Students' Perceptions about Learning Environment of a Distance Course Based on Technology Acceptance Model: A Descriptive Study

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Abstract: The purpose of this study is to investigate students' perceptions of learning environment of a distance course through Technology Acceptance Model (TAM), a measure to assess the underlying reasons about the use of a technology. This distance course was delivered from one university to the other university via video-conferencing with ITL Learning Gateway content management system in one semester. An extended version of TAM was used as conceptual framework, which composed of three factors: "perceived motivation towards learning environment", "perceived usefulness" and "perceived ease of use". A total of 32 first year vocational higher education institution students who registered for this distance course participated in this study. Data were collected through a questionnaire based on the extended version of TAM. The findings revealed that each factor of TAM was perceived by students as "moderately advantageous." This perception could be due to students' low computer competency and e-learning experiences.
Key Words: Technology acceptance model, perceived motivation, perceived ease of use, perceived usefulness, video conferencing, distance education.

Özet: Teknoloji Kabul Modeline Göre Öğrencilerin Uzaktan Verilen Bir Dersteki Öğrenme Ortamına Yönelik Algısı: Betimleyici Bir Çalışma. Teknoloji kabul modeli (TAM) teknoloji kullanımının altında yatan nedenleri inceleyen bir ölçektir. Bu çalışmada öğrencilerin uzaktan verilen derste kullanılan öğrenme ortamına yönelik algılarının araştırmak amacıyla, video konferans aracılığıyla ITL Learning Gateway içerik yönetim sistemi kullanılarak bir dönem boyunca bir üniversiteden bir başka üniversiteye uzaktan bir ders verilmiştir. Bu çalışmada Teknoloji kabul modelinin genişletilmiş bir versiyonu kullanılmıştır. Bu genişletilmiş versiyonu üç faktörden oluşmaktadır. Bunlar "öğrenme ortamına yönelik motivasyon algısı", "kullanışlılık algısı" ve "kolay kullanım algısı". Bunun için mesleki yüksek öğrenim kurumunda okuyan ve bu uzaktan verilen derse kayıtlı 32 birinci sınıf öğrencisi bu çalışmaya katılmıştır. Bu öğrencilere teknoloji kabul modeli temel alınarak hazırlanmış bir anket dağıtılmış ve betimleyici sonuçlar incelenmiştir. Bulgular, teknoloji kabul modelinin her bir faktöründe öğrenciler ortalama avantajlar sağladığı algısına sahiptir. Bunun altında yatan nedenin öğrencilerin düşük bilgisayar becerileri ve e-öğrenme tecrübeleri olduğu düşünülmektedir.
Anahtar Sözcükler: Teknoloji kabul modeli, motivasyon algısı, kullanışlılık algısı, kolay kullanım algısı, video konferans, uzaktan eğitim.

Introduction

Technology extensively used in every part of life like education. With the development in information and communication technologies, it diffused in every part of life. However, to what extend those technologies are accepted by the students and instructors is an important concern for a long time. As it was cited by Davis, Bangozzi, and Warshaw (1989), Swanson stated that the underlying reason about the technology acceptance had been one of the most challenging problems in information systems. This technology acceptance decision affected some important concepts like users' beliefs, attitude, satisfaction, adaptation to change, and culture etc.

One of the explanatory models providing perspective into why users accept or reject technology was Technology Acceptance Model (TAM). This is one of the most successful measurements for effective computer usage among practitioners and researchers. Davis introduced it in 1989. TAM describes users' technology acceptance or actual use depends on distinct constructs of "perceived ease of use" and "perceived usefulness" (Davis, 1993). Davis, Bagozzi, and Warshaw (1989) developed the TAM by adapting the Theory of Reasoned Action (TRA), to understand the relations to IT usage in a workplace. Since the model was developed by Davis, this model has been used in several projects from computer science, information systems, management, information science, business, and educational technology.

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Moreover, several modifications have been done to increase its explanatory feature of users' technology acceptance. According to Venkatesh and Bala (2008), over the last two decades, there has been substantial empirical support in favor of TAM. For instance, in some studies factors of TAM explains approximately 40% of the variance in users' intention to employ technology in some studies (Venkatesh & Bala, 2008).

In original TAM, perceived usefulness and perceived ease of use appear as two of the most important individual beliefs about using an information technology. In the Figure 1 below, factors of the model and its relations can be seen.

