M-Learning in Art-Education

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***Abstract*—M-Learning, referring to the use of mobile (or smart) phones, computers, and internet in teaching-learning process, have also had a broad repercussion in art education in Turkey. Because, especially in higher education, the use of these technologies is very common. What imposes the use of mobile technology is that these technologies offer significant opportunities for art education and the potential to provide alternative perspectives. However, the use of mobile technologies in art education depends, above all, on students' perception, awareness, and views on this subject. The goal of this research is to determine the views of candidate teachers at İnönü and Fırat Universities in 2014-2015 academic year on the use of mobile technologies in art education. The research was conducted on 148 teachers. The data were obtained through Likert-type questionnaire. To analyze the data, descriptive statistical techniques were utilized. The findings showed that candidate teachers use internet and mobile (or smart) phones to access information and to research, and that they find them useful for academic achievement and creativity. However, students are not fully aware of the opportunities offered by mobile technologies for art education. They, under the influence of traditional understanding, perceive mobile technologies as a tool rather than as a source or setting. Their awareness in M-Learning is low, and they are not aware of transformation in the form of transition to positivism beyond paradigms taking place on a global scale in education. This case brings into disrepute Turkey's "information society" goal in art education.**

***Index Terms*—m-learning, mobile technologies, mobile (or smart) phones, art education, internet in art education**

I. Introduction

Education is as much responsive to technological developments as to scientific, social, economic, political growth and developments, or even more. Looking at the modern world, a profound effect of technological developments on all aspects of the educational system of can be observed clearly. This case, which is described as a reflection of advanced technology on education, is seen most prominently in information and communication technology [1] and [2]. The most obvious example of this is the internet. With the emergence of internet and its gaining prevalence, Information Age, which has already started, has gained another momentum and dynamism. Internet technologies, eliminating the time and space constraints in ongoing traditional face-to face "teacher-student-blackboard" trilogy, has been so effective that they have formed milestones like "before and after internet".

The internet has been utilized in education in many ways. One of these ways is the use of mobile technologies, which is described as mobile information and communication devices like mobile (or smart) phones or PDAs. Mobile technologies, which have effected learning process in education radically in developed countries, have also effected education and particularly higher education quickly. When considered that almost all the university students are mobile (or smart) phone users (at a rate about %90), there is no way of denying it.

The use of mobile technologies in education is called M-Learning. Although the use of them was limited at the beginning, in parallel with the development of internet and mobile phone technology, m-learning has become widespread, particularly in higher education. Keegan (2001) described mobile learning as conducting education by using of PDAs, hand-held computers, and mobile phones. What makes mobile learning advantageous is the widespread use of mobile devices [3]. The main objective in mobile technologies is to provide learners with flexibility, and the opportunity to access to information at any time and place. Today, a new generation of phones called smart phones and 4-D internet technologies offer their users chances like to access to internet, to browse, and to take photograph. With M-Learning, it has become possible to work with different kinds of virtual materials, and to display learning products at any time and place. So, these advantages have favoured the use of mobile technologies in art education as well. Today, in developed countries, it is seen that art has changed its concept shell with the impact of advanced technologies like the internet. New art and artistic activities connected to the computer and technology is remarkable [4]. In fact; art education, which prioritize imagination, creativity and visuality, is very responsive to the possibilities of reaching art works and their knowledge via the internet, transmitting and sharing visual art objects. Therefore, M-Learning, providing the students with almost limitless visual objects and materials independent of time and place, has the potential to offer new opportunities for art education. The researches on the subject show that the use of mobile technologies have improved students' success [5]. The opportunities that could be provided by mobile technologies for art education can be summarized as presenting more accessible information and objects with less cost, an alternative art education, opening to sharing artistic works in a wide range, accessing to

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different art works and artists. The internet and the mobile (or smart) phones which are the most utilized learning tool give crucial support on providing a wealth of design, diversity of sources, data collection, charm and interaction in design, learning how to teach, and publishing process for art students [6]. In the list above, it can also be added that mobile technologies avoid art students from becoming dependent on the quality of teaching staff. The problem here is that if art education at existing higher level education is aware of this mentioned potential or not. Because, to take advantage of internet technology in general and M-Learning in particular is due to the existence of this awareness. In fact, the researches show that there is a relation between students' attitudes and the use of internet technologies [7]. At this point, what is expected is to reorganize the art education at higher level education with teaching staff qualification and curriculum in terms of infrastructure and equipment in accordance with Information Age. Art education students' awareness about internet technology and M-Learning depends a bit on this. Therefore, it can be a guiding light to determine art students' views on the use of internet and mobile technology regarding their education at higher level education. In this respect, this study, whose aim is to determine higher-level candidate art teachers' views on the use of internet and mobile technologies, have a place in clarifying the debates above.

