

# Investigating readiness levels of sports science faculty students towards e-learning

Fuat Erduğan

Kırkpınar Faculty of Sports Science, Trakya University, Edirne, Turkey.

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## ABSTRACT

Today technology takes over the burden of men with a lot of developments and innovation. In the education field, many developments can be seen too. The concept of 'readiness' is one of the most important key factors in E-learning. As readiness makes learning easier, e-learning becomes easier as well. However, E-learning seems required under today's conditions. Even though Physical Education and Sports are based commonly on practising, it is possible to consider e-learning in the sports field. The purpose of this study is to determine readiness levels of sports science faculty students towards e-learning concerning some variables. The sample and population of this study consisted of 348 sports science faculty students (215 males, 133 females) from Recep Tayyip Erdoğan, Trakya, Siirt and Muş university. In this study 'Readiness of University Students Towards E-learning Scale' developed by Yurdugül and Demir (2017) and a question form developed by researcher were used as a data collection tool. The scale consists of 33 items and 6 factors including computer self-efficacy, internet self-efficacy, online communication self-efficacy, self-directed learning, learner control and motivation towards e-learning. Cronbach Alpha reliability coefficient of the scale was found as 0.93. In conclusion, sports science faculty students have readiness for e-learning. However, when subdimensions were compared in itself, motivation towards e-learning, self-learning, and learner's control subdimensions were determined to have significant differences.

**Keywords:** Sports science faculty, student, e-learning, readiness for e-learning.

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E-mail: fuaterdugan@gmail.com.

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## INTRODUCTION

E-learning (Electronic learning) has been spreading in the education field within the limit of educational understanding. However, this stage of spreading pushes people to cope with various difficulties. Firstly, distance learning started in IX Century with letters and technology and with the arrival of technology, distance learning evolved. In the early 2000s, with the developments in computers and internet distance learning has become more popular (Moore and Kearsly, 2012). Similarly, two certificate programs which METU (Middle East Technical University, Turkey), pioneered, became more popular with new Bachelors', Graduate programs at different universities in Turkey (Adnan and Boz-Yaman, 2017). Readiness is defined as having skills and knowledge in the educational process (Senemoğlu, 2009). And the concept readiness towards online learning was defined

by Warner et al. (1998) and used in Australian vocational education system in three respect; (1) education style which students prefer, (2) proficiency of students in the use of electronic communication tools and (3) participation skill in independent learning. Students who register to distance learning programs consciously and willingly due to several reasons and students who are not able to reach conventional education facilities, need to have readiness towards online learning (Sakal, 2017). At this point, university students will need support and face some difficulties with e-learning in the beginning. This support which is needed by university students is the lack of e-learning readiness levels (Yurdugül and Demir 2017). Kaur and Abas (2004) defined e-learning as a skill of taking advantage of multimedia technologies and e-learning sources. E-learning, in short, is defined as

having the ability of prior knowledge/skill and affective characteristics needed to experience e-learning by institutions and individuals in the most effective way. In e-learning systems; several tools like e-mail, online slides, simulations, games, mobile applications are used for creating course content and for assessment and evaluation process (Naidu, 2006; Sasikumar, 2006). According to Bates (2000), higher education institutions can apply e-learning; (1) presentations where the internet was integrated to conventional education, and technology-based class teaching where electronically accessible course materials can be used; (2) distance learning applications enhancing educational access of disadvantaged students; (3) blended learning applications where online learning resources were unified through face to face learning. In the E-learning process, students need to make decisions and have control over their learning activities regarding the time they spend studying, the type of accessible media, and the context to bring flexibility while organizing learning activities. In this regard, control of student dimension and readiness of student is considered as an important part of e-learning (Stansfield et al., 2004). The continuous growth of technology in physical education has been effective. Technology has great potential for it has advantages however it should be comprehended that technology should be used at the right time and the right place in the physical education field (Silverman, 1997). On the other hand, as prospective physical education teachers, they need to learn technology and e-learning ahead of time and this also requires a different skill out of sportive and traditional teaching skills. As technology seems to be a useful means, e-learning and readiness in e-learning may play a great role for future physical education teachers for both teaching physical education to students and their academic sustainability in physical education through e-learning especially when it is needed. When literature is searched, there is no research or study towards determining readiness levels of students who take physical education and sports education at faculties. And also when current situations, changes, and developments in physical education and sport were considered, getting support and quality education from physical education teachers who are acknowledged experts in physical education with e-learning readiness and knowledge can be considered to make a great contribution to teaching in a different perspective not only to physical education and sports education but also athletes and coaches working in the sports field. Within this context, the purpose of this study is to determine readiness levels of sports science faculty students towards e-learning about some variables.