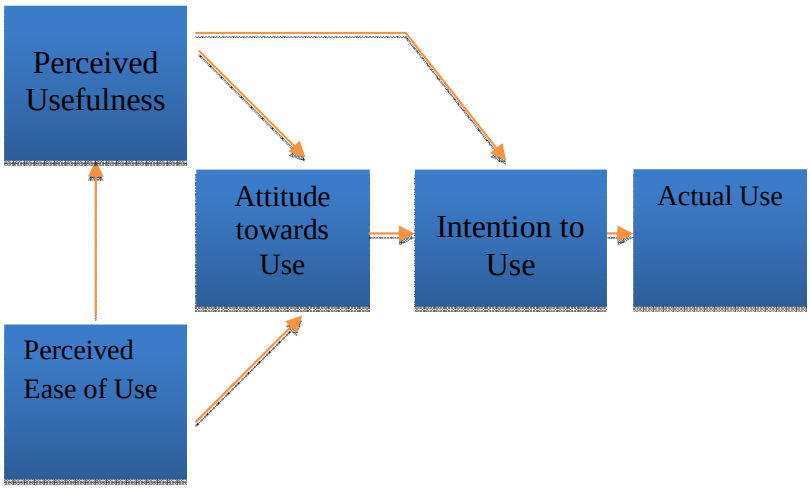

Figure 1. Technology Acceptance Model (TAM)

In this model, it was proposed that perceived ease of use and perceived usefulness were predictors of actual use of technology. Perceived usefulness is the users' perceptions of using a specific application system to increase his/her job performance within an organizational context. Perceived ease of use is the degree to which the individual believes that using the system would require little or no mental and physical effort (Davis, 1993).

Perceived usefulness is the strongest predictor of an individual's intention to use an information technology. According to Sun and Zhang (2006), 71 out of 72 studies to indicate the effects of perceived usefulness had statistically significant influence on attitude, behavioral intention, or usage. Ndubisi, Gupta, and Ndubisi (2005) researched the relationship between different factors of TAM, and in this research it was discovered that perceived usefulness has a strong influence on an entrepreneur's use of a new technology system.

As a secondary determinant of people's technology acceptance perceived ease of use has a significant influence on perceived usefulness, behavior attitude, intention, and actual use. After Davis introduced TAM in 1989, it was applied in different disciplines with different purposes. Some researchers focused on the main factors of TAM, and their effects on technology use (Karahanna & Straub, 1999; Koufaris, 2003), and some others work on extended version of TAM with some degree of combination from of other theories (Dishaw & Strong, 1999; Gefen, 2004; Venkatesh et al., 2003). It is widely used with the emergence of modified versions of TAM with motivational, social presence, facilitating conditions, perceive computer competence, etc. (Karahanna & Straub, 1999; Koufaris, 2003; Venkatesh, 2000; Venkatesh & Davis, 2000; Venkatesh, Speier, and Morris, 2003).

A number of meta-analyses were conducted in different periods about TAM, demonstrating that this model helped understand and explain the use of information technologies. Initially, Lederer, Maupin, Sena, and Zhuang (2000) analyzed more than 15 studies to see the existing relations between perceived ease of use, perceived usefulness, attitude towards use, and usage of information technologies over a 10-year period from 1989 to 1999. Legris, Ingham and Collerette (2003), found 22 studies that tested TAM. In addition, King and He (2006) analyzed 88 studies published on TAM. The results of this meta-analysis reveal that the model can be used in a wide variety of contexts to explain the use of information technologies.

Although many research studies indicates TAM as a good way of analyzing acceptance of technology, in some critical reviews on the original TAM it was thought to be too simple and has a limited number of factors to describe intention to use technology. Mathieson (1991) pointed out that TAM does not provide detailed information, but general opinions about the users and the system. These criticisms suggest a need

to expand TAM in new ways, and this situation caused the use of TAM in different disciplines with some different ways. An extended version of TAM is presented in Figure 2 below. In this modified version external factors added to the original model.

