



COMPARISON OF STUDENTS` ATTITUDES ON PRACTICE OF WEB-BASED AND MOBILE LEARNING SYSTEMS

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Abstract:

In this study, it was aimed to investigate the attitude of students on web based and mobile learning systems. Independent two groups were formed among the chosen 89 students using simple random method. The students were to use the designed system for one month and to define the attitudes of the students towards target methods, attitude tests were applied. The data analyzed in SPSS packet program. The difference between mobile learning and web-based learning attitudes of the students were statistically analyzed in pre-post t tests. The results indicate that; the mean scores of the attitude of the students were increased after the practice but they weren't statistically significant. The results in attitudes of both groups in post-tests show there weren't any significant difference in both groups. The mean values of post attitude tests of both groups were compared and the results were found statistically insignificant. It can be applied in other subjects for further studies.

Keywords: systemic planning, strategic planning, operational planning, decision-making, educational administration

1. Introduction

In order to be successful in mobile and web-based learning, the attitude of the children on practice of these learning systems is effective. The students` attitudes on web-based education have great effect on learning either it is negative or positive (Sanders & Morrison-Shetlar, 2001). This study is subjected to research the students' attitudes towards two distance education technics which are mobile learning and web-based learning.

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Distance education has been in existence for hundreds of years and it is understood to have been conceived in Europe (Chawinga & Zozie, 2016). Bower and Hardy (2004) postulate that *"higher education has provided students with distance learning opportunities for over 150 years"* (Bower & Hardy, 2004). Similarly in Turkey, many education institutions, colleges, universities, small or big companies, education agencies, military forces and many others mostly use and prefer "Distance Education" program in their education program.

To Arslan (2008) *"Web based teaching is to get the knowledge off the students via telephone and modem lines. There are several similar definitions instead of web based teaching and some examples of them are online education, internet education, and virtual classes, e-learning. Each one of them can be counted as a part of the web based learning system."*

One of the best advantages of the web based learning is that it enables asynchronous education. Students can reach to the content wherever and whenever they want. It is because of this flexibility that enables an ideal model for learning teaching situations (Carswell & Venkatesh, 2002).

Mobile devices such as cell phones, pocket computers, laptops have also become common because they are independent from the time and place and they can connect to web smoothly. Mobile devices have been used in mobile learning field at an important level because of their advantages. Kukulska-Hulme & Traxler (2005) define mobile learning as learning mediated by the assistance of small portable devices available most of the time and that can be adapted to the learner's immediate context. (Kukulska-Hulme, A., & Traxler, J. (2005). Another definition says that mobile learning is the easiest learning and teaching method which enables students to reach the learning environment via wireless devices (Litcfiled et al., 2007).

Mobile learning is a result of the combination of the mobile information and e-learning evaluation. It has no strict place to use and has the advantage to reach the e-content dynamically and efficiently. It can be used for both supporting traditional learning and distance education.

There are some specialties that put mobile learning a district place than the other methods. The learning environment enriched with mobile learning enables students to connect with the real world and digital world at the same time. This means there is an opportunity to support and form new digital learning methods (Facer et al., 2004).

As a result of a study carried by Kukulska and Hulme in 2009; it was tried to define the effect of mobile learning on language learning. It was found that the specialty that makes student both leader and the follower throughout the process makes student to prefer mobile learning more. Mobile learning makes language learning out of the border of classroom and even teacher (Kukulska, 2009).

Başıoğlu studied the effect of cell phones and word cards on the learning of English words. The study was carried out with the 60 students going to the preparatory

class in the Zonguldak Karaelmes University. The study was formed in pre-test, post-tests grouped semi-experimental pattern. The knowledge was examined via a 25 itemed questionnaire prepared by the experts at the university unit. The Cronbach Alpha value of the test was found as 0.78 and at the end of the study it has been seen that even though the program in the cell phones are basic the ones studied at the cell phones are more successful than the other group (Başoğlu, 2010).

