

The Attitudes of Pre-service Teachers Attending the Schools of Physical Education and Sports of the Universities in Turkey towards Education Technologies

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ABSTRACT The purpose of this study is to determine the attitudes of students of physical education and sports and to investigate whether these attitudes vary depending on some variables. The study was carried out with 5120 students from 49 different universities who have the department of physical education and sports in Turkey. The study employs survey method and the data in the study were collected through an information form developed by the researcher to elicit the demographic features of the students and a 43-item Questionnaire of Attitudes towards Education Technologies. At the end of the study, it was found that the attitudes of the students towards education technologies are positive and that these attitudes vary significantly depending on whether the students attend day-time or evening classes, gender, type of high schools they graduated from, and the region where the currently attended university is located, but that they were not affected by grade level.

INTRODUCTION

With the spate of rapid developments seen in the field of communications technology within this century, new tendencies and pursuits have emerged in the field of education. So much effort has been put into developing the best education programs, policies and strategies in order to make optimal use of funds and allocations by carrying out various studies on the attitudes of different student groups towards education technologies. All the findings revealed by these studies indicate that it is necessary to know students' attitudes and opinions towards about education technologies in order to enhance achievement and efficiency in education.

Rapid and surprising developments in science and technology have put countries into great and secret competitions and these have resulted in assisting these countries in developing their existing technological capacities. In addition, peoples' desire to have higher quality lives have accelerated technological improvements and made the use of technology a must, rather than a privilege. Throughout this development process, education assumed the most important role, and education technologies which are very effective in improving the quality of life have become the focus of attraction (Meral and Çolak 2002; Sahin and Korkmaz 2011; Mustafa and Sahin 2013).

Education technology is defined by Heinich (1993) as, "application of our scientific knowledge

about how people learn to solve our learning and teaching problems". Riza (1997) provides this definition which states that: "Education technology is a unity of systems which employs scientific data, specific methods, tools and equipment, assessment and evaluation tools to make optimal use of material and human resources in appropriate material and spiritual settings, to solve the problems of education, to improve the quality and efficiency".

We witness the emergence of new technologies every passing day, hence, it is not possible to separate technology from the development of societies and from education systems which have made great contributions to the development of individuals. Traditional methods which are commonly used seem to have become inadequate, because, the main goal of education is to show individuals how to use information while equipping them with information. Therefore, it seems inevitable to capitalize on education technologies (Uzunboylu 1995; Yenice 2003; Marti-novic and Zhang 2012).

As a result of rapid developments seen in the field of technology in this century, schools are highly affected from these developments as in many institutions of a society, and so, how and to what extent to use technology in education programs has evolved as an important challenge to overcome (Slowinsky 2000). Therefore, parallel to technological developments, new approaches have been sought for in educational

sciences and accordingly, education policies and strategies have been developed to make more efficient and effective use of resources allocated to the integration of technology into education partially by determining students' attitudes towards technological tools and equipment (Yavuz and Coskun 2008; Chai and Lim 2011; Topuz and Göktaş 2015).

Technology may play an important role in the development of education. Hence, educators should be skillful enough to integrate technology into their own fields (Akkoyunlu 2002; Tondeurvd 2012). To do so, attitudes of educators towards technology are of great importance. Attitude is a tendency regularly constructing one's opinions, feelings and behaviors in relation to a psychological object (Baymur 1978). Attitudes known to be closely associated with the efficiency of education can be defined as, "people's positive or negative feelings about any object, person or issue" (Petty and Cacioppo 1996). At the same time, they are believed to be "a state of mental and neural preparation based on experience and having impacts on individuals' responses to a situation" (Khine 2001). Roblyer (2003) summarizes the areas where technological tools can be used in sports education; in fitness and sports activities, in the development and enhancement of motor skills performance, in monitoring and improving personal health, in supporting the acquisition of temporary health-related information (biology, health, sports etc.), in sports education courses, in effective delivery of courses and in effective learning of students outside the classroom. Bachman and Scherer (2015) state in their conclusion and also made recommendations that educational technologies which are used, or which are advised to be used in education increase the productivity of instruction, and affect the outcomes of physical education course in a positive way.

