior toward information technology use.

Hypothesis 4. Perceived Usefulness, positively influences behavioral intent in the formation of teachers' behavior toward information technology use.

Hypothesis 5. The gender of the teachers is influential on the attitude toward use in the formation of behavior towards information technology use.

Hypothesis 6. Perceived ease of use positively influences attitudes towards use in the formation of teachers' behavior toward information technology use.

Hypothesis 7: There is a negative relationship between the Behavioral Intent for teachers using information technology and the Technological Confusion they perceive.

Hypothesis 8: There is a negative relationship between Behavioral Intent and Anxiety for teachers' use of information technology.

Hypothesis 9: There is a relationship between the type of school teachers work on and the Behavioral Intent (DN) for information technology use.

2.4. Research model, universe and sample group

In this study, Survey model was applied and questionnaire technique was applied according to the model methods (Kaptan 1993: 150). The questionnaire was prepared as an online questionnaire. Later on, 531 teachers working in 42 state schools affiliated to MoNE in the province of Darende, Malatya, were sent via mail and 143 valid feedbacks were received. The survey method is important in terms of reaching the objective findings and carrying out the feedback feature. With this method, teachers' approaches to Information and Communication Technologies, their motivations and emotions at the time they use these products or applications have been tried to be presented based on scientific data.

2.5. Survey Application, Data Collection - Data Analysis

For this study, the online questionnaire applied to 531 teachers working in 42 public schools in the province with the permission from the Darende District Directorate of Education was answered by 143 teachers. The questionnaire consists of two parts. The first part contains demographic questions. The second section consists of 37 questions consisting of a 5-point likert measurement system that includes perceived usefulness, perceived ease of use, attitude, intention and actual behaviors for

information technology use. The Technology Acceptance Model scale for teachers used by Ursavaş, Şahin and McIlroy (2014) was used in the study.

3. INTERPRETATION OF FINDINGS AND DATA

The questionnaire prepared to determine the teachers 'perceptions of using Information and Communication Technologies and the attitude they developed against this behavior was applied to the Teachers' Technology Acceptance Model (T-TAM) teachers working in the province of Darende, Malatya**.** There are 531 teachers in public schools in MoNE in the district. 143 teachers participated in the questionnaire survey applied on the internet and 143 valid responses were received from participants. The demographic characteristics of the teachers who participated in the survey are shown in Table 1, Table 2, Table 3, Table 4 and Table 5.

3.1. Demographic Information of Participants

Gender	Frequency	Percentage	Valid Percentage
Male	77	46,2%	46,2%
Female	66	53,8%	53,8%
Total	143	100,0%	100,0%

Table 1: Gender

It is seen that 53.8% (77) of the 143 teachers who participated in the survey were males and 46.2% (66) of them were female. It is seen that the result of a test according to sex, in which the difference between sex distribution is not very high, will not affect a certain sex.

Age	Frequency	Percentage	Valid Percentage
22-30 years	47	32.9%	%32,9
31-35 years	34	23,8%	23,8%
36-40 years	31	21,7%	21,7%
41-45 years	14	9,8%	9,8%
46 and over	17	11,8%	11,8%
Total	143	100,0%	100,0%

Table 2: Distribution of participants by age.

Looking at the age distribution of participating teachers, it is seen that 32.9% of them are young teachers who have started their profession in the ages of 22-30 years old. It is seen that 23.8% of the participants are in the age range of 31-35 years, 21.7% of them are between the ages of 36-40 and 9.8% are in the age range of 41-45 years and 11.8% are over 46 years old.

Moving from this, we can say that there is not a big gap between the age intervals of the teachers who participated in the survey in the province of Darende, and that even a large part of the teachers can be evaluated in the young and middle age class.