### **Benefits of e-learning for students and teachers**

E-learning (digital learning) has various benefits for both students and teachers. For a student, in e-learning

assessments students may be able to give faster feedback concerning their comprehension. Besides the use of virtual reality, visualizations, games can also make greater contributions when considered in applied lessons at sports science faculties. On the other hand through e-learning, in asynchronous classrooms students can to faculties or schools anytime and anywhere (Shaikh et al., 2019).

E-learning technologies are not only students but also teachers and lecturers. The automation systems make things easier compared to conventional grading. Also instructors can give lessons worldwide by using digital platforms. They can also improve their instructional techniques through digital platforms (Shaikh et al., 2019).

## **MATERIALS AND METHODS**

### **Research model**

This research was modeled according to the descriptive survey model. Participant opinions were received about the current situation by collecting data without making any change in their current features. Descriptive methods are the method aiming to describe a situation that existed in the past or still exist as they are. Therefore, as investigating the readiness levels of sports science faculty students towards e-learning were aimed and descriptive survey model was applied in this study (Şenyüzlü, 2013). This research was modeled according to the descriptive survey model. Participant opinions were received about the current situation by collecting data without making any change in their current features. Descriptive methods are the method aiming to describe a situation that existed in the past or still exist as they are. Therefore, as investigating the readiness levels of sports science faculty students towards e-learning were aimed and descriptive survey model was applied in this study (Şenyüzlü, 2013).

### **Sample and population**

The research was conducted to 348 sports science faculty students (215 males, 133 females) studying at Trakya, Recep Tayyip Erdoğan, Siirt, and Muş Alpaslan Universities.

### **Data collection tools**

In this study 'Readiness of University Students Towards E-learning Scale' developed by Yurdugül and Demir (2017) and a question form developed by researchers were used as data collection tools. The scale was conducted through an electronic survey (Google forms) to students who accepted to participate voluntarily in the

study. The scale consisted of 6 factors (computer self-efficacy, internet self-efficacy, online communication self-efficacy, self-learning, learner's control, and motivation towards e-learning) and 33 items. Cronbach Alpha reliability coefficient of the scale was found as 0.93.

### Data analysis

As a result of the normality test to determine whether data had a normal distribution, there was no normal distribution. Therefore, the Mann Whitney U test was used for the comparison of quantitative continuous data between two independent groups. Kruskal Wallis-H test was used for the comparison of quantitative continuous data between groups that are more than two. The confidence interval in the analysis was determined as 95% (significance level 0.05,  $p < 0.05$ ).

### Hypothesis of research

- There is a significant relation in E-learning readiness scale sub-dimensions of participants according to gender variable.
- There is a significant relation in E-learning readiness scale sub-dimensions of participants according to the field of study variable.
- There is a significant relation in E-learning readiness scale sub-dimensions of participants according to university variable.
- There is a significant relation in E-learning readiness scale sub-dimensions of participant according to physical activity participation variable.
- There is a significant relation in E-learning readiness scale sub-dimensions of participant according to grade point average variable.

### RESULTS

In this section results determined through statistical analysis related to data obtained were given in tables.

In Table 1 when sub-dimension scores in the scale of readiness towards e-learning scale were examined according to gender variables; a significant difference in male participants was determined in 'motivation towards e-learning' sub-dimensions ( $p < 0.05$ ).

In Table 2, when sub-dimension scores in the scale of readiness towards e-learning scale were examined, according to field of study variables; a significant difference in 'motivation towards e-learning' was determined ( $p < 0.05$ ). When mean rank was examined, physical education and sports teaching students were determined to have higher mean ranks.