II. Method

A. Population and Sample

The population of this research is the fourth grade art students in education faculties at Karadeniz Technical, Fırat, and İnönü Universities in 2014-2015 academic year. As for the sample, it consisted of 148 candidate teachers who were available from this population. The distribution of the students according to demographic variables is shown in Table I.

TABLE I. The Distribution of Students in the Sample According to Demographic Variables

Variables		N	%
Gender	Female	76	51.4
	Male	72	48.6
High school type-Department	Literature	72	48.6
	Dept. of Maths	8	5.4
	Vocational High Schools	20	13.5
	Fine arts	48	32.4
Internet ownership	Yes	112	75.7
	No	36	24.3
Csm ownership	Yes	128	86.5
	No	20	13.5
Total		148	100.0

B. Data and Analysis

The data in this study which was conducted through descriptive survey model were obtained via the survey developed by the researches. Likert-type questionnaire items were scaled as 1. Strongly disagree (1.00-1.80), 2. Disagree (1.81-2.60), 3. No idea (2.61-3.40), 4. Agree (3.41-4.20), 5. Strongly agree (4.21-5.00).

To analyze the data, arithmetic average, standard deviation techniques and analysis of variance, "t" test (for homogenous items), and KWH and MWU tests (for non-homogenous items) were utilized. For this, the significance level was taken as p=0.005.

III. Findings

A. Students' Perceptions and Views on the Roles of Mobile (or Smart) Phones and the Internet in Art Education

TABLE II. Students' Views on the Roles of Mobile (or Smart) Phones and the Internet in Art Education

Item	Views	$\bar{X}$	s
5	I use my mobile (or smart) phones or the internet to access to information more	4.16	.94
6	I use my mobile (or smart) phones or the internet to do researches more	4.05	1.09
8	Mobile (or smart) phones are indispensable for art education	2.59	1.25
9	The internet and the mobile phones are assistant variables rather than a basic one	4.19	.77
10	The use of mobile phones and the internet supports students' creativity	3.47	1.22
17	The use of internet in art education improves students' research ability	3.54	1.20
12	The use of mobile phones and the internet passivize students	3.76	1.19
15	The internet support is important for a good design in art education	3.13	1.30
14	The internet cannot replace teaching staff in art education	3.78	1.32

The candidate teachers, who participated in the study, perceive mobile (or smart) phones and the internet in art education as a supporting and assistant variant ($\bar{X}_9$=4.19) rather than as a key element and they don't find them as an indispensable element for education ($\bar{X}_8$=2.59). The students were undecided on the use of internet for designing in art education ($\bar{X}_{15}$=3.13). These students use mobile (or smart) phones in order to access to information ($\bar{X}_5$=4.16) and to do researches ($\bar{X}_6$=4.05). According to the students, the use of mobile (or smart) phones and the internet passivate them ($\bar{X}_{12}$=3.76), it improves their creativity and the ability to research($\bar{X}_{17}$=3.54).

Depending on gender variants, there is significant difference between the 5. [(MWU=2120.000; p=0,011)] item and the 8. [(t_{146}=2.318; p=0,022)] item. When compared to male students(MR_1=65.94), female students (MR_2=82.61) have adopted the 5. item more. When compared to male students ($\bar{X}_2$=3.06), female students ($\bar{X}_1$=3.53) have adopted 8. item more.

Depending on the variant of having the internet, there is significant difference between students' views on the 5. item [(t_{146}=2.924; p=0,004)] and the 10. item [(MWU=792.000; p=0,005)]. According to this, mobile (or smart) phone users ($\bar{X}_1$=4.25), have adopted the 5. item more than non-mobile-users have ($\bar{X}_{2=}$3.60).

Depending on the variant of high school-type, there is significant difference between students' views on the 6. item [(KWH=22.762; p=0,000)] and the 10. item [(KWH=13. 366; p=0,004)]. The significant difference regarding the 6. item is between 1st-3rd Groups [(MWU_{1-3}=408.000; p=0,002)] and 1st-4th Groups [(MWU_{1-4}=1168.000; p=0,001)]. According to this, the students from vocational schools (MR_3=62.10) have adopted the 6. item more than the ones from literature departments in high schools (MR_1=42.17). Again, the students from fine art high schools (MR_4=72.14) have adopted the 6. item more than the ones from literature departments in high schools (MR_1=52.72). The significant difference regarding the 10. item is between 1st-3rd Groups [(MWU_{1-3}=344.000; p=0,000)]. According to this, students from vocational schools (MR_3=65.30) have adopted the 10. item more than ones from literature departments in high schools (MR_1=41.28).