Margaret Maag carried out a study under the *"Principles and Methods of Medical-Surgical Nursing Skills"* lesson. She prepared Podcast for 15 weeks 3 academic period (2005 summer, 2005 winter and 2006 summer). She broadcasted these casts on web site. The students mentioned the following items as the advantages of the podcasts and these are; *"Learning by listening the podcasts while making sports, shopping or any other activity."*, *"Being able to listen the same lesson as many as possible."*, *"Not having troubles while taking notes because it can be stopped whenever you want."*, *"Giving chance to learn out of the classroom."*, *"Being useful in repeating the notes before the exam."* (Maag, 2006).

A mobile application was carried in 2005 autumn period at Charles Sturt University Informatics Technology Department. Mobile learning help students to listen the lessons while dealing with another work and it eliminates the concern of missing the lesson while taking notes (Chan & Lee, 2005).

There are many other studies that are carried on the distance learning, mobile and web based learning subjects since the development of the technology there will be many others also. Along with these studies; in this study, the attitudes towards two different learning methods (web based and mobile learning) were tried to be examined. Before and after one month of application period the students were applied to attitude tests and the results are analyzed. Within this study, it has been tried to find answers to the following questions;

1. Are there any differences in attitudes towards web based education before and after the application of the mobile learning method?
2. Are there any differences in attitudes towards mobile learning before and after the application of the web based education method?
3. Is there a difference in attitudes between the mobile and web based education groups after the application?

2. Method

In this study, 89 students were selected via basic random sampling technique and they were divided into two groups. The web based and mobile based method has been applied to the groups throughout one month. The groups were randomly selected as it was selected at the beginning. One group has studied via web based pages and the other group has used mobile learning method. The analysis was done as pre and

posttests in groups and between groups. The difference between and in the groups were statistically evaluated using SPSS18.0 program.

The scales which were used in this study were Web Based Education Attitude Scale (Erdogan et al) and Mobile Learning Attitude Scale (Gündüz & Sökmen). The Cronbach Alpha value of the Web Based Education Attitude Scale was found; 0,79 before the application of the method and after the application the same value found as 0.61. The Cronbach Alpha value of the Mobile Learning Attitude Scale was found; 0,74 before the application of the method and after the application the same value found; 0.80. The total item numbers of the scales are 26 for each.

2.1 Findings and Comments

In this part, result of the analysis is discussed in detail. The first research question is; *“Is there a difference between the students` pre and post- attitudes who attend the web based education?”* The results related to the data is given in the Table 1 below.

Table 1: Pre-Post Attitude Scores of Web-Based Learning Group

	Mean	Std. Deviation	Sdt. Error	t	Sig. (2-tailed)
Scores of Pre-Attitudes	88,43	11,63	1,71	0,247	0,806
Scores of Post-Attitudes	88,00	8,56	1,26		

The data collected via the attitude scale related to web based education. The scores can be change between 26-130 points. The higher the scores, the higher the level of positive attitude related to web based education. When the Table 1. is examined it can be seen that the scores change between 59-123 and the mean scores are 88,43±1,71. It can be said that students have positive attitude towards web based education in general. When the post-scores are examined the scores are between 72-105 and the mean scores are 88 ±1,26. As a result, it can be said that students have a general positive attitude towards web based education.

The second research question is about the mobile group students` attitudes before and after the application. The results of the related question data is given on the Table 2.

Table 2: Pre-Post Attitude Scores of Mobile Learning Group

	Mean	Std. Deviation	Sdt. Error	t	Sig. (2-tailed)
Scores of Pre-Attitudes	92,09	9,44	1,44	-0,736	0,466
Scores of Post-Attitudes	93,37	11,33	1,73		

An attitude test was applied to the students who attend to the mobile learning education group. The scores of the test change between 26-130 and the higher the score

the higher the positive attitude is. It can be seen that the total scores of the students in the mobile learning group change between 72-120 and the mean scores are between $92,09 \pm 1,44$. When the results are examined, it can be seen that the students have a positive attitude in general towards mobile learning education. The test scores after the application is between 75-119 and the mean scores of the students are change between $93,37 \pm 1,73$. As it can be seen from the Table 2 the relation between pre and post scores of the mobile learning group is not statistically significant ($t = -0,736$; $p = 0,466 > 0,05$).

