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Mobile Learning Readiness and Time of Daily Use

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ABSTRACT

The objective of this paper can be stated as to ascertain whether or how groups based on the time of daily use evaluate the dimensions of mobile learning readiness.A questionnaire consisting of 19 items was used to document and record responses. The dimensions of the Mobile Learning Readiness were M-learning Self-efficacy (five items), Optimism (five items), Mobile Directed Learning (five items), Self-directed Learning (two items), and M-learning Management (two items). The respondents were students studying in the technological institutions in Delhi, India. The analysis was done on 202 questionnaires, after removing improperly filled or half-filled questionnaires. ANOVA test was used in finding the result of the paper. The output showed a strong relation between how the respondents perceive the M-learning Self-efficacy, Optimism, Mobile Directed Learning, Self-directed Learning and M-learning Management dimensions of the Mobile Learning Readiness and the Time of Daily Usage. The authors opine that this form a study has not been done before especially in the Indian context.

Key words: Technology Readiness, Mobile Learning Readiness, Time Of Daily Use, Readiness, E-Learning.

1. INTRODUCTION

The development in the field of technology, especially related to mobiles, has led to the enablement of users to access to digital content on their devices like phones, mobiles, and tablet [1]. The amount and the depth of the information that is accessed via technologies that are mobile have changed the lifestyle of people, and resources for people to learn have been expanded [2].As the mobile devices are portable, they allow their users to access knowledge, that doesn't come along with any time or space constraints [3].The possession of smart phones and other mobile devices has seen an exponential growth and the prevalence of wireless networks that provide seamless internet access (e.g. Wi-Fi and 3G), learning with the use of mobile has become very popular and has started to play a secondary role and sometimes even a primary role in various forms of education, be it formal or informal[4].

As different individuals may be able to utilize learning on mobiles with different levels of effectiveness, an important parameter that could affect this could be readiness. Readiness is extracted from the action of the individual or an experience related to objects [5] and is strongly related to the happening of an action or the use of an object. The readiness to adopt or accept a technology can be referred to as the object [6]. The readiness of the organization to manage changes that emanate from the implementation of an information system can be referred to as an action [7]. The context of readiness to learn

can also be considered an action [8]. The concept of mobile learning readiness (MLR) from the perspective of psychology can be said to be at the intersection of the readiness to learn and the readiness to adopt a technology. M-learning can be understood as the incorporation of technology that is mobile, into activities related to learning [9]; Mobile Learning Readiness is defined as the propensity of an individual to accept or use mobile-technology to undertake activities of learning which may be formal and/or informal.

Through this research paper, we wish to ascertain the relation (if any) between the Mobile Learning Readiness and the Time of Daily Usage, i.e. the time that the user spends on the mobile technology on a daily basis. The objective of this paper can be stated as:

(1) To ascertain whether or how groups based on the time of daily use evaluate the dimensions of mobile learning readiness.

2. LITERATURE REVIEW

2.1 Technology Readiness(TR)

TR has been cleared by Parasuraman (2000) as the propensity of the people to embrace new technology and to use it for accomplishing their personal goals [6]. It is the psychological position of a person that tells us how prepared the person is in order to accept the new and changing technologies.

Technology readiness is often put into use as a multidimensional construct. Suggesting that technology readiness is defined by a mixture of both, things that facilitate it and things that inhibit it, Parasuraman (2000) argued that technology readiness could be said to be a mixture of the following: innovativeness, optimism, insecurity, and discomfort [6]. Innovativeness and optimism are positive contributors to technology readiness whereas insecurity and discomfort hamper the person's readiness to accept new forms of technologies. Innovativeness can be described as the inclination towards trying and testing a newer variety of technologies to gain an experience that can be called fantastic irrespective of whether the products of the experience are positive or negative[10][6]. People who have a higher amount of innovativeness will be the first to accept the newer technologies and may be called as the early adopters [11]. Optimism in the context of technology refers to a positive thought that technology can help in improving the quality of life by providing flexibility, increased control, and efficiency [6]. People who are optimistic can focus more on the benefits

of the technology rather than upon the cons of it [12]. Conversely, it can also be said that insecurity is to an extent related to the distrust shown towards technology for security reasons and privacy reasons [12]. A perception of having a lack of control and having a sense of being overwhelmed in a way by technology causes discomfort [13].