Time	Frequency	Percentage	Valid Percentage
0-5 years	44	30,8%	30,8%
6-10 years	38	%26,6	%26,6
11-15 years	24	%16.8	%16.8
16-20 years	20	%14,0	%14,0
21 years and over	17	%11,8	%11,8
Total	143	%100,0	%100,0

Table 3: Distribution of participants according to their teaching experience

Teachers who participated in the survey had 30.8% (44) 0-5 years, 26.6% (38) 6-10 years, 16.8% (24) 11-15 years, 14% (20) 16-20 years, and 11,8% (17) have 21 years or more of professional experience. The fact that 30% of the participants have completed at most 5 years in the profession indicates the existence of a young person who is familiar with technology. The distribution of the participants in the sample job is close to each other in terms of categories.

Branch	Frequency	Percentage	Valid Percentage
German	2	%1,4	%1,4
Phisical Education	4	%2,8	%2,8
IT	3	%2,1	%2,1
Biology	3	%2,1	%2,1
Geography	4	%2,8	%2,8
Child Development	1	%0,7	%0,7
Religion Culture and Ethics	10	%7,0	%7,0
Philosophy group	1	%0,7	%0,7
Science	8	%5,6	%5,6
Physics	2	%1,4	%1,4
Clothing production technology	1	%0,7	%0,7
Visual Arts	5	%3,5	%3,5
English	9	%6,3	%6,3
Chemistry	3	%2,1	%2,1
Mathematics	12	%8,4	%8,4
Vocational teacher	1	%0,7	%0,7
Music	1	%0,7	%0,7
Preschool	1	%0,7	%0,7
Special Education	1	%0,7	%0,7
Guidance	3	%2,1	%2,1
Art	1	%0,7	%0,7
Health care	1	%0,7	%0,7
Art and art design	1	%0,7	%0,7
Primary School Classroom teacher	39	%27,3	%27,3
Social Sciences	5	%3,5	%3,5
History	3	%2,1	%2,1
Technology and Design	4	%2,8	%2,8
Turkish Language and Literature	8	%5,6	%5,6
Turkish	6	%4,2	%4,2
Total	143	%100,0	%100,0

Table 4: Distribution of participant teachers according to their branches

When we look at the branches of participants, we can say that primary school teachers (27.3%) showed the most interest in the questionnaire. This is followed by mathematics (8,4%) and religious culture and ethics (7,0%). It is noteworthy that the participation of teachers in technology design (2.8%) and information technology (2.1%) is low.

School Type	Frequency	Percentage	Valid Percentage
Anatolian High School	12	%8,4	%8,4
Multi Program High School	4	%2,8	%2,8
Science High School	12	%8,4	%8,4
Primary School	41	%28,7	%28,7
Vocational and Technical Anatolian High School	17	%11,9	%11,9
Vocational and Technical Education Center	8	%5,6	%5,6
Secondary School	46	%32,2	%32,2
Total	143	%100,0	%100,0

Table 5: School type distribution of participants

According to Table 5, 143 of the 531 teachers in 42 schools in the province of Darende, Malatya, contributed to the survey study. When the number of participants is ranked according to the school types, 32,2% middle school (46), 28,7% primary school (41), 11,9% Vocational and Technical Anatolian High School (17), 8,4% Science High School and 8,4% Anatolian High School (12), 5.6% Vocational and Technical Education Center (8) and 2.8% Multi-program High School (4).

3.2. Validity and Reliability

In the research, variables such as perceived usefulness, Perceived ease of use, Attitude towards usage, Behavioral intention, Facilitated situations, Perceived fun, Self-efficacy, Technological confusion, etc. of teachers, working in Darende, Malatya towards IT, have been measured. Cronbach α coefficient method was used to measure the reliability of the 37-item scale for fit and anxiety variables.

Table 6: Reliability values table

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,941	,954	37

In the literature, the reliability of a research is measured by the Cronbach α coefficient, which indicates the degree of harmony in a multi-question measure and takes values between 0 and 1. It can be said that as the coefficient approaches 1, the internal harmony between the questions in the measure is so high. Generally, in social sciences Cronbach α coefficient is accepted as "0.81 <α <1.00" (İslamoğlu and Alnıaçık, 2016: 292). The reliability (Cronbach α) coefficient of all the factors

in the study model (T-TAM) indicates that the reliability of the scale is 941 and that the internal fit between the questions is high.

