

The Investigation of Readiness for e-Learning of Pre-service Music Teachers in Turkey

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ABSTRACT E-learning applications at universities have been rapidly increasing with the technologies of Web 2.0. The design of e-learning environments with the convenient instructional principles is as important as the readiness of learners. In this paper, the readiness of pre-service music teachers for e-learning was investigated. 161 pre-service music teachers who are studying at the Music Education Department of Gazi University Education Faculty have participated in this research. Readiness for e-learning was discussed in 5 sections, namely, 1) Self-efficacy of the computer and Internet use, 2) Self-efficacy of online communication, 3) Self-directed learning, 4) Learner control, and 5) Motivation for e-learning. It has been seen according to obtained results that motivation for e-learning and self-efficacy of online communication are high, but other sections are low. On the other side, it has been seen that there are differences as per the gender and grade. Obtained data was discussed in detail.

INTRODUCTION

Distance education is an education activity that brings students, teachers and teaching materials in different locations, together by communication technologies (Isman 2011). Distance education has been in practice since 1880s. The process started with the use of post, and then went on to use radio and television. At the present time, with the advent of the Internet, it has a more flexible structure. One direction in which distance education is not adequate is music education that includes practice as well as conceptual learnings. But today, music education has begun to be addressed in e-learning with the development of multimedia teaching materials and technologies like Web 2.0 (Sherbon et al. 2005; Hebert 2007; Chriswell 2009; Digolo et al. 2011; Baker 2012a; Baker 2012b).

E-learning is the process of learning experiences for learners' interacting with lesson content, instructors and other learners with the use of information and communication technologies (Garrison 2011). E-learning provides an environment for learners where they can practice learning activities, ask questions and interact with the other learners (Moore and Kearsley 2011). Learners' parameters are very important in addition to the learning environment for an efficient e-learning process.

Hebert (2007) has discussed 5 important subjects for the development of e-learning in music education:

- ♦ Prejudice regarding the legitimacy of on-line degrees
- ♦ Coordination between distance education and music departments
- ♦ Pressure to maximize profits at the expense of educational quality
- ♦ Management of adjunct music instructors
- ♦ Management of student behavior and provision of student services.

Another important subject that Hebert (2007) has not mentioned is the readiness of music students and/or pre-service music teachers towards using e-learning. Readiness to use online learning has been defined by Borotis and Poulymenakou (2004) as, "being ready mentally and physically for some online learning experiences and activities."

E-learning environments are the environments that not teacher-centered and learners play an active role in their own learning process (Hung et al. 2010). The necessary skills to complete the lesson in online learning using the Internet are different from the skills necessary in the conventional classroom environment (Hukle 2009). Having these skills is important to determine the readiness level of learners towards online learning. Readiness towards using online learning has been discussed in different respects in some papers. Warner et al. (1998: 1) who study in the field of vocational education have determined the concept of readiness of online learning in three different ways in their paper, Learning way that students prefer in place of face to face class

education, (2) Learners' efficacy on using electronic communication and especially the communication via computer and internet for learning, and (3) The skill of participation in independent learning. Other explanations about the readiness of online learning include, "the skill of self-direction, nature of time management and online learning, adopting Internal sources of motivation, understanding self-learning style and experiences" (Smith et al. 2003).

While the readiness of online learning include using a computer and site navigation skills, at the same time, it includes the subjects of how students learn online, learning styles that can be connected to students' participation in online learning, preferences and strategy (Smith 2005). In another paper, the skills of online communication have been taken into consideration as well as the software and hardware technical skills, which teachers and students must possess (Barker 2002). Online learning contributes to evaluation of readiness, to design e-learning strategies and to realize effectively the purposes of BIT (Kaur and Abas 2004).

Aim of Research

The aim of this paper is to find out the readiness for e-learning of pre-service music teachers in Turkey.

The Components of Readiness for E-learning

Hung et al. (2010) and Yurdugül and Sarikaya (2013) have defined the readiness of e-learning in the form of sections that include self-directed learning, motivation, learner control, and self-efficacy of computer/Internet and self-efficacy of online communication.