B. *The Students' Benefiting from Mobile (or Smart) Phones-the Internet in Art Education*

TABLE III. THE STUDENTS' VIEWS ON BENEFITING FROM MOBILE (OR SMART) PHONES-THE INTERNET DURING TEACHING PROCESS

Item	Views	$\bar{X}$	s
16	I find myself qualified enough to utilize the internet in art education	3.57	.088
18	The Internet has opened up new horizons by supporting me with my job	3.22	1.23
19	The internet has supported my academic achievement in my courses	3.46	1.22
23	I access to the internet via my mobile (or smart) phones with my own means	3.49	1.26
24	I fulfill my Internet needs through Internet cafes	2.21	1.30
25	I share my works via my mobile/smart) phones and the internet	2.81	1.27

According to the Table III, the students access to the internet via their mobile (or smart) phones with their own means ($\bar{X}_{23}$=3.49), and find themselves enough in internet skills ($\bar{X}_{16}$=3.57). While the students think that the internet supports their academic achievements ($\bar{X}_{19}$=3.46), they have been undecided about if the internet opens up their horizons ($\bar{X}_{18}$=3.22), and to share their works via the internet ($\bar{X}_{25}$=2.81).

Depending on the variants of gender, there is significant difference between the students' views on the 18. item [(t_{146}=2.624; p=0,009)]. The female students ($\bar{X}_1$=3.47), have adopted the 18. item more than male students have ($\bar{X}_2$=2.94).

Depending on the variant of having the internet, there is significant difference between students views on the 25. item [(MWU=912.000; p=0,000)] and the 26. item [(MWU=1376.000; p=0,003)]. According to this, the ones having the internet (MR_1=84.36) have adopted the 25. item more than the ones who don't have it (MR_2=43.83). As for the 26. item, the ones having the internet (MR_1=80.21) have adopted it more than the ones who don't have it (MR_2=56.72).

Depending on the variant of having a mobile (or smart) phone, there is significant difference between the students' views on the 22. item [(t_{146}=5.530; p=0,000)] and the 26. item [(MWU=816.000; p=0,007)]. According to this, the mobile (or smart) phone users ($\bar{X}_1$=3.69) have adopted the 22. item more than the ones who don't have one ($\bar{X}_2$=2.20). The non-mobile (or smart) phone users (MR_2=97.70) have adopted the 26. item more than the ones who have one (MR_1=70.88).

Depending on the variant of high school type, there is significant difference between students' views on the 16. item [(KWH=18.228; p=0,000)]. This difference is between 1st-4th Groups [(MWU_{1-4}=1312.000; p=0,019)]. According to this, the students from fine arts high schools (MR_4=69.17) have adopted the 16. item more than the ones from literature departments in high schools have (MR_1=52.72).

C. *The Existing Internet Facilities in Art Education*

TABLE IV: THE STUDENTS' VIEWS ON EXISTING INTERNET FACILITIES IN THE DEPARTMENT

Item	Views	$\bar{X}$	s
20	The Internet applications are sufficient in our department	3.59	.94
21	The Internet facilities provided by our faculty are sufficient	3.18	1.23
26	It would be useful to create a web site where the students and the teaching staff can meet	3.70	1.25

While the students who participated in the study find internet applications in the department enough ($\bar{X}_{20}$=3.59), they have been undecided about internet facilities in the faculty ($\bar{X}_{21}$=3.18). According to the students, it can be useful to create a web site for art education where the students and the teaching staff can meet ($\bar{X}_{26}$=3.70).

Depending on the variant of having a mobile (or smart), there is significant difference between the students' views on the 21. item [(t_{146}=2.924; p=0,004)]. According to this, non-mobile (or smart) users ($\bar{X}_2$=4.20) have adopted the 21. item more than mobile (or smart) phone users($\bar{X}_1$=3.03).

