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The attitudes of student teachers towards educational technologies according to their status of receiving teaching application lessons

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Abstract

The aim of the present study is to determine the attitudes of student teachers towards educational technologies and the effect of teaching applications on their attitudes towards educational technologies. The study was composed of 244 students. “Attitude Scale towards Educational Technologies” developed by Pala was used in order to investigate the attitude towards educational technologies. T-test was administered in order to compare the attitudes of students according to their status of receiving teaching application lessons and gender. Variance analysis was made in order to compare the attitude scores according to their teaching programs. The results of the study established that teaching application lessons had positive effects on their use of educational technologies.

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Keywords: Educational technologies; attitude towards technologies; teaching applications.

1. Introduction

Educational technology deals with the provision of relevant equipment and materials for teachers to make appropriate use of as part of their teaching methods (Ertürk, 1972, s. 104). According to Çilenti (1984), educational technology is employed in the processes of education administration; it also encompasses environmental organization or the design of the teaching environment for detecting student behaviors the determining of certain educational situations and gaining in experiences (Alkan ve Kurt, 2007). In other words, educational technology includes all systems developed for the following purposes: the analysis of the topic to be learnt according to teaching principles and structuring it properly for learning; choosing and using the most environment for conveying the topic; using accurate and appropriate evaluation methods for assessing the efficacy of the lesson and the materials used in the lesson, to improve student success (Collier vd., 1971, s.16; Alkan, 1998, s. 14). Of late, educational technologies have been defined as the recent developments in educational instruments (Baek, Jung ve Kim, 2006) and other new electronic technologies (Nilson, 2005; Roblyer, 2006). Roblyer and Edwards (2000) suggested that there are important reasons for teachers to use technology in education: motivation, distinctive instructional abilities, higher productivity of teachers, essential skills for information age, and support for new teaching techniques (cited in, Samak, 2006).

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Studies of educational technologies indicate that the attitudes of the teachers play an important role in the application of new technologies to the educational environment (Abas, 1995; Blankenship, 1998; Isleem, 2003). In order to use of educational technology in the classroom effectively, teachers' attitude toward educational technology should be positive and they should be trained in using the educational technologies in the field of education. Prospective teachers should be encouraged to use educational technologies in teaching applications during the learning-teaching process. Teaching applications are important for prospective teachers for the following reasons: acquainting them with their future school and classroom environments, communication skills with students, the investigation of the thinking level of the students and student understanding of teacher-student relations

Studies have established that teaching applications in the application schools have positive effects on teacher training and development (Beck & Kosnik, 2002; Brooks, 2006; Burton, 1998). In addition recent studies indicate that teachers' attitude toward educational technology have significant implications for their behaviors' in the use of educational technology for teaching (Davis, 1989; Francis, Katz & Jones 2000; Kellenger & Hendricks, 2003). The success of adapting the technology to an education program largely depends on the support and attitude of the teachers (Teo, 2008). The present study tries to investigate the effects of teaching application on the attitudes of student teachers towards educational technology. The investigation of the attitudes of prospective teachers towards educational technology will contribute to studies in the field of education. Furthermore, it is hoped that the study will contribute to education in terms of answering the question "How can the teaching applications be administered more efficiently?"

1.1. Aim of the study

The aim of the present study is to determine the attitudes of student teachers towards educational technology and the effect of teaching applications on attitudes towards educational technology.

The present study sought answers to following questions:

1. What are the types of attitudes towards educational technology in students' teachers (5th grade) who have received teaching applications?
2. What is the level of attitudes towards educational technology in student teachers (1st grade) who have not received the teaching application lesson yet?
3. Is there a difference in the attitudes of student teachers towards education technologies according to the type of the teaching program?
4. Is there a difference between the attitudes of student teachers who have received teaching application and the attitudes of the students who have not received the course on educational technology?
5. Do the attitude scores of student teachers towards educational technology differ according to gender?

2. Method

2.1. Data collection tool

"Attitude Scale towards Educational Technology" developed by Pala (2006) was used in the present study which was designed as a scan model. The scale was organized as Likert type, and it included 16 negative, 27 positive, a total of 43 items. Cronbach Alpha reliability coefficient was 0.92.

2.2. Sample of the study

The sample of the study was composed of 244 students who were in 1st grade and 5th grades during the spring term of the 2008-2009 academic year. The students were receiving training in the departments of Biology, Physics, Chemistry and Mathematics Teaching in the Faculty of Education, Hacettepe University.

3. Results (Findings)

The attitudes of student teachers towards educational technologies;
Descriptive analysis of the data acquired from attitude scale towards educational technology. The results of the analysis are presented in Table 1.

Table 1. Attitude scores of student teachers towards educational technology

Department	Simflar		N	\bar{X}		\bar{X}
	1. Simf	5. Simf		1. Simf	5. Simf	
Biology Teaching	27	34	61	3.3118	4.2497	3.8345
Physics Teaching	19	18	37	3.2999	4.0594	3.6694
Chemistry Teaching	23	37	60	3.2194	4.0742	3.7465
Mathematics Teaching	22	64	86	3.1300	4.0465	3.8121
Total	91	153	244	3.2420	4.0999	3.7799

According to Table 1, while the average attitude score of 1st grade student teachers who had not yet received the teaching application lesson was 3.24, the average attitude score of 5th grade students was 4.10. The attitudes of 5th grade students were more positive than those of 1st grade students.