Self-directed Learning

Self-method learning as a process includes understanding learning needs, creating learning objectives, defining material resources, selecting and practising appropriate learning strategies, and taking initiative on evaluation of learning outcomes. Learners actively take more responsibility for their learning in the determination process of learning objectives, activities, needs and proficiency levels (Eunjoo 2006). In the paper executed by Daniels and Moore (2000), it has been shown that it is necessary for stu-

dents to have high motivation, to be self-directed and to have organizational skills for directing their own learning habits since e-learning environments are separated and independent. In addition to that in the study executed by Lin and Hsieh (2001), it has been found out that successful learners take a decision themselves to meet their needs at their own speed in the direction of their knowledges and objectives. The existence of this relationship shows that self-directed students can take more responsibility for learning and have more wishes for learning activities.

Most of the e-learners do not know the limit of their responsibilities and the quickness that is necessary for this learning environment (Leasure et al. 2000) and they leave the environment when they understand that they have no self-directed character (Oladoke 2006). Readiness of students about self-directed learning is important to be successful in the student-centered environment wherein the responsibility to learn belongs to learner. Hence, it is necessary to take in to attention and self-directed learning skills as a part of readiness, because skills of students (who preferred electronic learning) in directing learning are important (Oladoke 2006).

Motivation

Motivation has been defined as an important factor, which affects learning (Lim 2004). It is one of the most important components of learning in any learning environment (Yurdugül and Sarikaya 2013). Motivation has been defined as a strengthening situation that directs people to perform certain activities, put in energy and has physiological, cognitive and affective dimensions, which occur in human beings (Fidan 1997). Motivation is not only an important part of conventional education but also e-learning (Khan 1997), and it is necessary for a successful e-learning experience (Lim 2004). There must be real motivation for effective learning, because learning is more individual and independent in distance education (Kaya 2002).

Learner Control

Web-based environments are different from conventional environments. Conventional learning environments tend to impose a customary one that include acquired and comprehended

knowledge. Learners have an opportunity to choose the information that they want to learn and about how to arrange to do this meaningfully (Lawless and Brown 1997), and have more flexibility and an individualized way in the web-based learning environment (Lin et al. 2001). The meaning of learning control has developed by including features of new technologies as well as learning paradigms (Hung et al. 2010).

Reigeluthin (1983) expressed in his *Elaboration Theory of Instruction* that learning control is one of the seven macro strategies and if the students who have a high level motivation have been given responsibilities and authorized conveniently in their own learning, effectiveness, productivity and attractiveness of education may be increased. There is no certain educational order, students may have their own preference and they can visualize training materials to meet their needs (Jonassen 1986). While some students benefit from this independence educationally, others may suffer because they have no control on their learning (Lin and Hsieh 2001). Hence, it is important that students' control must be analyzed at the beginning of web-based learning (Lin and Hsieh 2001). Students' readiness for learning control is also important for positive results from the process, because the e-learners who can determine their learning better, can prove better learning performance (Hung et al. 2010).

Computer-Internet Self-efficacy

Perception of self-efficacy is the self-belief of a person whether he/she has necessary skills to achieve some work. Computer self-efficacy is defined as "the self-belief of a person in using a computer" (Karsten and Roth 1998). Having basic knowledge, skills for using a computer and having high self-efficacy perceptions for computers are predictor variables for the learners' success in an online learning environment. Some researchers examined self-efficacy in e-learners. Lim (2001) found out in his research that computer self-efficacy is a meaningful predictor of students' satisfactions in web-based distance education.

Internet self-efficacy is defined as self-confidence of Internet users while they use the Internet. Internet self-efficacy comprises of setting up the Internet, continuation and using behaviors. Because of these, Internet self-efficacy may be different than computer self-efficacy (Hung et al. 2010). Internet self-efficacy can be effective on the learners' access information strate-

gies and can make it easier for them to benefit from these strategies in a web-based learning environment (Tsai and Tsai 2003).