PERCEIVED USEFULNESS			
Using information and communication technologies in my classes increases my performance.	4,4965	,89501	143
Using Information and Communication Technologies in my courses makes it easier to work.	4,5175	,79482	143
Using information and communication technologies in my courses increases productivity.	4,5524	,73808	143
I find it useful to use Information and Communication Technologies in my courses.	4,6014	,77040	143
PERCEIVED EASE OF USE			
It is easy for me to use ICT in my courses	4,2448	,89770	143
The use of Information and Communication Technologies is easy for me	4,2657	,84712	143
Having the skills to use Information and Communication Technologies in my classes is easy for me.	4,3427	,78816	143
ATTITUDE TOWARDS USAGE			
Using ICT in my lessons makes the lesson more fun and interesting.	4,4545	,85355	143
I am happy to use ICT in my job.	4,4336	,87661	143
It is a good idea to use Information and Communication Technologies in my courses.	4,4825	,83795	143
I am pleased to teach my class using Information and Communication Technologies.	4,4685	,82909	143
BEHAVIORAL INTENTION			
I think I will use ICT often.	4,3007	,91185	143
In the future I plan to use ICT in my classes.	4,3636	,88449	143
I will strongly recommend the use of ICT to colleagues.	4,2168	,99392	143
After that I will try to use ICT in my profession.	4,3287	,82885	143
PERCEIVED FACILITATİNG SITUATIONS			
When I use ICT environments (computer labs) and tools (computer, internet) in my courses, there are people who will give guidance and assistance at school.	3,8462	1,18267	143
I know who can help me if I have to deal with a problem when using Information and Communication Technologies.	4,0629	1,06953	143
I get technical support when using ICT with a problem.	3,9650	1,11591	143
PERCEIVED FUN			
I enjoy using technological devices in my lessons	4,3077	,87396	143
Working with computers is exciting	4,1748	,96644	143
I like using Information and Communication Technologies	4,3287	,90208	143
Using Information and Communication Technologies is fun.	4,3147	,86740	143
PERCEIVED SELF-EFFICACY			
I have the knowledge and skill to use Information and Communication Technologies	4,2797	,78189	143
If a person shows me how to do it once, I can use ICT in my classes.	4,3007	,86428	143
I have confidence in the use of ICT.	4,3217	,81881	143
PERCEIVED TECHNOLOGICAL CONFUSION			
I need to spend a lot of time learning the use of new technologies.	3,2657	1,34243	143
It takes a lot of time to do a job using Information and Communication Technologies.	2,7133	1,39729	143
Using new technologies has always been complicated for me.	2,4755	1,30994	143

PERCEIVED APPROPRIATENESS			
I think ICT is about my profession.	4,1538	,95908	143
I think I need ICT in my job.	4,2727	,93584	143
I think ICT is important for my profession.	4,3287	,87835	143
PERCEIVED ANXIETY (RISK)			
I feel nervous while I am using ICT.	2,0490	1,21220	143
I feel compelled to use ICT in my classes.	1,9231	1,14496	143
The possibility of making mistakes that can not be rectified when using ICT makes me nervous.	2,1538	1,22364	143
SUBJECTIVE NORMS (PERCEIVED)			
I am expected to use information technology products.	3,8182	1,05907	143
Teachers whose thoughts I appriciate, approve my using ICT behavior.	4,0490	,89858	143
Many instructors / teachers / managers who are important to me think that I need to use information technology products.	3,9650	1,06422	143

Table 7: Statistics Related to Scale Questions

When the table of descriptive statistics for each of the questions on the questionnaire shows that the average of the items under the Perceived Usefulness, Perceived Ease of Use, Attitudes towards Usage, Behavioral Intention, Perceived Fun, Perceived Self-efficacy and Perceived appropriateness values between 4 and 5 means that teachers use computer and communication technologies and demonstrate that they have a positive attitude towards their necessity in their profession. However, the low value of Technological Confusion, Perceived Anxiety and Subjective Norms can be interpreted as occupationally uncomplicated or risky to use computer and communication technologies. It can also be argued that the use of this technology is believed to be welcomed by others, or even as an expected situation**.**