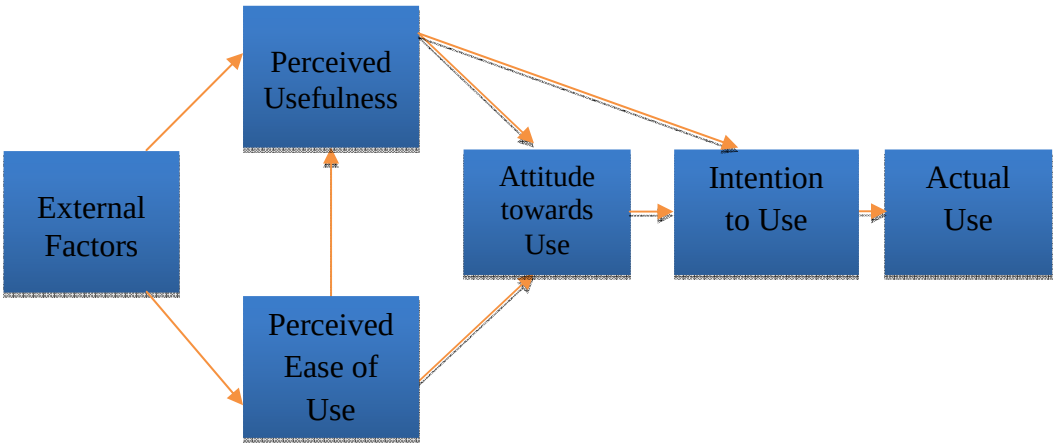

Figure 2 Extended Version of Technology Acceptance Model

The number of studies that used TAM as a framework gradually increased since 2000 TAM appears to contribute to the extended use of the model. In a literature review on citation database of "Social Sciences Citation Index (SSCI)" and "Science Citation Index (SCI)" on Web of Science determined 689 papers related of TAM from 1991 to 2009 (Chang, Chou, and Yang, 2010).

TAM is also extensively used in educational technology to see students' acceptance of an e-learning technology, multi-media, course management system, social presence studies. (Sivo & Pan, 2005; Smith, 2006; Yang, 2007). This would be helpful for instructional technologists to determine what factors contribute to the students' intention to use technology. In this study, learning environment of the distance course were investigated with respect to TAM. That is important to see to which extent students accept or reject the learning environment.

Purpose of the Study

This study aims to investigate vocational higher education students' perceptions about learning environment of a distance "web design" course with regard to Technology Acceptance Model. Therefore, descriptive findings about this distance course with respect to TAM were presented. This distance web design course was delivered from one university to other university via smartclass with the support of Instructional Technology Laboratory (ITL) Learning Gateway Content Management System (CMS). This is a secure framework for combining e-Learning solutions in a secure online environment (Özden, Gedik, and Kocaman, 2012). ITL CMS used and developed in METU from 1999 to today, and were used in many studies to assess its effectiveness from different aspects (Özden, 2002; Koç, Yıldırım, and Özden, 2006; Işık, Aşkun, and Özden, 2010). In order to understand students' perceptions about this new learning environment with respect to TAM, the following research questions were asked:

- What are the students' perceptions about the learning environment that were used in the distance "Web Design" course?
- What are the students' perceptions about their motivation to the learning environment in distance "Web Design" course?
- What are the students' perceptions about the usefulness of the learning environment in distance "Web Design" course?
- What are the students' perceptions about the ease of use of the learning environment in distance "Web Design" course?

Method

In this descriptive study, students' perceptions about the learning environment were asked with a questionnaire based on Technology Acceptance Model (TAM). According to TAM user acceptance of technology highly depended on perceived usefulness and perceived ease of use. Perceived usefulness is defined as the extent to which a person believes that using a technology will enhance his/her job performance (Davis, 1993). Perceived ease of use is defined as the degree to which a person believes that using an IT will be free of effort (Davis, 1993). Perceived ease of use was also considered to influence

perceived usefulness of technology. In this study, we have used courses delivered via video conferencing, and it was supported with CMS and CMC tools. Students' perceptions about this system influence it's the way it is used. If they did not accept and use it, with the help of TAM it could be possible to get information about the underlying reasons of this low-level use of the system.

Sampling

This study includes 32 first year students in a Faculty of Technical Education. Students from Computer Education Department and who have registered for distance "Web Design" course. were participated in this study in 2009-2010 Spring Semester. 22 of these students were male, and 10 female. 18 graduated from Vocational High Schools, 5 graduated from Anatolian High Schools, 4 graduated from General High School. Almost all students were from low or middle socio-economic status. Only 8 had internet connection at home.

Data Collection Instrument

In order to obtain students' perceptions about the tools used in web based instruction, a web-based instruction questionnaire was used. Researcher used Turkish version (of what?) while applying the questionnaire to the students. First, researcher examined the questionnaires that were developed and tested before in Turkish, and then decided on an extended version of the original TAM scale and includes some more questions about computer competency, e-learning experience, and motivation. That is the fact that in recent studies, motivation is considered as an important contributor to the use of technology (Bertrand & Bouchard, 2008). This extended and previously tested questionnaire adapted by the researcher from previous studies of Turşak (2007), and Işık, Aşkun andÖzden (2010). The reliability coefficient alpha value of the questionnaire was calculated as 0.892. According to Garson (2007) this alpha value is within the widely accepted levels in research in social sciences.