Self-efficacy of Online Communication

Web-based communication provides informative, entertaining and communicative services in the wide area. Students' interaction and online communication is necessary for the quality of learning experience and effectiveness of learning activities (Bruyn 2004). McWay (2000) expressed that creating opportunities is important for communication and interaction between learners and instructors in a web-based learning environment. Online communication is also important in the e-learning process. Self-efficacy in online communication is important to overcome the limitations in online communication. Hence, it must be taken into consideration as a dimension of e-learning readiness.

MATERIAL AND METHODS

In this paper, it is purposed to put forth the readiness of pre-service music teachers for e-learning. The sample group of the research comprises of students who are studying at the Music Teacher Department of Gazi University Education Faculty. 161 pre-service music teachers have participated in the research. The gender and class grades of these students have been given in Table 1.

Table 1: Participants' frequency according to gender and grade

N	%	Gender
Male	104	64.6
Female	57	35.4
Grade		
1	42	26.1
2	28	17.4
3	38	23.6
4	53	32.9
Total	161	100.00

64.6 percent of the participants are male and 35.4 percent of the participants are female. According to the class grade, most of the participants are from the 4th (32.9%) and 1st grade (26.1%).

Instruments

In this paper, to find out the students' readiness for e-learning, the Online Learning Readiness

ness Scale (OLRS) developed by Hung et al. (2010) and adapted to Turkish by Yurdugül and Sarikaya has been used.

The dimensions are,

- ♦ Self-directed learning,
- ♦ Motivation for learning,
- ♦ Computer/Internet self-efficacy,
- ♦ Learner control,
- ♦ Online communication self-efficacy.

The dimensions of self-directed learning centered on the learners' taking responsibility for the learning context to reach their learning objectives. The concept of learner control is centered on the online learners' control over their learning (control that manifested itself as repeating or skipping some content) and on efforts by them to direct their own learning with maximum freedom. The concept of motivation for learning centers on online learners' learning attitudes, and the concept of computer/Internet self-efficacy is about the online learners' ability to demonstrate proper computer and Internet skills. The concept of online communication self-efficacy centers on describing the learners' adaptability to the online setting through questioning, responding, commenting and discussing.

Data Analysis

After this scale was implemented on 161 pre-service music teachers, obtained data has been digitized and transferred to electronic media. Then obtained average points have been compared to pre-service music teachers' gender and class grade.

In this paper, pre-service music teachers' answers for the OLR scale have been digitized and transferred to electronic media. The total subscale points have been obtained from five differ-

ent factors within OLR. These subscale points were divided by the number of items and factor averages were found out. Hereby, factor averages have become comparable with each other. These factor averages and standard deviations and correlations between total factor scores have been shown in Table 2.

CandI-SE: Computer and internet self-efficacy; *SDL*: Self-directed learning; *L-Control*: Learner control; *OC-SE*: Online communication self-efficacy

It is seen in Table 2 that computer and Internet skills of pre-service music teachers are in the lowest average, but their self-efficacy of online communication are in the highest average. Correlation between these two variables is $r=0.54$ ($P \geq 0.05$). According to this, determination coefficient is $R^2=0.29$. In other words, twenty-nine percent of online communication self-efficacy of pre-service music teachers is the self-efficacy of computer and Internet usage. This situation can be explained such that in the present day mobile technologies and smart phones affect online communication independently from the computer. So, it is possible to say that pre-service music teachers use mobile technologies more frequently than computers, for online communication.

Differences of total points of components of online learning according to gender of pre-service music teachers have been examined by an analysis of variance and the results have been shown in Table 3.