3.3. Questioning The Hypotheses

Hypothesis 1. There is a significant relationship between the **usefulness** and the **facilitating states** variables that teachers perceive in the formation of behaviors for information technology use.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	93,685	1	93,685	12,006	,001[b]
	Residual	1100,287	141	7,803		
	Total	1193,972	142			

a. Dependent Variable: Perceived Usability

b. Deterninant (constant): **Facilitated Situations**

Table 8: Perceived Usability and Facilitated Situations Regression Analysis

The above tablestore regression analysis test was used to test whether there is a significant relationship between the perceived usefulness (utility) and facilitating situations in the formation of teachers' behavior toward information technology use. Accordingly, $p < 0.01$ and the existence of a significant relationship between the

two variables is possible. According to the table, we can say that the usefulness of survey participants in the course of their use of information and communication technologies in their lessons may vary depending on the facilitating circumstances they perceive. In other words, the positive attitudes of teachers when they use information and communication technologies and that they can get help when they encounter any problem positively affect their use of technology in the lessons.

Hypothesis 2. There is a significant difference between **the years teachers spend in the profession** and **attitudes towards use** in the formation of information technology use behaviors.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	30,120	13	2,317	,889	,567
Within Groups	336,355	129	2,607		
Toplam	366,476	142			

Table 9: Relationship Between Years Spent and Attitude Towards Usage

A one-way ANOVA test was conducted to determine whether there was a meaningful difference between the **teachers' attitudes toward use** in the attitudes toward information and communication technology and **the years they spent in the profession**. According to the Anova table above, there is no significant relationship between teachers' attitudes towards the use of information technology and the year they spent in the profession (p =, 567> 0.05).

Hypothesis 3. **Teachers' Perceived Usefulness**, **use attitude** positively influences the formation of behaviors for information technology use.

Correlations

		Perceived Usefulness	Attitude Towards Use
Perceived Usefulness	Pearson Correlation	1	,790**
	Sig. (2-tailed)		,000
	N	143	143
Attitude Towards Use	Pearson Correlation	,790**	1
	Sig. (2-tailed)	,000	
	N	143	143

**. Correlation is significant at the 0.01 level (2-tailed).

Table 10: Relationship between Perceived Usability and Attitude Towards Use.

Table 10 shows the results of the correlation analysis to determine whether there is a relationship between perceived usefulness (EC) and attitudes toward use (SCT) in the formation of teachers' behaviors for use of information technology. According to the table, there is a strong positive relationship between the usefulness of teachers in the positive effects of ICT on their lectures or their professional lives and their attitudes toward technology use (happiness, pleasure etc.) (p =, 000 <0,01; Pearson

cor., 790). The Pearson value, when 1 <x <80, can be said to be strongly related to the positive direction.

The hypothesis was confirmed because p <0.01 at the end of the applied correlation analysis.

Hypothesis 4. Teachers' perceived usefulness in the formation of behavior towards information technology use affects behavioral intention positively.

		Perceived Usefulness	Behavioral Intensions
Perceived Usefulness	Pearson Correlation	1	,739**
	Sig. (2-tailed)		,000
	N	143	143
Behavioral Intensions	Pearson Correlation	,739**	1
	Sig. (2-tailed)	,000	
	N	143	143

**. Correlation is significant at the 0.01 level (2-tailed).

Table 11: Relationship between perceived usefulness and behavioral intention.

The results of the correlation analysis to determine the relationship between Perceived Usefulness and Behavioral Intent in the formation of teachers' behaviors for use of information technology are shown in Table 11. According to the table, there is a strong positive correlation between the usefulness of teachers' knowledge and communication technologies towards their positive effects on their lectures or their professional life and their intentions towards technology use (frequent use, use of lessons, recommendation, use of profession) p=000‹ 0,01, pearson cor:, 739). The Pearson value can be said to be strongly related to the positive direction when 61 <x <80. The hypothesis was confirmed because p <0.01 at the end of the applied correlation analysis.