For people to keep up with technological developments in today's world where the use of technology has become a must rather than a privilege, and for them to take advantages of the various opportunities which such developments present, they need to acquire some certain knowledge, skills and attitudes (Sad and Nalçacı 2015). Only through education can people acquire such knowledge, skills and attitudes (Akkoyunlu 1995). As a result of widespread use of technological tools and equipments in the field of education today,

and with the rapid development in technology, the need for technology is continuously increasing.

There is an emerging need to determine people's opinions about and tendencies and attitudes towards these tools and equipments (McCoy et al. 2001; Tsai et al. 2001; Becker and Maunsaiyat 2002; Frantom et al. 2002; Akpınar et al. 2005; Akbulut et al. 2011; Tezci 2011; Sad and Özhan 2012; Tondeurvd 2012; Bahar and Kaya 2013; Kreijinsvd 2013; Sad and Nalçacı 2015). In this regard therefore, it seems to be important to elicit the attitudes of pre-service teachers of physical education and sports towards education technologies, in order to determine the conditions which are necessary for the effective and efficient use of new technologies in education.

Purpose of the Study

The purpose of the present study is to determine the attitudes of the pre-service teachers of physical education and sports towards education technologies, and to investigate the effects of variables (whether they attend day-time or evening classes, their gender, type of high schools they graduated from, the region where the university attended is located and grade level) on these attitudes.

METHODOLOGY

According to the survey method, the sampling used in the present study covers the whole universe. A total number of 5120 students from 49 different universities who took physical education and sports training voluntarily participated in the present study in 2010-2011 academic year.

Data Collection

An information form developed by the researcher to elicit the demographic features of the students and a 43-item Questionnaire of Attitudes towards Education Technologies developed by Pala (2006), were used as a data collection tool in the study. The reliability of the questionnaire was tested in SPSSIBM 21 program package through Cronbach's Alpha coefficient and it was calculated to be 0.877. This coefficient shows that the questionnaire is reliable and suitable for administration. Expert opinions were sought for in order to test the validity of the

questionnaire by investigating whether the questionnaire items measured up to the target attitudes. There are five response options in the questionnaire ranging from “Strongly agree”, “Agree”, “Undecided”, “Disagree” to “Strongly disagree”. The score is from 5 to 1 for positive statements and in the reverse order for the negative statements. The lowest score to be obtained from the attitude questionnaire is 43 and the maximum score is 215. The score in the range 43-77 means “Strongly agree”, 78-111 means “Disagree”, 112-145 means “Undecided”, 146-179 means “Agree” and 180-215 means “Strongly agree”. The data collection tool was administered to the participants after required permissions were granted in 2010-2011 academic year.

Data Analysis

The data collected through the questionnaire were analyzed through SPSS IBM 21 program package. T-test was employed to test whether the attitudes significantly vary depending on whether the students attend day-time or evening classes and their gender was tested with t-test; and whether the attitudes vary significantly depending on the type of high schools they graduated from, the region where the university attended is located and the grade level was tested through One-Way ANOVA.

RESULTS

Research Results for the First Sub-problem

Distribution of the attitude scores of the students of physical education and sports towards education technologies (Table 1).

Table 1: Distribution of the attitude scores of the students of physical education and sports towards education technologies

<i>Program</i>	<i>N</i>	<i>The lowest score</i>	<i>The highest score</i>	<i>Mean</i>	<i>S</i>
Physical education and sports teacher education	5120	74	209	155.91	19.82

Table 2: t-test results for the attitudes of the students of physical education and sports towards education technologies in relation to whether they attend day-time or evening classes

<i>Day-time or evening classes</i>	<i>N</i>	<i>X</i>	<i>S</i>	<i>sd</i>	<i>t</i>	<i>P</i>
Day-time	4678	3.79	.67	5118	2.366	.018
Evening	442	3.71	.59			

As can be seen in Table 1, the mean attitude score of the students of physical education and sports is 155.91, the standard deviation is 19.82. According to these values, the students' general attitude is “Agree”. This shows that, in general, the students have positive attitudes towards education technologies. This finding concurs with the findings of Gunter et al. (1998), Altun (2002), Yilmaz (2005), Deniz et al. (2006), Pala (2006), Yavuz and Coskun (2008) and Can (2010).