In Table 3, when subdimension scores in the scale of readiness towards e-learning scale were examined,

according to university variable; a significant difference in 'motivation towards e-learning' was determined ( $p < 0.05$ ). When mean rank was examined, participants studying at Siirt university were determined to have higher mean ranks.

In Table 4, when subdimension scores in the scale of readiness towards e-learning scale were examined, according to physical activity participation variable; a significant difference in 'self-learning' was determined ( $p < 0.05$ ). When mean rank was examined, students participating in physical activity were determined to have higher mean ranks.

In Table 5, when subdimension scores in the scale of readiness towards e-learning scale were examined, according to graded point average variable; there was a significant difference in 'self-learning' variable of participants whose grade point average were 2.51 and above ( $p < 0.05$ ). At the same time, there was a significant difference in 'learner's control' variable of participants whose grade point average were 2.51 and above ( $p < 0.05$ ).

### DISCUSSION

The purpose of this study was to determine readiness levels of sports science faculty students readiness towards e-learning concerning some variables. The hypothesis of this study was as:

- There is a significant relation in E-learning readiness scale sub-dimensions of participants according to gender variable
- There is a significant relation in E-learning readiness scale sub-dimensions of participants according to the field of study variable
- There is a significant relation in E-learning readiness scale sub-dimensions of participants according to university variable
- There is a significant relation in E-learning readiness scale sub-dimensions of participant according to physical activity participation variable
- There is a significant relation in E-learning readiness scale sub-dimensions of participant according to grade point average variable

The study results indicated that male students had a significant difference in motivation subdimensions towards e-learning readiness than female students ( $p < 0.05$ ). This supports the hypothesis of this study only in motivation subdimension. Sakal (2017), in his study towards students about readiness to online learning; male students were determined to have higher self-efficacy than females in participation in online lesson chat platforms, sending e-mails in extracurricular periods and getting support from classmates in case they face a problem in online platforms. As a result of his study, he

**Table 1.** Mann Whitney U test for readiness towards e-learning scale sub-dimension scores according to gender variable.

	Gender	N	Mean rank	Rank sum	U	P
Online communication self-efficacy	Male	215	181.03	38922.00	12893.00	.12
	Female	133	163.94	21804.00		
	Total	348				
Self-learning	Male	215	177.00	38056.00	13759.00	.55
	Female	133	170.45	22670.00		
	Total	348				
Learner's control	Male	215	176.15	37873.00	13942.00	.69
	Female	133	171.83	22853.00		
	Total	348				
Motivation towards e-learning	Male	215	192.78	41447.00	10368.00	<b>.00</b>
	Female	133	144.95	19279.00		
	Total	348				

**Table 2.** Kruskal Wallis-H test for readiness towards e-learning scale subdimension scores according to field of study variable.

	Field of study	N	Mean rank	X <sup>2</sup>	P
Online communication self-efficacy	Sports Management	235	180.51	5.65	.06
	Physical Education and Sports Teaching	81	172.34		
	Coaching	32	135.86		
	Total	348			
Self-learning	Sports Management	235	178.18	1.14	.56
	Physical Education and Sports Teaching	81	169.29		
	Coaching	32	160.64		
	Total	348			
Learner's control	Sports Management	235	180.22	2.76	.25
	Physical Education and Sports Teaching	81	166.19		
	Coaching	32	153.53		
	Total	348			
Motivation towards e-learning	Sports Management	235	179.73	9.76	<b>.01</b>
	Physical Education and Sports Teaching	81	180.23		
	Coaching	32	121.61		
	Total	348			

found that male students had significant differences in several subdimensions according to this, it can be suggested that male students are more ready for e-learning platforms, and this may arise from male students are exposed more to platforms such as computer and internet. Çakır and Horzum (2015) in their study towards readiness levels of teacher candidates they found no significant difference in all subdimension but female teacher candidates had more self-directed learning than males in online platforms. This contradicts with our

findings. Self-directed learning requires control over the activities about the learning process and having the responsibility to choose learning objectives and tools (Mocker and Spear, 1982). this may arise from that females have more improved responsibility feelings (Beutel and Marini, 1995) than males. Adnan and Boz-Yaman (2017) in their study on Engineering students found that there was no significant difference towards expectations from e-learning in gender variables. But they also added that although they did not find any

**Table 3.** Kruskal Wallis-H test for readiness towards e-learning scale subdimension scores according to university variable.