As it is seen in Table 3, the self-efficacy of female pre-service music teachers in using computer and Internet is statistically more than males ($F=14.59$; $P \geq 0.05$). It is also been seen that learning control of female pre-service music teachers in e-learning is higher than males ($F=4.49$; $P \geq 0.05$). On the other side, it is observed that there are no differences between female and male

Table 2: Descriptive statistics of OLR factors and correlations

Sub-scales	Correlation between sub-scales of OLR						
	Mean	Std. deviation	CandI-SE	SDL	L-Control	Motivation	OC-SE
CandI-SE	3.05	1.01	1.00				
SDL	3.12	0.71	0.56	1.00			
L-Control	3.26	0.79	0.57	0.71	1.00		
Motivation	3.72	0.82	0.40	0.69	0.56	1.00	
OC-SE	3.83	0.93	0.54	0.52	0.41	0.63	1.00

CandI-SE: Computer and internet self-efficacy; *SDL*: Self-directed learning; *L-Control*: Learner control; *OC-SE*: Online communication self-efficacy

Table 3: Differences of readiness of pre-service music teachers for online learning according to gender

	<i>Cinsiyet</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>N</i>	<i>Levene (P)</i>	<i>F</i>	<i>P</i>
<i>Computer and Internet Self-efficacy</i>	Male	8.88	2.97	104	2.12(0.147)	14.59	0.00
	Female	10.82	2.67	57			
	Male	18.66	3.32	104	0.16(0.694)	0.01	0.914
	Female	18.98	3.46	57			
<i>Learner Control</i>	Male	9.78	2.24	104	0.27(0.604)	4.49	0.035
	Female	10.71	2.27	57			
<i>Motivation</i>	Male	14.98	3.23	104	0.46(0.500)	0.23	0.636
	Female	14.96	3.03	57			
	Male	11.63	2.64	104	0.47(0.494)	0.89	0.347
	Female	11.91	2.49	57			

pre-service music teachers in term of their self-directed learning ($F=0.01$; $P>0.05$), motivation for e-learning ($F=0.23$; $P>0.05$) and self-efficacy of online communication ($F=0.89$; $P>0.05$).

An analysis of variance has been used to find out how pre-service music teachers were ready for e-learning according to their grade. Results have been given in Table 4.

According to results shown in Table 4, there are no significant differences of readiness of pre-service music teachers for e-learning in terms of computer and Internet self-efficacy and learning control according to their grades. However, it has been seen that there are statistically significant differences of readiness of pre-service teachers in terms of self-directed learning ($F=2.91$;

$Pd>0.05$), motivation ($F=2.86$; $P\geq 0.05$) and self-efficacy of online communication ($F=5.77$; $Pd>0.05$) according to their grades.

A post-hoc analysis has been used to find the source of these differences. The Tukey test has been used for post-hoc analysis and obtained results have been shown in Table 5.

It is seen that there is a statistically significant difference between grade 1 and other grades' pre-service music teachers in terms of self-directed learning and motivation for e-learning. It is a remarkable finding that as grade increases higher skills of self-directed learning, motivation for e-learning and self-efficacy of online communication decrease. It is seen that the new generation pre-service music teachers

Table 4: Differences of readiness of pre-service music teachers for online learning according to their grade

<i>Component of OLR</i>	<i>Grade</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>N</i>	<i>Levene (P)</i>	<i>F</i>	<i>P</i>
<i>Computer and Internet Self-efficacy</i>	1	9.25	3.16	42	0.51(0.679)	.32	.808
	2	9.79	2.93	28			
	3	9.64	2.93	38			
	4	9.70	3.04	53			
<i>Self-directed Learning</i>	1	19.69	2.85	42	1.37(0.245)	2.91	.036
	2	18.83	3.36	28			
	3	18.57	2.79	38			
	4	18.00	4.44	53			
<i>Learner Control</i>	1	10.74	2.37	42	2.16(0.095)	1.96	.122
	2	10.05	1.75	28			
	3	9.96	2.68	38			
	4	9.73	2.28	53			
<i>Motivation</i>	1	15.63	3.00	42	1.32(0.269)	2.86	.038
	2	13.74	3.35	28			
	3	15.27	2.95	38			
	4	14.52	3.50	53			
<i>Online Communication Self-efficacy</i>	1	12.75	1.86	42	2.27(0.089)	5.77	.001
	2	11.29	2.78	28			
	3	11.10	3.16	38			
	4	10.76	2.77	53			

are more ready for e-learning. Another meaning of these findings could be that the current curriculum of music education does not support these systems; on the contrary it can be the reason for the decrease in these skills.