The questionnaire consists of 4 sections and there are 5 subscales. These are:

- self-reported computer competency of the participants to see current competency level including e-learning experiences were asked in Section 1 of the questionnaire. In this subscale, there are 7-items 4 point likert type questions about different technologies.
- self-reported e-learning experience to see participants' background experiences were asked in section 2 of the questionnaire. 4 questions were asked to see students' online or web-based course experiences.
- perceived effects on students' motivation towards educational activities to learn how perceived motivation towards educational activities influence the use of this technology. In this subscale, there are 9-item 5 point likert type questions. As it was stated above, this subscale is a new factor different from the original version of TAM, and many researchers are working over other contributing factors to technology acceptance.
- perceived usefulness to see user's subjective probability that whether using a specific system will increase his or her job performance within an organizational context. In other words, it refers to the degree to which the user believes that using the technology will improve his or her work performance (Davis, 1993). In this subscale, there are 10-items 5 point likert type questions.
- perceived ease of use were used to measure the degree to which the prospective user expects the target system to be free of effort (Davis, Bagozzi, & Warshaw, 1989). In this subscale, there are 8-items 5 point likert type questions.

Data Analysis

Apart from that, students' perceptions towards the new learning environment that were used in the distance course were asked with a questionnaire, and it was used to learn participants' computer competency, e-learning experience, perceived effects on students' motivation, perceived usefulness, and perceived ease of use. This perception questionnaire was conducted at the end of the semester. Collected data were coded in SPSS 15 software to make analysis. Descriptive analysis was conducted and findings were reported.

This questionnaire is a modified version of TAM. In this questionnaire, perceived usefulness and perceived ease of use are important factors for this study. Perceived usefulness is an important concept that influences students' intention to use the technology. The other construct perceived ease of use structured the use of the system free of effort (fix sentence not correct!). Those two constructs indicate the degree to which students are willing to adopt applications of e-learning environment. To improve the TAM's predictive value for the distance course, additional constructs, Computer Self-Efficacy, E-learning

Experience, and Perceived Effects on Students' Motivation were included in the model. The results of this study show that TAM proves useful to explain the students acceptance of e-learning Technology

Results

Descriptive Results

As shown in Table 1, 32 students participated in the new distance course. 10 (31.3%) of the students were female, 22 (69.7%) of them were male. This unequal distribution of gender is very common in vocational schools.

Table 1: *Descriptive Results (Gender)*

		Frequency	Percent
	Male	22	69.7
	Female	10	31.3
Total		32	100.0

20 (62.5 %) students connected to internet from internet cafes, 9 (28.1%) of them at their home, 3 (9.4%) of them were connected to internet at their school (see Table 2).

Table 2: *Descriptive Results (Internet Connection)*

		Frequency	Percent
	At home	9	28.1
	At School	3	9.4
	At Café	20	62.5
Total		32	100.0

20 (62.5%) of the students were at the age of 19-20 (18.8%) of them were at the age of 21-22, 4 (12.5%) of them were over 23 years old, and 2 (6.3%) of them were under 18 years old (see Table 3).

Table 3: *Descriptive Results (Age)*

		Frequency	Percent
	Under 18	2	6.3
	19-20	20	62.5
	21-22	6	18.8
	23 and above	4	12.5
Total		32	100.0

As shown in Table 4, 11 (34.4%) students have less than 750 TL income, 13 (40.6%) students had between 750-1500 TL, and only 4 (12.5%) of them had an income over 1500 TL.

Table 4: *Descriptive Results (Monthly Income)*

	Frequency	Percent
0-750 TL	11	34.4
750-1500 TL	13	40.6
1500-2250 TL	4	12.5
Total	27	84.4

As shown in the Table 5, 16 (50%) students have no internet connections at home, and 13 (40.6%) of them have internet connections at home.

Table 5: *Descriptive Results (Household Internet)*

	Frequency	Percent
No	16	50.0
Yes	13	40.6
Total	29	90.6

Parallel with the daily computer usage, 19 (59.4%) students were connected to internet less than two hours a day, 8 (25%) of them connected to 2-4 hours in a day, 1 (3.1%)student connected to internet 2-4 hours, and only 1 (3.1%) student connected to internet more than 6 hours (see Table 6).

Table 6: *Descriptive Results (Daily Internet Usage)*

	Frequency	Percent
Less than 2 hours	19	59.4
2-4 hours	8	25.0
4-6 hours	1	3.1
More than 6 hours	1	3.1
Total	29	90.6

Students' Computer Competency

As part of the perception questionnaire, researcher asked students' self-reported computer competency level. Students' competencies about web browser, search engine, e-mail, online forums and blogs, online chat applications, Word, Excel, PowerPoint, and e-learning application were asked in this part of the questionnaire. 13 (40.6%) students reported their competencies on web browser as intermediate, and 9 (28.1%) of them reported as an expert. The strange finding is 2 (6.3%) students stated that they are not using web browser, and 8 (25%) of them stated themselves as a beginner in a computer education department.