	University	N	Mean rank	X <sup>2</sup>	P
Online communication self-efficacy	Muş Alparslan University	25	174.14	5.08	.17
	Trakya University	73	162.59		
	Siirt University	82	160.48		
	Recep Tayyip Erdoğan University	168	186.57		
	Total	348			
Self-learning	Muş Alparslan University	25	172.38	.48	.92
	Trakya University	73	174.42		
	Siirt University	82	168.55		
	Recep Tayyip Erdoğan University	168	177.75		
	Total	348			
Learner's control	Muş Alparslan Üniversitesi	25	174.70	.53	.91
	Trakya Üniversitesi	73	172.32		
	Siirt Üniversitesi	82	168.87		
	Recep Tayyip Erdoğan Üniversitesi	168	178.17		
	Total	348			
Motivation towards e-learning	Muş Alparslan Üniversitesi	25	143.08	18.63	<b>.00</b>
	Trakya Üniversitesi	73	137.75		
	Siirt Üniversitesi	82	200.13		
	Recep Tayyip Erdoğan Üniversitesi	168	182.63		
	Total	348			

**Table 4.** Kruskal Wallis-H test for readiness towards e-learning scale subdimension scores according to physical activity participation variable.

	Physical activity status	N	Mean rank	X <sup>2</sup>	P
Online communication self-efficacy	I exercise	43	153.08	2.44	.30
	1-2 Days in a Week	122	180.59		
	3 Days or More in a Week	183	175.47		
	Total	348			
Self-learning	I don't do exercise	43	148.35	7.01	<b>.03</b>
	1-2 Days in a Week	122	164.68		
	3 Days or More in a Week	183	187.19		
	Total	348			
Learner's control	I don't do exercise	43	169.45	.17	.92
	1-2 Days in a Week	122	173.75		
	3 Days or More in a Week	183	176.18		
	Total	348			
Motivation towards e-learning	I don't do exercise	43	158.78	1.80	.41
	1-2 Days in a Week	122	171.27		
	3 Days or More in a Week	183	180.35		
	Total	348			

significant differences in gender variables male students had significant differences in personality traits and

technological skills dimensions. Although these findings in part contradict with the current research it can be

**Table 5.** Mann Whitney U test for readiness towards e-learning scale subdimension scores according to grade point average variable.

	General Point Average	N	Mean rank	Rank sum	U	P
Online communication self-efficacy	2.50 and below	121	166.71	20172.00	12791.00	.29
	2.51 and above	227	178.65	40554.00		
	Total	348				
Self-learning	2.50 and below	121	158.18	19139.50	11758.50	<b>.03</b>
	2.51 and above	227	183.20	41586.50		
	Total	348				
Learner's control	2.50 and below	121	157.41	19047.00	11666.00	<b>.02</b>
	2.51 and above	227	183.61	41679.00		
	Total	348				
Motivation towards e-learning	2.50 and below	121	183.78	22237.00	12611.00	.21
	2.51 and above	227	169.56	38489.00		
	Total	348				

suggested that as engineering faculty students are more eligible to online platforms and online learning environments than sports science faculty students due to such platforms are a part of their job this can be shown as a cause to that. On the other hand, physical education teaching department students were determined to have a significant difference in motivation towards e-learning sub-dimension than other departments (Sports Management, Coaching) ( $p < 0.05$ ). This supports the hypothesis of this study only in motivation subdimension. In the study of İbrahim et al. (2002), the field of study variable did not have a significant difference or relationship to the level of readiness. On the other hand in the study of Çakır and Horzum (2015), found no significant difference in teacher candidates' readiness towards e-learning. This contradicts the results of current research. Physical education teaching field is a much comprehensive field than Coaching and Sports Management fields at Sports Sciences Faculties since it has a wider curriculum and pedagogical education in the programme. Therefore it can be inferred from here that this may be due to characteristic of physical education teaching field's curriculum and content of courses. There was a significant difference in self-learning subdimension towards e-learning readiness of students who participated in physical activity ( $p < 0.05$ ). This supports the hypothesis of this study only in self-learning subdimension.