Departments and attitudes of student teachers towards educational technologies;

Whether the attitude score of student teachers towards educational technologies differ significantly according to department was tested via variance analysis. The findings are given in Table 2.

Table 2. Variance analysis results about attitudes of student teachers towards educational technologies according to the department

Groups		Total of Squares	sd	Average of Squares	F	p
1 st Grade	Inter-Groups	.483	3	.161	2.687	.051
	B P C M	5.211	87	.060		
	Total	5.694	90			
5 th Grade	Inter-Groups	.999	3	.333	2.314	.078
	B P C M	21.439	149	.144		
	Total	22.438	152			

As it can be seen from Table 2, the difference in attitude scores of students towards educational technology according to the department was not statistically significant (BCMP 1st Grade F=2.687 p>.05; BCMP 5th Grade F=2.314 p>.05).

Teaching applications and attitudes of students teachers towards educational technologies;

Whether the attitude scores of student teachers who received teaching application and the student teachers who had not received teaching application towards educational technologies differ was analyzed via independent sample t-test. Analysis results were given in Table 3.

Table 3. T-test results about teaching applications and attitude scores towards educational technologies

Grades	N	\bar{X}	S	sd	t	p
1 st Grade	91	3.2397	.25309	242	19.033	.000
5 th Grade	153	4.0999	.38421			

There was a significant difference in attitudes towards educational technologies according to their status of receiving teaching application lesson (p<.05). The attitudes of 5th grade students towards educational technologies were more positive than those of 1st grade students. This can be interpreted as the presence of a positive relation between attitudes towards educational technologies and teaching applications.

The relation between the attitudes of student teachers towards educational technologies and gender;

Whether the attitude towards education technologies differs according to gender was analyzed via independent sample t-test.

Table 4. T-test Results of Attitude Scores towards Educational Technologies according to Gender

Gender	N	\bar{X}	S	sd	t	p
Female	162	3.7687	.54867	242	.457	.648
Male	82	3.8020	.51636			

The analysis results in Table 4 indicate that there was not a significant relation between the attitudes towards educational technologies and gender variable ($p > .05$). The difference between female and male student teachers was not statistically significant in terms of average attitude towards educational technologies.

4. Discussion

The present study established that student teachers have a positive attitude towards educational technologies according to the analysis results of the data acquired from attitude scale towards educational technologies. It was observed that the attitude towards educational technologies does not differ according to department and gender. This may result from the perfect realization of the objectives determined in order to raise qualified individuals by using science and technology in all teaching programs. This can also be interpreted as the similarity of all teaching programs in terms of raising prospective teachers with all necessary competency and skills.

The attitudes of student teachers who received teaching application towards educational technologies were more positive than the student teachers who had not received teaching application. The aims of the teaching application were determined as follows: better preparation of student teachers for their profession, competence in applying the knowledge, skills, attitudes and behaviors which were acquired during the study period covering general knowledge, field education and the teaching profession in a real education-teaching environment (Tebliğler Dergisi, 1998, s.1). According to interviews conducted with some student teachers in the study, student teachers who received teaching application realized the deficiencies of a real school environment and gave their opinions on how this situation might be improved on or compensated for. Students who had not received teaching application could not express their opinions and this attracted attention. Accordingly, it can be suggested that student teachers recognize some deficiencies via teaching applications they pay efforts for compensating them and their attitude towards educational technologies become positive.

5. Conclusion and Recommendation

As a result of this study the following recommendations are made:

- Each teacher who graduates should improve her/him on the use of different educational technologies in addition to the theoretical knowledge about her/his branch. For that purpose, additional lessons should be added to the teaching program for educational technologies.
- The results of the study established that student teachers have a positive attitude towards educational technologies. The material development lesson should be focused on so that student teachers can consider themselves competent in the use of educational technologies. In the context of the material development lesson, different educational technologies could be introduced for individual departments and examples can be given for the usage of them.
- In the scope of special teaching methods, student teachers can be required to convenient educational technologies for specific topics in order to enhance the educational technology competency of the student teachers. In this way, individuals concentrating on research, become acquainted with many technologies and gain a competency in choosing the most convenient and appropriate one.
- The student teachers can be better provided with educational technologies in the application schools (Zhang & Espinosa, 1997), in order to enhance the usage of educational technologies in the context of the school course.
- Educational technologies are developing and changing daily. As a result, the faculties of education need to follow the developments and changes in educational technologies in line with their student profile and an appropriate updating can be realized (Bruce & Levin, 2001).
- It is known that educational technologies enable active learning and advanced thinking (Jonassen, 1999). Accordingly, which competencies can be developed via educational technologies should be further researched. Thus, the importance of using educational technologies can be recognized.
- There are different student profiles in the education-teaching environment. Student teachers should realize that educational technologies can be used according to the capacity and needs of each student and they can also be used as instruments for providing feedback (Smeets & Mooji, 2001).

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