Hypothesis 5. The gender of the teachers is influential on the attitude toward use in the formation of behavior towards information technology use.

		Attitude Toward Use	Gender
Attitude Toward Use	Pearson Correlation	1	,052
	Sig. (2-tailed)		,537
	N	143	143
Gender	Pearson Correlation	,052	1
	Sig. (2-tailed)	,537	
	N	143	143

Table 12: Relationship between gender of teachers and their attitudes towards information technology use.

When the hypothesis was subjected to a correlation analysis (p> 0.01), it was found that the gender of the teachers did not have an effect on attitudes towards the behavior of information technology use. In other words, gender does not affect

attitudes towards use. The hypothesis has not been confirmed.

Hypothesis 6. In the formation of teachers' behaviors towards information technology use, perceived ease of use positively influences attitudes toward use.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	320,483	1	320,483	95,853	,000[b]
	Residual	471,433	141	3,343		
	Total	791,916	142			

a. Dependant Variable : perceivedeaseofuse

b. Determinant (constant): attitudetowardsage

Table 13: Relationship between Perceived Ease of Use and Attitudes Toward Usage

There is a meaningful relationship between the teachers' attitude toward information technology use and the ease of use they perceive for the use of information and communication technologies. According to the regression analysis applied, this hypothesis has been verified because 000 <p <0,01.

Hypothesis 7: There is a negative relationship between Behavioral Intent for teachers using information technology and Technological Confusion and Anxiety they perceive.

Hypothesis 8: There is a negative relationship between Behavioral Intent (DN) and Anxiety (K) for teachers' use of information technology.

		Behavioral Intension	Technological Confusion	Anxiety
Behavioral Intension	Pearson Correlation	1	-,045	-,289**
	Sig. (2-tailed)		,596	,000
	N	143	143	143
Technological Confusion	Pearson Correlation	-,045	1	,518**
	Sig. (2-tailed)	,596		,000
	N	143	143	143
Anxiety	Pearson Correlation	-,289**	,518**	1
	Sig. (2-tailed)	,000	,000	
	N	143	143	143

**. Correlation is significant at the 0.01 level (2-tailed).

Table 14: Relationship between Teacher Behavioral Intent for ICT use and Technological Confusion and Anxiety.

Table 14 shows the results of the correlation analysis conducted to determine whether there is a relationship between Behavioral Intentions for the use of information technology by teachers and Technological Confusion and Anxiety they perceive. According to the table, there was a significant relationship between Behavioral Intentions and Anxiety Levels (p =, 000, Pearson Cor: -, 289) in the teachers' vocational field and their lessons in using information and communication

technologies, and between Behavioral Intention and perceived technological complexity (p =, 596‹ 0,01). In other words, while teachers' behavioral intentions towards technology use are more or less influenced by concerns about technology, the complexities of technology do not have any influence. Hypothesis 7 was not accepted, Hypothesis 8 was accepted.

Hypothesis 9: There is a relationship between Behavioral Intent for the use of information technology by teachers and the type of school they are working with.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	57,221	13	4,402	1,033	,424
Within Groups	549,716	129	4,261		
Total	606,937	142			

Table 15: Relationship between Teacher Behavioral Intent for use of information technology and school type

A one-way ANOVA test was conducted to determine whether there was a meaningful difference between the type of school the teachers were working with and their behavioral intentions for using information and communication technology. According to the Anova table above, there is no significant relationship between the type of school teachers work with and the behavioral intentions of information and communication technologies for use (p =, 424> 0.05). Hence, Hypothesis 9 has been rejected.