Students' competency on search engine was gradually better than web browser. The number of expert students on search engine was 11 (34.4%). 16 (50%) were intermediate, 5 (15.6%) were beginner. Similarly, 13 (40.6%) students define their e-mail competency as expert. 15 (46.9%) students stated that they were intermediate, 4 (12.5%) were beginner. With respect to competencies on forums and blogs, 4 (12.5%) students express themselves as an expert, 10 (31.3%) as an intermediate, 14 (43.8%) as beginner, 4 (12.5%) stated that they did not use forums and blogs. Students defined their competencies on chat applications lower than that (not clear!). None of the students reported their chat application competency as an expert. 12 (30.5%) were intermediate, 13 (40.6%) were beginner chat application users, and 7 (21.9%) were not using those kind of applications.

According to participants, self-reported computer competency was moderate with respect to MS Office applications. 12 (37.5%) students were expert MS Word users, 16 (50%) were intermediate, 4 (12.5%) were beginner. Competency regarding MS Excel was lower than MS Word. 6 (18.8%) students were expert users, 14 (43.8%) intermediate, 6 (18.8%) beginner, and 6 (18.8%) did not use it at all. 9 (28.1%) students expressed their PowerPoint competency as expert, 15 (46.9%) intermediate, 8 (25%) beginner. Finally, students' self-reported e-learning application competency was very low. Only one (3.1%) defined himself/herself as an expert, another (3.1%) as intermediate user, 6 (18.8%) as beginner, 24 (75%) did not use it before.

Self-Reported E-Learning Background

In the second part of the perception questionnaire students' self-reported e-learning background was inquired in 4 questions. The results revealed that students had limited or no e-learning background. For instance, only 6 (18.8%) stated that they had taken web-supported or online course before. Only one (3.1%) stated that he/she had a distance course experience before that course. Interestingly more than half of the students stated that they had never used internet for their courses before. Similar to the distance course experience results, only one student stated his/her e-learning/sharing portal experience.

Students' Perceptions about Learning Environment

The remaining section of the questionnaire is to see the effects of the use of tools in distance "web design" course with respect to students' perceived motivation, perceived usefulness, and perceived ease of use. 27 questions were asked through a scale ranging from "Strongly Agree" to "Strongly Disagree" to see the students' perceptions with respect to these three factors, namely "Perceived Effects on Motivation", "Perceived Usefulness" and "Perceived Ease of Use". When we looked at the perceived effects on motivation (M=3.15), it is between "neutral" and "agree." Mean score of perceived usefulness' is 3.23. It is a bit higher than perceived effects on motivation, and it is between "neutral" and "agree" in the scale. The mean score of perceived ease of use is 2.97. It is a little bit lower than 3, that means it is in the range of "neutral" and "disagree." The overall perception mean is 3.11.

Table 7: *Descriptive Statistics of Perception Constructs*

	N	M	Std. Dev.
Perceived Effects on Motivation	32	3.15	.96
Perceived Usefulness	32	3.23	.97
Perceived Ease of Use	32	2.97	.73
Total	32	3.11	.84

Perceived Effects of Motivation

9 questions were asked to the students to see the effects of students' perceptions about the tools that were used in the distance course on their motivation. The sub-factors of this construct are interest/enjoyment, perceived competence, willingness, and participation. As it can be seen in the table below, all sub-factors' mean score is over three (see Table 8). That means students agreed on learning environment had positive effect on motivation. Especially, "interest & enjoyment" (*M*=3.21) and "willingness" (*M*=3.20) of the learning environment seems to have more positive effects on students' motivation. Although mean scores of "Perceived Competence" (*M*=3.06) and "Participation" (*M*=3.09) mean scores were over three, these were lower than the other two .

Table 8: *Mean Scores, and Standard Deviations of Sub-factors of Perceived Effects of Motivation*

	N	M	Std. Dev.
Interest & Enjoyment	32	3.21	1.06
Perceived Competence	32	3.06	1.04
Willingness	32	3.20	1.03
Participation	32	3.09	1.04
Total Perceived Effects of Motivation	32	3.15	.96

Perceived Usefulness

Students' perceptions about the usefulness of the learning environment were inquired through 10 questions. "Usefulness" is an important concept to represent learning environment's effect on students' performance on educational activities. It was investigated through 6 sub-factors namely: Works More Quickly, Job Performance, Increase Productivity, Effectiveness, Makes Job Easier, and Usefulness.