2.2 E-learning readiness

A good level of relation was found across the board i.e. for all factors. E-learning makes the use of technology that is either available for free or is available online [14].The extent to which this method has been replacing the conventional methods of teaching varies from none to completely online courses that provide distance education [15]. With the increasing popularity of web-based services for sharing information and making contact, learning online has become synonymous to e-learning. For example, Holsapple and Lee-Post (2006) freely interchanged the words electronic learning and online learning [16].Electronic-learning readiness is often a strong indication of the belief of the learners' belief about access to content and making contact in an environment that is mediated by the computer via the internet [17]. When it is contrasted to physical methods of learning, it is more learners centered, whereas, in physical forms of learning, the imparting of knowledge happens in a synchronous way and is more centered towards the teacher [18]. The people who chose this method of learning have more autonomy in various aspects of learning such as the presentation more, selection of materials, and the pace at which they can learn the content. About these factors, learner characteristics (e.g. attitude and computer self-efficacy) are obviously crucial determinants influencing the effectiveness of online learning systems [19].

2.3 Mobile learning readiness (MLR)

The e-learning readiness that has been mentioned above was designed keeping in mind stationary computers or technology based on the Internet. However, in order to understand mobile learning experiences better, a specific exploration for the same is deemed necessary. As it has been mentioned earlier, MLR is said to be the readiness of a person to embrace the technologies that are mobile to carry out learning activities, be it formal or informal. This conception inconsistent with the literature on technology readiness and online learning or e-learning readiness. With reference to mobile learning, Hussin et al. (2012)said that MLR is one of the basic factors of assessing readiness (i.e. using various features of mobile technology), along with other factors such as skill readiness (i.e. having the required skills to do so),psychological readiness (i.e. being ready psychologically),and budget readiness (i.e. financial ability to pay for incurred expenses)[20].

2.4 Hypothesis

Based upon the above-stated objectives, the following hypothesis were established for purpose of this study:

H1. Differences in Time of Daily Usage will affect how the M-learning Self-Efficacy is perceived by the respondents as a part of the Mobile Learning Readiness.
H2. Differences in Time of Daily Usage will affect how the Optimism is perceived by the respondents as a part of the Mobile Learning Readiness.
H3. Differences in Time of Daily Usage will affect how the Mobile Directed Learning is perceived by the respondents as a part of the Mobile Learning Readiness.
H4. Differences in Time of Daily Usage will affect how the Self-Directed Learning is perceived by the respondents as a part of the Mobile Learning Readiness.
H5. Differences in Time of Daily Usage will affect how the M-learning Management is perceived by the respondents as a part of the Mobile Learning Readiness.

3. METHODOLOGY

3.1 Frame of Respondents

This study was conducted in the Technological Institutions across New Delhi, the capital of the Republic of India. The students studying in these institutions were the participants of the survey. A 19 items MLR instrument with five dimensions was distributed to the students.

3.2 Data Collection

The responses from the survey were collected over a period of three months from November 2016 to January 2017. Customers gave a response about their experience as students enrolled in courses in these institutions. Researchers assessed how the Time of Daily affected the Mobile Learning Readiness. ANOVA test was considered. SPSS 16.0 software was considered.

4. ANALYSIS AND RESULTS

ANOVA tests to find out the relation between the different dimensions decided and the groups divided based on mobile usage were carried out and the responses were noted.

4.1 ANOVA Test Results

Following were the findings purely based on ANOVA test results (Table 1):

1. For FAC1, a significant difference was observed in the responses of different groups (Sig. < 0.05). Hence, a direct relation was established within the technical accuracy of this test between MLR and time of daily usage.

2. For FAC2, a significant difference was observed in the responses of different groups (Sig. < 0.05). Hence, a direct relation was established within the technical accuracy of this test between MLR and time of daily usage.

3. For FAC3, a significant difference was observed in the responses of different groups (Sig. < 0.05). Hence, a direct relation was established within the technical accuracy of this test between MLR and time of daily usage.

4. For FAC4, a significant difference was observed in the responses of different groups (Sig. < 0.05). Hence, a direct relation was established within the technical accuracy of this test between MLR and time of daily usage.

5. For FAC5, a significant difference was observed in the responses of different groups (Sig. < 0.05). Hence, a direct relation was established within the technical accuracy of this test between MLR and time of daily usage.