Research Results for the Second Sub-problem

t-test results for the attitudes of the students of physical education and sports towards education technologies in relation to whether they attend day-time or evening classes in Table 2.

As can be seen in Table 2, of the total number of the students, 4878 are day-time students and 442 are evening students. T-test results reveal that there is a significant difference between the attitudes of the students based on whether the students attend day-time or evening classes [$t_{(5118)} = 2.366, p < .05$]. Day-time students' attitudes towards education technologies ($\bar{X} = 3.7916$) are more positive when compared to the attitudes of the evening students ($\bar{X} = 3.7127$). This finding is supported by Can (2010).

Research Results for the Third Sub-problem

t-test results for the attitudes of the students of physical education and sports towards education technologies in relation to their gender in Table 3.

According to Table 3, 2137 of the participants are females and 2893 are males. The students' attitude scores vary significantly depending on

Table 3: t-test results for the attitudes of the students of physical education and sports towards education technologies in relation to their gender

<i>Gender</i>	<i>N</i>	<i>X</i>	<i>S</i>	<i>sd</i>	<i>t</i>	<i>P</i>
Female	2137	3.8091	.66130	5118	2.197	.028
Male	2983	3.7673	.67646			

gender [$t_{(5118)} = 2.197, p < .05$]. The attitudes of female students ($\bar{X} = 3.8091$) are more positive than the attitudes of male students ($\bar{X} = 3.7673$). There are other studies reporting different results (Pala 2006; Deniz et al. 2006; Kutluca and Ekici 2010; Sezer 2011). Parallel to this finding of the present study, Gürkan and Er (2008) reported that the participants' attitudes towards internet vary significantly depending on gender.

Research Results for the Fourth Sub-problem

Arithmetic means and standard deviations obtained for the attitudes of the students of physical education and sports in relation to the type of the high school graduated Table 4.

Table 4: Arithmetic means and standard deviations obtained for the attitudes of the students of physical education and sports in relation to the type of the high schools graduated from

<i>Type of the high schools graduated from</i>	<i>N</i>	<i>X</i>	<i>S</i>
Science / Anatolian High School	491	3.7576	.95801
Super/Normal High School	3571	3.8031	.67459
High School of Sports	364	3.5989	.63298
Others	169	3.8069	.66246
Total	5120	3.7848	.67042

As can be seen in Table 4, more than half of the students graduated from super high schools/normal high schools (3571), and some of the students graduated from science/Anatolian high schools (491), and from high schools of sports (364). The number of the students who graduated from the other high schools is 169. The results

Table 5: ANOVA results for the questionnaire scores of the students of physical education and sports in relation to the type of high schools they graduated from

<i>Source of the variance</i>	<i>Sum of squares</i>	<i>sd</i>	<i>Mean of squares</i>	<i>F</i>	<i>p</i>	<i>Significant difference</i>
Between groups	14.482	3	4.827	10.802	.000	Yes
Within groups	2286.330	5116	.447			
Total	2300.812	5119				

of the variance analysis carried out to determine whether the difference seen in the arithmetic means is significant and are presented in Table 5. ANOVA results for the questionnaire scores of the students of physical education and sports in relation to the type of high school graduated Table 5.

The ANOVA results presented in Table 5 show that there is a significant difference based on the type of the high schools that they graduated from, and among the students' attitudes towards education technologies [$F_{(3,5116)} = 10.802, p < .05$]. That is to say, that there is a significant correlation between the students' attitudes and the type of the high schools they graduated from. This could be interpreted as the students of physical education and the sports schools they graduated from being different from other types of high schools, which leads to differences in their attitudes. This finding concurs with that of Günhan et al. (2007).