As it can be seen in the Table 9, all sub-factors' mean score is over three except "Makes Job Easier" factor (*M*= 2.74). That means students agreed on learning environment had positive effect on usefulness.

Table 9: *Mean Scores and Standard Deviation of Sub-factors of Perceived Usefulness*

	N	Mean	Std. Deviation
Works More Quickly	32	3.04	1.06
Job Performance	32	3.32	1.04
Increase Productivity	32	3.21	1.23
Effectiveness	32	3.56	1.24
Makes Job Easier	32	2.74	1.01
Usefulness	32	3.35	1.08
Total Perceived Usefulness	32	3.23	.97

Perceived Ease of Use

Students' perceptions about the ease of use of the learning environment were asked with 8 questions. Ease of use is an important concept to represent learning environment is easy to understand and operate. It was investigated with 4 sub-factors namely: easy to learn, easy to use, easy to become skillful, and clear and understandable.

As it can be seen in Table 10, all sub-factors' mean score were lower than perceived usefulness. That means students were not agreed on learning environment is easy to use. Overall perceived ease of use were lower than three (*M*=2.97), that is between "neutral" and "disagree."

Table 10: *Mean Scores and Standard Deviation of Sub-factors of Perceived Ease of Use*

	N	Mean	Std. Deviation
Easy to Learn	32	2.90	1.09
Easy to Use	32	3.12	1.12
Easy to Become Skillful	32	3.03	.96
Clear & Understandable	32	2.95	.75
Total Perceived Ease of Use	32	2.97	.73

Discussion

With the advent of developing technologies, it is possible to use different resources in the courses. Web-based technologies provide us with a wide variety of educational technologies to extend educational opportunities beyond the traditional classroom learning. Especially, with the web-based instruction learners have a chance to reach educational resources anywhere, anytime rather than a place and time bound learning. As Lundt (2004) stated that with the emergence of the Internet, distance education and online instruction represent a new and effective way of learning replacing the traditional school system with a highly effective and efficient means of instruction.

From this perspective, understanding students' perceptions about distance learning environment can contribute to the decision making process of the e-learning strategies. Designing an effective distance course with web-based support may not be possible in the first attempt, designers should always be in a struggle to increase the effectiveness of instruction.

Technology Acceptance Model (TAM) argues that actual technology use is determined by the behavioral intention, and that intention is collectively related to perceived usefulness and perceived ease of use. In this study, a modified and extended version of TAM adapted in this study. The perceived effect of motivation about the learning environment was integrated to TAM as an external factor.

A large body of literature exists on the application of TAM in educational technology acceptance such as acceptance of CMS, collaboration tools, cellular phone, multimedia, and e-learning (Sivo & Pan, 2005; Smith, 2006; Yang, 2007; Saadé, Nebebe & Tan, 2007). In this study students were asked to respond their computer competency levels, e-learning experience, perceptions on the motivational aspect of the learning environment, usefulness of the learning environment, and ease of use of the learning environment.

In order to understand the underlying reasons of limited effectiveness of the course, it is possible to look at the effectiveness of the technology that was used in the course. Especially, students' technology use, how they used, where they used, and to which extent they could reach them was important were the basic questions in this study. Students' ICT use is an important issue that should be considered for the distance education projects because the attitudes and perceptions of the information age students are different from the learners of the past (Prensky, 2012). For example, 21st century students are much more fluent with their use of technology and learn new applications very quickly. In order to extend their capacities with the technology, in this course it was expected to achieve "learning with the technology" (Jonassen, 2000). That means the use of technology as a tool for exploration, collaboration, and higher order thinking by the students. In this regard, it was expected that students participated in the course both inside and outside the school. Students' access to the WBI tools at home and school revealed that the digital divide is an important issue to consider, because students from lower socio economic levels tend to have less access to technology outside of school, which limits their technology abilities in the classroom (Gündüz, 2010). In recent TÜİK (2012) report about the household ICT use of people in Turkey revealed that, computer and Internet access and household use of these technologies is not in the desired level. In this report, almost 51.3 % of people in Turkey never used computer and internet before. Only, 31.8 % of the people have Personal Computers in their homes. More than 50% of people do not have household internet access. The reasons of this existing low internet access were asked to the respondents. Interestingly, almost 30 % of them stated that they cannot get computer or other devices to access to internet because of expensive prices of them. Almost, 20% stated that internet access is expensive. In the January- March 2012 time period only 37.8% of the participants used Internet every day or once in a week.