RESULTS AND DISCUSSION

Learning occurs as the conclusion of interactions, which named as a learning experience. Today, e-learning has begun to replace learnings, which happen at the same time and in the same physical learning environment. At first, distance education was practised by post, but today web-based distance education is prevalent with the use of new teaching technologies. E-learning is the use of electronic technologies in the learning process. In this paper, the concept of e-learning has been used in terms of online learning.

Learners' interactions with technology and the quality of self-learning are very important in online learning. These two constructions can be expressed as readiness for online learning. Presently, especially at universities, many of the teaching fields are practiced online. But one of the teaching fields that still has not adapted to online learning is music education. Hebert (2007) has discussed reasons for this under five titles. But Hebert (2007) has not mentioned whether music learners are ready for e-learning at all. In this paper, the readiness of pre-service music teachers for e-learning has been examined.

According to findings obtained in this paper, it is seen that the learners' self-efficacy levels on computer and Internet are low. On the other side, it is seen that pre-service music teachers' self-efficacies for online communication are high. Correlation between these two was found to be $r=0.54$. This means that pre-service music teachers use mobile technologies more frequently and effectively than technologies like computers. One of the findings is that the motivations of

pre-service teachers for e-learning are very high. Interestingly, motivation of first grade pre-service teachers for e-learning is significantly higher than other grades. It is possible to say in other words that the new generation of pre-service music teachers is more eager for technology-based learning. Another important component of readiness for e-learning is autonomous learning. Autonomous learning comprises of self-directed learning and learner control. It is seen in this paper that the level of pre-service music teachers for self-directed learning is not efficient yet. The current generation of learners has been referred to as 'digital natives' in reflection of their apparent ease and familiarity with digital technology (Parkes et al. 2014; Demir et al. 2014). According to results in this paper, there is a significant difference between freshmen and sophomore learners' technology skills as well as self-directed learning skills compared to others. The result is contrary to findings of Hung et al. (2010) and Shea et al. (2014). On the other hand, there is higher motivation to online learning in pre-service music teachers.

CONCLUSION

Self-directed learning as a life-long learning skill is mentioned among the skills of 21st century. These findings put forth that it is necessary to review the education programs of music teacher departments. The self-directed learning trait of pre-service music teachers is inversely proportionate to their grade. Namely, as the grade increases, trait of self-directed learning decreases and for lower grades, the trait of self-directed learning is high. This finding can be explained as a trait of the new generation. In parallel, this paper shows that the new generation pre-service music teachers are more ready for e-learning due to their trait of self-directed learning, motivations for e-learning and online communication skills.

Table 5: Tukey test results related to differences in grade level

Grade	Self-directed learning		Motivation		Online communication self-efficacy		
	Sub-set		Sub-set		Sub-set		
	1	2	1	2	1	2	3
4	18.00		14.52		10.76		
3	18.57		15.27		11.10	11.10	
2	18.83	18.83	13.74			11.29	
1		19.69		15.63			12.75

RECOMMENDATIONS

The results of this paper show that grade one, pre-service music teachers are more ready for online learning than higher grades. As the grade increases, readiness for online learning decreases. It would have been expected to be otherwise. At this rate, it would be useful to review the curriculums of music education departments at universities. On the other hand, learners who participated in this research have not experienced online learning experimentation in the strict sense. In this context, online learning environments must be configured in music education departments in Turkey and there must be more opportunities for such learnings.

FOR FUTURE STUDIES

For future studies it may be searched,

- ♦ The effects of other psycho-educational subjects (for example, attitude, anxiety) on readiness of e-learning,
- ♦ The correlation between pre-service music teachers' behavior in the process of e-learning and readiness towards e-learning,
- ♦ The correlation of readiness for different e-learnings (cognitive learnings, skill-based learnings like singing and playing instruments) in the music field.

LIMITATIONS

This paper is limited to the pre-service music teachers who studied in the 2013-2014 academic year. The concept of readiness for e-learning is limited with the dimensions which took part in the scale used in the paper.

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