Research Results for the Fifth Sub-problem

Arithmetic means and standard deviations obtained for the attitudes of the students of physical education and sports in relation to the region where the university attended is located Table 6.

According to Table 6, the highest number of students is from Central Anatolia Region (1182), and the smallest number of students is from Southeast Anatolia Region (303). The results of the variance analysis carried out to determine whether the difference among the arithmetic

Table 6: Arithmetic means and standard deviations obtained for the attitudes of the students of physical education and sports in relation to the region where the university attended is located

<i>The region of the university</i>	<i>N</i>	<i>X</i>	<i>S</i>
Mediterranean Region	642	3.8209	.68229
Aegean Region	761	9.8068	.69453
Marmara Region	561	3.8984	.63134
Black Sea Region	858	3.7925	.63086
Central Anatolia Region	1182	3.7073	.67036
East Anatolia Region	813	3.7159	.69955
Southeast Anatolia Region	303	3.9076	.62881
Total	5120	3.7848	.67042

means is statistically significant are presented in Table 7.

ANOVA results for the questionnaire scores of the students of physical education and sports in relation to the region where the university attended is located Table 7.

The ANOVA results presented in Table 7 show that there is a significant difference between the students' attitudes towards education technologies based on the region where the university attended is located [$F_{(6-5113)} = 8.994, p < .05$]. That is to say, that there is a significant correlation between the students' attitudes and the region where the university attended is located. This could be interpreted to mean that when the students get their education in different regions, significant differences may become visible between their attitudes towards education technologies. However, in their own study, Tuncer and Berkant (2010) could not find a significant difference between the students' attitudes towards

internet based on the region where the university attended is located. This finding does not support the findings of this study.

Research Results for the Sixth Sub-problem

Arithmetic means and standard deviations obtained for the attitudes of the students of physical education and sports in relation to the grade level Table 8.

Table 8: Arithmetic means and standard deviations obtained for the attitudes of the students of physical education and sports in relation to the grade level

<i>Grade level</i>	<i>N</i>	<i>X</i>	<i>S</i>
1 st	1408	3.8168	.65124
2 nd	1218	3.7750	.66015
3 rd	1366	3.7650	.68771
4 th	1072	3.7845	.68683
Others	56	3.6786	.60624
Total	5120	3.7848	.67042

According to Table 8, the highest number of students are the first year students (1408), and the smallest number of students are the fourth year students. The number of students attending other classes is 56. The results of variance analysis carried out to determine whether the difference among the arithmetic means is significant and are presented in Table 9. ANOVA results for the questionnaire scores of the students of physical education and sports in relation to the grade level Table 9.

Table 7: ANOVA results for the questionnaire scores of the students of physical education and sports in relation to the region where the university attended is located

<i>Source of the variance</i>	<i>Sum of squares</i>	<i>sd</i>	<i>Mean of squares</i>	<i>F</i>	<i>p</i>	<i>Significant difference</i>
Between-groups	24.031	6	4.005	8.994	.000	Yes
Within-groups	2276.781	5113	.445			
Total	2300.812	5119				

Table 9: ANOVA results for the questionnaire scores of the students of physical education and sports in relation to the grade level

<i>Source of the variance</i>	<i>Sum of squares</i>	<i>sd</i>	<i>Mean of squares</i>	<i>F</i>	<i>p</i>	<i>Significant difference</i>
Between-groups	2.721	4	.680	1.514	.195	-
Within-groups	2298.090	5115	.449			
Total	2300.812	5119				

The ANOVA results presented in Table 9 reveal that there is no significant difference based on grade level among the students' attitude scores [$F_{(4,5115)} = 1.514, p > .05$]. That is, there is no significant correlation between grade level and the students' attitudes towards education technologies. This means that the students' attending different grades does not have a significant effect on the students' attitudes towards education technologies. This finding is supported by Tuncer and Berkant (2010), who found that there is no significant difference based on grade level between the students' attitudes towards the use of internet.