Hudson (2011) pointed out that, 86 % of students preferred to use technology outside the classroom. Students also indicated that the technology used in the classroom does not meet their expectations like the technology used at home, which can be personalized to the student's interests (Hudson, 2011; Project Tomorrow, 2012). That was compatible with our results. In our study, 20 (62.5 %) students connected to internet from internet cafes, 9 (28.1%) at home, 3 (9.4%) were connected to internet at school. Students preferred to reach Internet outside the school, but not from home because of lack of access to the learning environment. Students did not have computers at home, only 59.4% had computers at home. Although this department is a computer education department, almost one-third of the students did not have a computer, although most courses needed to have computer-based activities. Moreover, 50% of the students had no internet connections at home.

It is obvious that this situation is an example of a digital divide related to the socio-economic status of child's family. When students' income was investigated, 75% had an income lower than 1500 TL. The students from higher SES may have higher computer and internet adoption rate. Within the classroom, as we begin to use and rely upon ICT more and more, it is possible that the academic gap between high SES and low SES students will continue to widen. Moreover, this study revealed that students had almost no e-learning experience. For that reason, adapting to this new environment and changing habits needs time for students. As it was cited in a report of U.S Department of Education (2006), Perkins stated that effective technology integration could be provided if the technology is indeed available, if people are aware of it and if people are motivated.

To sum up, this study revealed that TAM is a good way to measure students' perceptions towards a distance learning environment. Descriptive results presented that students' existing knowledge and skills will be two important determinants of the success of a technology in educational settings. Moreover, it would be better to add some more factors to TAM about the students' computer competency level or e-learning background in the future researches.

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Genişletilmiş Özet

Teknoloji hayatımızın her alanında olduğu gibi eğitimde de sıklıkla kullanılmaktadır. Fakat diğer teknolojiler gibi eğitim teknolojilerinden de bahsederken en büyük sıkıntılardan biri bunların kullanıcılar tarafından kabul görüp görmediğidir. Bu anlamda teknoloji kabul modeli (TAM) teknoloji kullanımının altında yatan nedenleri inceleyen bir ölçektir. Teknoloji kabul modeli ilk olarak Davis (1993) tarafından ortaya atılmış ve pek çok alanda kullanım olanağı görmüştür. Bu modelin temelinde iki ana kavram yer almaktadır. Bunlar "kullanışlılık algısı" ve "kolay kullanım algısı" dır. Bu modele göre "kullanışlılık algısı" ve "kolay kullanım algısı" büyük ölçüde ilgili teknolojinin kullanıcılar tarafından kabulü yada reddi konusunda bize bilgi vermektedir. Bu nedenle teknoloji kabul modeli pek çok farklı alanda araştırmalarda kullanılmaktadır. Özellikle son yıllarda öğrencilerin e-öğrenme teknolojilerine, çoklu ortamlara ve içerik yönetim sistemlerine yönelik algılarını ölçmede sıklıkla kullanılmaktadır.

Bu çalışmada öğrencilerin uzaktan verilen derste kullanılan öğrenme ortamına yönelik algıları araştırılmıştır. Bu çalışmanın amacı video konferans aracılığıyla, ITL Learning Gateway içerik yönetim sistemi kullanılarak bir dönem boyunca bir üniversiteden bir başka üniversiteye uzaktan verilen bir derste kullanılan öğretim ortamının teknoloji kabul modeli çerçevesinde öğrenciler tarafından nasıl algılandığını ortaya koymaktır. Bu çalışmada Teknoloji kabul modelinin genişletilmiş bir versiyonu kullanılmıştır. Bu genişletilmiş versiyonu üç faktörden oluşmaktadır. Bunlar "öğrenme ortamına yönelik motivasyon algısı", "kullanışlılık algısı" ve "kolay kullanım algısı". Bunun için mesleki yüksek öğrenim kurumunda okuyan ve bu uzaktan verilen derse kayıtlı 32 birinci sınıf öğrencisi bu çalışmaya katılmıştır. Bu öğrencilere teknoloji kabul modeli temel alınarak hazırlanmış bir anket dağıtılmış ve betimleyici sonuçlar incelenmiştir.

Bu kapsamda öğrencilerin öğrenme ortamına yönelik algılarını ölçmek için aşağıdaki araştırma sorularına cevap aranmıştır. Böylelikle ileride yapılacak çalışmalarda uzaktan eğitimde video konferans kullanımı ve içerik yönetim sisteminin iyileştirilmesine yönelik katkı sağlayacaktır.