CONCLUSION AND EVALUATION

The use of technology, as required by the changing and evolving world of education and training activities, is of great importance. In this direction, MoNE has encouraged both teachers and students to use technological equipment to the maximum level since the beginning of the 2000s. With this e-school application, the institutional processes of the schools have started to be carried out over the internet in the digital environment. With the passing of the Web 2.0 applications, smart board and tablet distribution has made it possible for the teachers and students to interact and work in and out of the classroom.With the introduction of www.eba.gov.tr internet platform, it is facilitated to access necessary material for course flows planned to be processed on smart boards and tablet computers. In-service trainings are given to teachers in order to solve the problems of how to use this technological equipment and how to get maximum benefit from this equipment. However, as stated in the research, in the case of teachers' use of technology, many factors affecting their professional lives, together with readiness for technology use, demographic factors, etc. are effective.

As a result of the hypotheses tested in the study;

There is a significant relationship between the usefulness perceived of teachers in the formation of behaviors for the use of information technology and the facilitating

situations. In other words, when they know / perceive that they can get help or technical support in the use of technology, it also affects the perceived usefulness of this technology.

There is no significant relationship between the year in which the teachers are engaged in the profession and the attitude towards the use of information (ICT) in the formation of behaviors towards the use of information technology. In other words, the fact that teachers are new or old in the profession and therefore old or young are not related to the attitude towards use.

Perceived usability in the formation of teachers' behaviors towards information technology use has a positive effect on the attitude toward use and there is a strong relationship between them. So, if they find the technology to be useful, we can say that the attitudes towards usage are so positive.

Perceived usability in the formation of teachers' behaviors for use of information technology affects, behavioral intention positively. It is also evident that teachers are willing to use technology if they find the technology useful.

It has been revealed that the gender of the teachers has no effect on the attitude towards use, in the formation of the behavior towards using information technology. In other words, the positive or negative attitude towards using information and communication technologies does not change regardless of the gender of the teachers.

The ease of use that teachers perceive in the formation of behavior towards information technology use has been identified as a factor affecting attitudes toward use. Teachers' attitudes towards use are influenced by the easy or difficult use of information and communication technologies. If teachers find it easy to use technology, they are happy to use it, enjoy it, and think that it makes the lesson fun and interesting.

There is no relationship between teachers' behavioral intentions for the use of information technology and the technological confusion they perceive.

It has been revealed that there is a negative relationship between Behavioral Intent and Anxiety for the use of information technology by teachers. If teachers are concerned about using technology, we can say that it can prevent them from revealing behavioral intent. In other words, they may not think of frequent use of technology, recommend it to their colleagues, or avoid using it during the course if they are nervous, worried about misconceptions, or feel confused.

Finally, the type of school where the teachers work is not an important and effective variable in their behavioral intentions for the use of information and communication technologies. In other words, we can say that the content of the education given by the school is not an effective stimulus in relation to the information technologies of the teachers who need technology in the given lessons.

In this study, teachers' attitudes towards information and communication technologies from the professional point of view are discussed. The study is limited to teachers working in the province of Darende in Malatya. Therefore, it is not expected to be generalized to all teachers. In the following studies, it is possible to investigate how well teachers use information and communication technologies, mainly for what purposes they are used, and their attitudes towards new media tools such as social media as part of information exchange and teaching.

REFERENCES

Ajzen, Icek-Fishbein, Martin (1977). "Attitude-Behavior Relations: A Theoretical Analysis and Review of Empirical Research", *Psychological Bulletin*, 84(5), 888-918.

Aras, Mustafa-Özdemir, Yasemin-Bayraktaroğlu, Serkan (2015). **"**İnsan Kaynakları Bilgi Sistemlerine Yönelik Algıların Teknoloji Kabul Modeli İle İncelenmesi", *Ege Akademik Bakış*, Cilt: 15, Sayı: 3, ss. 343-351.

Bahar, H. Hüsnü, Uludağ, Erdoğan, & Kaplan, Kadir (2009). "İlköğretim Öğretmenlerinin Bilgisayar ve İnternet Tutumlarının İncelenmesi (Kars ili örneği)", *Erzincan Eğitim Fakültesi Dergisi*. 11(2), 67-83.

Çivici, Tülay, Kale, Serdar, (2007). "Mimari Tasarım Bürolarında Bilişim Teknolojilerinin Kullanımını Etkileyen Faktörler: Bir Yapısal Denklem Modeli", *İnşaat Yönetimi Kongresi Bildiriler Kitabı*. ss:119-128, http://www.insaatyonetimi.com/FileUpload/bs82155/File/1553.pdf, Erişim Tarihi: 27.07.2017.