It was determined that there was no study discussing physical activity participation and readiness towards e-learning within accessible literature. In this sense, this study has originality from this aspect. There were also significant differences in motivation towards e-learning according to university variables ( $p < 0.05$ ) and Siirt university was determined to have more e-learning

motivation among four universities. This supports the hypothesis of this study only in motivation towards e-learning subdimension. Pala and Şahbaz (2018), in their study on determining the readiness levels of e-learning on students in vocational tourism education, they reported no significant difference in e-learning readiness levels among four universities and also their results to indicate that all participants had readiness for e-learning. However, they found that one university had higher motivation towards e-learning among others. This finding matches up with the result of current research. On the other hand, Sakal (2017) in his study reported no difference in students based on geographical regions where students came from. Even though this comparison does not highlight universities, it can be said that as the regions where students came from may differ, this can be compared to different universities as well. From this point of view when we discuss geographic and university differences we can suggest that This may be due to the geographic, economic and educational conditions of students. In grade point average variable, students who had 2.51 and above grade point average were determined to have a significant difference in Self-Learning subdimension ( $p < 0.05$ ) and at the same time students who have the same grade point average were determined to have a significant difference in learner's control subdimension ( $p < 0.05$ ). This supports the hypothesis of this study only in self-learning and learner's control subdimension. It was determined that there was no study discussing graded point average and readiness towards e-learning within accessible literature. In this sense, this study has originality from this aspect. However, when this situation viewed as relational, there seems to be a relation between e-learning and grade point averages of students. Akir et al. (2012), reported

that 'the implementation and application of outcome-based education learning approach supporting by technology e-learning indicated better grade point average achievement in term of academic performance in comparison to the conventional teaching-learning approach'. Here It can be inferred that there can be interrelation between e-learning readiness levels and grade point averages.

## CONCLUSION and RECOMMENDATIONS

The purpose of this study was to determine readiness levels of sports science faculty students readiness towards e-learning concerning some variables. As a result of this study sports science faculty-student were determined to have readiness towards e-learning regarding several subdimensions; The study results indicated that male students had a significant difference in motivation subdimensions towards e-learning readiness than female students, physical education teaching department students were determined to have a significant difference in motivation towards e-learning sub-dimension than other departments (Sports Management, Coaching), There was a significant difference in self-learning subdimension towards e-learning readiness of students who participated in physical activity. There were also significant differences in motivation towards e-learning readiness according to university variables. In grade point average variable, students who had 2.51 and above grade point average were determined to have a significant difference in self-learning subdimension at the same time students who have the same grade point average were determined to have a significant difference in learner's control subdimension. According to these results, it was concluded that sports science faculty students have readiness for e-learning. However, when subdimensions were compared in itself, motivation towards e-learning, self-learning, and learner's control subdimensions were determined to have significant differences. When today's opportunities were taken into account it should not be surprising to see them ready for e-learning but there is a point to underline here; having readiness should not bring high expectations from sports science faculties students however there should be activities or programmes in curriculums to shape their readiness towards e-learning in a formal way. In this direction, it may be beneficiary for sports science faculty students especially physical education teacher candidates to have readiness towards e-learning before they start working as teachers, coaches or sports managers. Because in the future e-learning, applications may take over conventional learning in some cases as the necessity of the future. On the other hand, this study seems to be to first to discuss physical activity participation and e-learning readiness in students. However, in future research, the effects of e-learning and readiness towards e-learning in distance training (like

video course etc.) for licensed athletes may contribute to the literature. In addition, studies related to contributions of Web and Game Based E-learning applications (Jumani et al., 2018) including sports games, may be helpful in the e-learning process of sports science faculty students as they have applied courses in their curriculums.

## LIMITATIONS OF THE STUDY

As a limitation of this study, It can be said that there was no power analysis in this study, instead, scales were conducted to those who accepted to participate voluntarily in the research.

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