Araştırma soruları aşağıda yer almaktadır:

- Öğrencilerin uzaktan verilen "Web Tasarımı" dersinde kullanılan öğrenme ortamlarına yönelik algıları nedir?
- Öğrencilerin uzaktan verilen "Web Tasarımı" dersinde kullanılan öğrenme ortamlarına yönelik motivasyon algısı nedir?
- Öğrencilerin uzaktan verilen "Web Tasarımı" dersinde kullanılan öğrenme ortamlarına yönelik kullanışlılık algısı nedir?
- Öğrencilerin uzaktan verilen "Web Tasarımı" dersinde kullanılan öğrenme ortamlarına yönelik kolay kullanım algısı nedir?

Bu çalışma kapsamında bir mesleki yüksek öğrenim kurumunda okuyan 32 birinci sınıf öğrencisine dönem sonunda teknoloji kabul modeline bağlı olarak geliştirilmiş 38 soru ve 5 alt ölçekten oluşan bir anket uygulanmıştır. Bu ankette bulunan alt boyutlar:1)bilgisayar becerileri, 2) e-öğrenme tecrübeleri, 3)öğrenme ortamına yönelik motivasyon algısı, 4) kullanışlılık algısı, 5) kolay kullanım algısıdır.

Bu çalışmaya katılan öğrencilerin % 62 si internet cafelerden internete erişmekte, sadece % 28 inde evinde internet bulunmakta. Ayrıca öğrencilerin bilgisayar tecrübeleri irdelendiğinde teknik bir bölüm olmasına karşın yaklaşık % 20 sinin 1 yıldan kısa süredir bilgisayar tecrübesi vardır. Bu durum bizi dijital göçmenlik kavramı ile yüzleştirmekte ve bunun uzaktan eğitimde önemini ortaya koymakta.

Prensky (2012) e göre, dijital göçmenler öğretimde yenilikçi uygulamalar ve yaklaşımlar yerine, daha çok geleneksel yöntemleri tercih etmektedirler. U.S Department of Education (2006) bir raporunda etkili bir teknoloji entegrasyonunda teknolojik olanaklar bulunmalı, insanlar bunun farkında olmalı ve bu konuda motive olmalılar. 2012 yılında TÜİK'in yaptığı hanehalkı bilişim teknolojileri kullanımı raporuna göre evde bilgisayar ve İnternet erişim olanakları hala istenilen düzeyde değildir. Bu çalışmaya katılanların % 51,3 ü daha önce internet ve bilgisayar kullanmadıklarını belirtmişlerdir. Yalnızca % 31.8 inin evinde bilgisayar bulunmaktadır.

Bulgular, teknoloji kabul modelinin her bir faktöründe öğrenciler ortalama avantajlar sağladığı algısına sahiptir. Bunun altında yatan nedenin öğrencilerin düşük bilgisayar becerileri ve e-öğrenme tecrübeleri olduğu düşünülmektedir. Bu aslında bilgi toplumu olmak iddiasında olan ve bu yolda ilerleyen Türkiye için pek de iyi bir gösterge değildir. Gelişmiş ülkeler bilgisayar hakkında öğrenmek yerine bilgisayar ile öğrenme kavramına dayanan bir sistem belirlemişlerdir. Avrupa çapında bilgisayarın eğitimde kullanımına yönelik olarak Eurydice'dan alınan aşağıdaki şekilde de görüldüğü gibi gelişmiş ülkelerde bilgisayarın eğitimde bir araç olarak kullanımına önem vermekte oldukları görülmektedir. Bütün ülkeler kendi şartları çerçevesinde teknolojiyi eğitime entegre etmeye ve öğrencilerine buna yönelik kabiliyetleri kazandırmaya uğraşmaktadırlar.

Şimdi bu gerçeklerden hareket edersek WTÖ geleneksel anlamda "bilgisayar ile" ve "bilgisayar hakkında" öğrenme olarak tabir edilen yöntemlerle kullanımının daha önceki tecrübeler ışığında çok da büyük bir fark yaratmayacağı ortadadır. Bu nedenle WTÖ 21. yy için gerekli olan kabiliyetleri kazanmansa olanak sağlayacak daha etkili kullanımlarına yönenilmelidir. Bu kullanımda bilgisayar (WTÖ) öğrencilere içeriği aktarmanın haricinde kritik ve yaratıcı düşünme yeteneklerini artırmak için de bir araç olarak kullanılmıştır. Böylece içeriğin direk olarak öğrenciye kazandırılması yerine kritik ve yaratıcı düşünme becerileri de öğrencilere kazandırılmaya çalışılmaktadır

Sonuç olarak, öğrencilerin hazırbulunuşlukları, beklentileri ve olanakları ders tasarım sürecinde merkeze alınmalı. Anlamlı öğrenme ancak öğrenen ve öğretenin öğrenme süreçlerine hazır olması ile mümkündür (Özden, 2004).