Davis, Fred. D. (1989). "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology*", Mangement Information Systmes Research Center*, 13(3), 319–340. https://doi.org/DOI: 10.2307/249008

Davis, Fred, Bagozzi, Richard, P, Warshaw, Paul, R. (1989). "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models". *Management Science*, 35(8), 982– 1003.

Holden, Heather and Rada, Roy (2011). "Understanding the Influence of Perceived Usability and Technology Self-Efficacy on Teachers' Technology Acceptance", *Journal of Research on Technology in Education*, 43(4), 343–367. https://doi.org/10.1080/15391523.2011.10782576.

İslamoğlu, A.Hamdi ve Alnıaçık, Ümit (2016). *Sosyal Bilimlerde Araştırma Yöntemleri*, 5. Baskı, Beta Yayınları, İstanbul.

Jeffrey, D. Andrew. (2015). *"Testing the Technology Acceptance Model 3 (TAM 3) with the Inclusion of Change Fatigue And Overload, in the Context of Faculty From Seventhday Adventist Universities: A Revised Model*", Graduate Research, Andrews University.

Kaptan, Saim (1993**).** *Bilimsel Araştırma ve İstatistik Teknikleri***,** G.Ü. Eğt. Bil., Ankara

Manovich, Lev (2001). *The Language of New Media, Massachusetts Institute of Technology Press.* http://dss-edit.com/plu/Manovich-Lev_The_Language_of_the_New_Media.pdf, Erişim Tarihi: 28.07.2017.

MEB (2007). "*E-Okul Projesi"* konulu, 25.01.2007 tarih ve B.08.0.ETG.0.21.04-03.300/1317 sayılı, II No'lu genelge, http://mevzuat.meb.gov.tr/html/1317_0.html,

Erişim Tarihi: 10,06.2017.

MEB (2009-c). *Öğretmenlik Mesleği Genel Yeterlikleri*, http://otmg.meb.gov.tr/belgeler/ogretmen_yeterlikleri_kitabi/%C3%96%C4%9Fretmen_Yeterlikleri_Kitab%C4%B1_genel_yeterlikler_par%C3%A7a_2.pdf, Erişim tarihi: 03.06.2017.

Özer, Gökhan, Özcan, Murat, Aktaş, Sonnur (2010). "Muhasebecilerin Bilgi Teknolojisi Kullanımının Teknoloji Kabul Modeli (TKÖ) İle İncelenmesi", *Journal of Yasar University*, ss. 3278: 3293.

Serçemeli, Murat, Kurnaz, Ersin (2016). "Denetimde Bilgi Teknoloji Ürünleri Kullanımının Teknoloji Kabul Modeli (TKM) İle Araştırılması", *İstanbul Üniversitesi İşletme Fakültesi Dergisi* 45 (1), May/Mayıs 2016, 43-52– http://dergipark.ulakbim.gov.tr/iuisletme, Erişim tarihi: 27.07.2017.

Ursavaş, Ö. Faruk, Şahin, Sami, & McIlroy, David (2014). "Technology Acceptance Measure For Teachers: T-TAM / Öğretmenler İçin Teknoloji Kabul Ölçeği: Ö-TKÖ", *Eğitimde Kuram ve Uygulama*, 10(4), 885–917. https://doi.org/10.17244/eku.30431

Venkatesh, Viswanath; Davis, Fred D (1996). A Model of The Antecedents of Perceived Ease Of Use: Development and Test. Decision Sciences; Summer 1996; 27, 3; ABI/INFORM Global pg. 451-481.

Vural, Z.Beril Akıncı, Bat, Mikail (2010). "Yeni Bir İletişim Ortamı Olarak Sosyal Medya: Ege Üniversitesi İletişim Fakültesine Yönelik Bir Araştırma". *Journal of Yasar University*, 2010 20(5) 3348-3382.