The third research question of the study is to compare the attitudes of the students after the application of the methods. The related data of the results is given at Table 3.

Table 3: Pre-Post Test Scores of Mobile and Web-Based Learning Group

	Groups	N	Mean	Std. Deviation	Sdt. Error	t	Sig. (2-tailed)
Pre-Test Scores	Mobile	43	52,53	19,54	2,98	1	0,319
	Web	46	48,41	19,24	2,84		
Post-Test Scores	Mobile	43	57,56	21,98	3,35	0,13	0,899
	Web	46	56,93	24,17	3,56		

As it can be seen from the Table 3, the pre-test scores are not statistically significant ($t = 1,002$; $p = 0,319 > 0,05$); when compared the mean scores of the students in mobile learning group ($x = 52,53 \pm 2,98$) and the mean scores of the web based group ($x = 48,41 \pm 2,84$). Similarly when the post scores of the both groups are compared, it can be seen that the mean scores of the mobile learning group ($x = 57,56 \pm 3,35$) and the mean scores of the web based learning group ($x = 56,93 \pm 3,56$) are not statistically significant ($t = 0,127$; $p = 0,899 > 0,05$).

3. Results and Discussion

This study which was aimed to support the education via mobile and web-based education was successfully carried on the 89 students. As a result of the study carried on the Sinop University Gerze Vocational School students, it can be said that both of the methods were found statistically important on empowering the success of the students. One of the distance education methods; Web based education method applied on the students increased the success of the students.

Students in the web based education group were applied an attitude scale before the education and after the education and the data were statistically analyzed. At the end of the analysis, it has been found that students have a positive attitude towards the web based education method. However, when the pre and post scores of students' attitudes towards web based education were compared, it can be said that there is no

statistically significant change between them. In spite of individual changes at the answers, these can be said just random ones.

The same process was also carried for mobile learning group students. The attitude test was applied before they got mobile education method and after the education process. The results show that they have also a positive attitude on mobile learning method. The attitude towards mobile learning has changed after the application but this change is not a statistically significant one.

The main research question of the study was to define whether there is a significant difference between the attitudes towards mobile learning and web based learning group. With this aim, the final scores both of the methods were compared and it has been found that there is a difference between the final scores but this difference is not statistically significant. It can be said that students have more positive attitudes towards web based education than mobile learning group has.

Web based and mobile learning methods can reach more senses and makes it easier for students to focus. Students are more enthusiastic and focused at different learning situations. The pre-conditions which are necessary for learning such as attention, motivation and readiness can form via these methods.

The reasons for the low scores of the mobile learning group compared to web based group are examined via attitude scales and oral questionnaires. Students mentioned that mobile learning is hard because cell phones are small and the screen does not allow them to work via long hours. Besides, the sudden messages via cell phones corrupt their attention and the internet connection via cell phones are very slow. It is identified that the web based education environment is easy to be adapted because it is similar to previous web platforms. The adaptation of students who are accustomed to the mobile based education system to the web based system took time. Web based education is older than mobile learning system and because the mobile system is a new method, it can be said that it has a disadvantageous situation. The other handicap can be said that web based education has more enriched pages compared to the mobile learning systems. The fee of the students to connect the internet was paid by the researcher but it is still expensive to connect the internet via mobile phones. It is another reason for students finding difficult to connect with cell phones. While connecting the web pages it is recommended to prefer bigger screens rather than cell phones. It is also recommended to use mobile devices using internet more efficiently. When the connection is weak and not efficient, students get bored and not prefer to use these methods.

Web based education method has its own disadvantages also. Students mention that when they start to use web pages they are tempted by the other social share platforms, social web sites and etc. These other web pages block them to focus on their lesson. To let students using the computers without the web limitation can eliminate the

negative effects of these prefer. This study has been limited to the students in Sinop University Gerze Vocational School. For further studies, researchers can apply the subject at other students and the number can be more for further studies.

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