Depending on the high-school type, there is significant difference between the students' views on the 20. item [(KWH=26.022; p=0,000)]. This difference is between 1st-2nd Groups [(MWU1-2=80.000; p=0,000)] and 1st-4th Groups [(MWU_{1-4}=936.000; p=0,000)]. According to this, the students from literature departments (MR_1=49.39) in high schools have adopted the 20. item more than the ones who graduated from science and math departments (MR_2=14.50) in high schools. Again, the students from literature departments (MR_1=71.50) have adopted the 20. item more than the ones who graduated from fine arts high schools (MR_4=44.00).

IV. THE DISCUSSION AND THE RESULTS

In the study, candidate art teachers use mobile (or smart) phones in order to access to information and to do researches. The female students and the ones who have a mobile (or smart) phones use the internet in order to access to information more. Depending on the variant of school, the students from vocational schools use the

internet to do researches more. However, in similar studies, it has been reached that male students use the internet more [8]. The research finding which says that students use the internet in order primarily to access to information and to do researches is in parallel with similar research results. According to this, M-Learning can be mentioned in art education in Turkey in terms of accessing to information and doing researches.

Candidate teachers are of the opinion that mobile (or smart) phones and the internet in art education improve creativity and the ability to do research. The opinion that mobile technologies improve creativity, as expected, is more dominant among vocational schools graduates and mobile (or smart) phone owners. The studies corroborate that, even though it is reverse with children, M-Learning where mobile technologies are utilized effect in a positive way the students' academic achievement and creativity.

However, it is remarkable that the students see mobile technologies in art education as an assistant variable of teaching process rather than as an actual one. This view is more dominant in the students with no internet facility. The reason why the students see mobile technologies as an assistant variable rather than as an actual one could be that these students do not have enough information about the nature of the internet and facilities it offers. But mobile technologies are a more dynamic and variable learning source, when compared to teaching staff and course book, which are basic variables of conventional educational environment [9]. The students did not agree with the view which says "mobile (or smart) phones are indispensable for art education". This disagreement is more dominant in female students. This finding could be interpreted as male students are more open to mobile technologies in art education.

The students are of the opinion that the internet cannot replace teaching staff in art education. According to the students, mobile (or smart) phones passivate them in art education. Another result of the research is that the internet support their academic achievement. But the same students have been undecided about the issue that the internet opens up new horizons for them. This indecision is more in female students. If the students' mentioned negative perceptions do not stem from lack of information or confusion, this possibility remains: They perceive mobile technologies in art education only as a tool rather than as a stimulus-producing environment and a source. This perception does not reflect the nature of e-learning case. According to this, it can be said that candidate teachers who participated in the study are far from desired awareness level about what mobile technologies offer and provide for art education. This may be related to the fact that they do have enough training on this issue [10], [11]. In fact, the studies on this issue show that existing education faculty lecturers are far from taking the lead [12]. The studies show, with the extension of mobile technologies, there is an increase in teaching staff's attitudes towards this [13]. According to this, that Turkey invests more on internet technology could support education faculties to come to a better point.

The students do not share their works they have produced during their art education process. The ones with the internet facility are more willing to share in a virtual environment. That they do not share their works in a virtual environment could be related to the fact that their perception towards mobile learning technologies is not at desired level.

The students' views on infrastructure for mobile learning technologies regarding their faculty and department are conflicting. According to the students, while their department are qualified for internet infrastructure, their faculty do not offer them enough opportunity on this issue. While the students from literature departments in high schools find internet facilities enough, the ones from math and science department in high schools and the fine art high schools find them inferior. One possible reason of this is that the technological expectation of those students who are from literature departments which is basically a verbal section is lower. The ones who own a mobile (or smart) phones find the facilities offered by the faculty insufficient. This finding can be commented as they are not satisfied with the policy of their faculty in which they study. It is remarkable that the students agree with the view as "it can be useful to create a web site where the students and the teaching staff can meet". This finding can signify the art students are in need of mobile technologies.

When the findings obtained from the study assessed collectively, the following conclusion can be made: the candidate teachers who participated in the study still have a traditional training philosophy, though they use mobile technologies intensely. Indeed, this case is also true for general educational system. One possible reason of this is that the lecturers in Turkey have not integrated teaching and learning terms with technology [12]. Another reason is that those lecturers have not been able to understand thoroughly the change in the form of replacing positivist and traditional paradigms with para-positivist paradigms [14]. In fact, despite the rapid changes in economic and social life in recent years, the education, to a great extent, is maintained in accordance with the facts in 20. century. From this point of view, it would not be exaggerated to say that Turkey still have much to do in order to access the goal to be an Information Society.

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