DISCUSSION

In our world which is mostly shaped by technological innovations, it would appear that teachers are the key to the quality of future generations. Hence, great importance should be attached to the education of our prospective teachers. While educating pre-service teachers of physical education and sports, they should be equipped with the skills required for the effective use of technological tools. For this purpose, the pre-service teachers of physical education and sports should be encouraged to develop positive attitudes towards technology. It is also vital to determine the present state of the attitudes of the students of physical education and sports towards education technologies. It seems to be clear that proper use of education technologies will make great contributions to the enhancement of the quality of teaching and learning. The present study therefore aims at determining the attitudes of pre-service teachers of physical education and sports in Turkey, and to investigate whether these attitudes vary depending on some variables (whether the students attended day-time or evening classes, gender, type of the high schools they graduated from, the region where the university currently attended is located and grade level).

However, the present study revealed that the general attitude of the students is in the category of "Agree" and hence, they have positive attitude. There is a significant relationship between the students' attitudes towards education technologies and whether they attended day-time or evening classes. The attitudes of day-time students are more positive than the attitudes of evening students.

The study also revealed that the attitudes of the students of physical education and sports vary significantly depending on gender. This difference favors the female students as they exhibited more positive attitudes than the male students. There is a significant difference based on the type of the high schools they graduated from, and between the students' attitudes towards education technologies. This means that the students graduating from different high schools have different attitudes towards education technologies. Moreover, a high majority of the students are Super High School and Normal High School.

According to the study also, there is a significant difference based on the region where the university attended is located, and the students' attitudes towards education technologies. This may mean that the students' attending universities located in different regions have significant effects on their attitudes towards education technologies. The highest number of students are from Central Anatolian Region and the smallest number of students are from Southeast Anatolian Region. No significant difference based on grade level was found among the students' attitudes towards education technologies, and the distribution of students among the grade levels are nearly even. The rapid changes in the field of technology urge societies to be an information society. The qualifications to be possessed by individuals in an information society have also changed. With continuously changing and increasing information, it has become impossible and unnecessary to memorize the information. Individuals living in an information society should be able to know how to have access to information and use it properly when needed (Çepni 2005; Tondeur et al. 2012).

The existing research indicates that technology could enhance learning environment and improve students' motivation, retention and problem solving and critical thinking skills when used accurately and properly (Yildirim 2000; Martinovic and Zhang 2012; Assan and Thomas 2012). Yet, without making some generalizations in light of the findings of the present study, there is a need to mention the limitations of the study. First, this study is limited to the students of physical education and sports in Turkey. Hence, future research can look at the students from different departments. Moreover, technology serves the function of bridge between science

and application. That is to say, that technology is the means for science to be applied in every field of our life. It is a fact that the scientific and technological innovations are continuously appearing and hence, that technology is continuously exerting direct influences on the teaching of every subject at our schools. Therefore, educators need to be well-equipped with technological knowledge to do their jobs.

CONCLUSION

At the end of the study, it was concluded that the students had positive attitudes towards educational technologies, and that their attitudes varied significantly depending on whether they were day time or evening class students, their gender, the type of high schools they graduated from, and the region where the university was located; yet, they did not vary depending on their grade level.

RECOMMENDATIONS

The following suggestions can be made for the researchers:

- ♦ Conducting the research with the participation of students from different fields of the different faculties of different universities, can add different dimensions to the subject of the study.
- ♦ The researchers should attach greater importance to technology as there are continuous developments experienced in the field of technology, and they directly affect teaching and learning process and this increases the responsibilities of educators.
- ♦ More emphasis should be placed on courses that can impart information and skills to students from Schools of Physical Education and Sports and Faculties of Education so that they will be able to integrate technology and instruction and to use technological tools and equipments effectively and properly.

LIMITATIONS OF THE RESEARCH AND DIRECTIONS FOR FUTURE RESEARCH

As the current research is limited to the study group, it can be further expanded with the participation of students from different faculties and disciplines; thus, different dimensions of the subject can be explored.

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