Table 1: ANOVA RESULTS-TIME OF DAILY USE AND MOBILE LEARNING READINESS

	Factor	Sum of Squares	df	Mean Square	F	Sig.
FAC1	Between Groups	35.534	4	8.884	10.556	.000
	Within Groups	167.466	199	.842		
	Total	203.000	203			
FAC2	Between Groups	14.411	4	3.603	3.802	.005
	Within Groups	188.589	199	.948		
	Total	203.000	203			
FAC3	Between Groups	26.483	4	6.621	7.464	.000
	Within Groups	176.517	199	.887		
	Total	203.000	203			
FAC4	Between Groups	21.626	4	5.406	5.932	.000
	Within Groups	181.374	199	.911		
	Total	203.000	203			
FAC5	Between Groups	19.591	4	4.898	5.314	.000
	Within Groups	183.409	199	.922		
	Total	203.000	203			

4.2 Post Hoc Analysis

A good level of relation was found across the board i.e. for all factors, hence a post hoc analysis of the ANOVA test was performed (Table 2). Following were the findings of the Post hoc test results:

1. For FAC1, group-1 showed a considerable difference in the content of responses in comparison to group-4 (Sig. =0.002). Group-2 showed a considerable difference in the content of responses in comparison to group-4 (Sig. = 0.005). Group-3 showed a considerable difference in the content of responses in comparison to group-4 (Sig. = 0.002). Group-5 too showed a considerable difference in the content of responses in comparison to group-4 (Sig. = 0.000). As can be observed, group-4 showed a considerable difference in the content of responses in comparison to all other groups.

2. For FAC2, group-2 and group-5 showed considerable difference in their responses (sig. value = 0.06).

3. For FAC3, group-1 showed a considerable difference in the content of responses in comparison to group-4 (sig. value = 0.013) and group-2 too showed a considerable difference in the content of responses in comparison to group-4 (sig. value = 0.000).

4. For FAC4, group-1 showed considerable difference in the content of responses in comparison to group-2 (sig. value = 0.021) and group-2 showed considerable difference in the content of responses in comparison to group-4 (sig. value = 0.002).

5. For FAC5, group-2 and group-4 showed a considerable difference in the content of responses (sig. value = 0.000).

Table 2:. POST HOC TEST RESULTS-BRANCH AND SCE DIMENSIONS

Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.
FAC1	1	2	1.27532177	.46959900	.055
		3	1.07267007	.48568029	.181
		4	1.79929221*	.47178429	**.002**
		5	.48001908	.51622348	.885
	2	1	-1.27532177	.46959900	.055
		3	-.20265170	.18878590	.820
		4	.52397044*	.14944961	.005
		5	-.79530269*	.25737416	.019
	3	1	-1.07267007	.48568029	.181
		2	.20265170	.18878590	.820
		4	.72662214*	.19415794	.002
		5	-.59265099	.28566340	.235
	4	1	-1.79929221*	.47178429	.002
		2	-.52397044*	.14944961	.005
		3	-.72662214*	.19415794	.002
		5	-1.31927313*	.26134010	.000
	5	1	-.48001908	.51622348	.885
		2	.79530269*	.25737416	.019
		3	.59265099	.28566340	.235
		4	1.31927313*	.26134010	.000
FAC2	1	2	.84620302	.49833604	.437
		3	.58626927	.51540142	.786
		4	.50953666	.50065505	.847
		5	-.10105879	.54781370	1.000
	2	1	-.84620302	.49833604	.437
		3	-.25993375	.20033863	.693
		4	-.33666636	.15859515	.215
		5	-.94726181*	.27312413	.006
	3	1	-.58626927	.51540142	.786
		2	.25993375	.20033863	.693
		4	-.07673261	.20603940	.996
		5	-.68732806	.30314453	.160
	4	1	-.50953666	.50065505	.847
		2	.33666636	.15859515	.215
		3	.07673261	.20603940	.996
		5	-.61059545	.27733276	.183
	5	1	.10105879	.54781370	1.000
		2	.94726181*	.27312413	.006
		3	.68732806	.30314453	.160
		4	.61059545	.27733276	.183
FAC3	1	2	-.81524031	.48212243	.442

		3	-1.11103740	.49863257	.174
		4	-1.56177445*	.48436599	.013
		5	-1.26622463	.52999030	.123
	2	1	.81524031	.48212243	.442
		3	-.29579709	.19382051	.547
		4	-.74653413*	.15343518	.000
		5	-.45098432	.26423790	.432
	3	1	1.11103740	.49863257	.174
		2	.29579709	.19382051	.547
		4	-.45073704	.19933581	.162
		5	-.15518723	.29328157	.984
	4	1	1.56177445*	.48436599	.013
		2	.74653413*	.15343518	.000
		3	.45073704	.19933581	.162
		5	.29554981	.26830960	.806
	5	1	1.26622463	.52999030	.123
		2	.45098432	.26423790	.432
		3	.15518723	.29328157	.984
		4	-.29554981	.26830960	.806
FAC4	1	2	1.49407598*	.48871074	.021
		3	1.39180400*	.50544650	.050
		4	.90543577	.49098496	.351
		5	.88476023	.53723274	.469
	2	1	-1.49407598*	.48871074	.021
		3	-.10227199	.19646911	.985
		4	-.58864022*	.15553191	.002
		5	-.60931576	.26784877	.157
	3	1	-1.39180400*	.50544650	.050
		2	.10227199	.19646911	.985
		4	-.48636823	.20205978	.118
		5	-.50704377	.29728933	.433
	4	1	-.90543577	.49098496	.351
		2	.58864022*	.15553191	.002
		3	.48636823	.20205978	.118
		5	-.02067554	.27197611	1.000
	5	1	-.88476023	.53723274	.469
		2	.60931576	.26784877	.157
		3	.50704377	.29728933	.433
		4	.02067554	.27197611	1.000
FAC5	1	2	-.14772559	.49144434	.998
		3	-.03462148	.50827371	1.000
		4	.54246103	.49373128	.807

	5	-.06069164	.54023775	1.000
2	1	.14772559	.49144434	.998
	3	.11310411	.19756806	.979
	4	.69018662*	.15640188	.000
	5	.08703395	.26934698	.998
3	1	.03462148	.50827371	1.000
	2	-.11310411	.19756806	.979
	4	.57708251*	.20319000	.039
	5	-.02607016	.29895221	1.000
4	1	-.54246103	.49373128	.807
	2	-.69018662*	.15640188	.000
	3	-.57708251*	.20319000	.039
	5	-.60315267	.27349741	.182
5	1	.06069164	.54023775	1.000
	2	-.08703395	.26934698	.998
	3	.02607016	.29895221	1.000
	4	.60315267	.27349741	.182

5.CONCLUSIONS AND MANAGERIAL IMPLICATIONS

The results of the ANOVA test conveyed that there definitely was a fairly good amount of relation between the factors selected for MLR and the groups divided on the basis of the time of usage.

In the case of FAC1, a good amount of difference was found between the responses of the groups (Sig. = 0.000). This shows that Differences in Time of Daily Usage will affect how the FAC1 is perceived by the respondents as a part of Mobile Learning Readiness.

In the case of FAC2, a satisfactory amount of difference was found between the responses of the groups (Sig. = 0.005). This shows that Differences in Time of Daily Usage will affect how the FAC2 is perceived by the respondents as a part of Mobile Learning Readiness.

In the case of FAC3, a good amount of difference was revealed between the feedbacks of the categories (Sig. = 0.000). This shows that Differences in Time of Daily Usage will influence how the FAC3 is perceived by the respondents as a part of Mobile Learning Readiness.

In the case of FAC4, a good amount of difference was found between the feedbacks of the categories (Sig. = 0.000). This shows that Differences in Time of Daily Usage will influence how the FAC4 is perceived by the respondents as a part of Mobile Learning Readiness.

In the case of FAC5, a good amount of difference was found between the feedbacks of the categories (Sig. = 0.000). This shows that Differences in Time of Daily Usage will influence how the FAC5 is perceived by the respondents as a part of Mobile Learning Readiness.

The survey and the following analysis clearly shows that different groups on the basis of the time of usage have different levels of MLR. This has some clear managerial implications. They are:

1. Now that we know the relation between MLR and time of usage, a more comprehensive strategy can be developed by Governments and Organizations which work or are planning to work in the field of Mobile Learning.

2. The results can be compared with similar studies done for E-learning readiness and thus significant characteristic differences between ELR and MLR can be found which can help Organizations in diversifying their client acquisition strategies.

3. The results can also be used, coupled with some basic information about the target audience (like course being pursued, college details, etc.), to strategize online ad targeting schemes.

6.   LIMITATIONS AND FUTURE RESEARCH

The above-summarized study should be elaborated to include the finer characteristics of MLR. Moreover, this survey was conducted in the technical colleges of Delhi. It should be conducted in more cities of India, which may lead to a deeper understanding of the dependence of MLR on user behavior.

The responses of the same survey from rural areas of India and other countries will give a very fresh outlook towards the road ahead in terms of introducing mobile learning as an aid to teaching in schools.

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