THE ACCEPTANCE OF MOBILE WIRELESS NETWORK BASED WIDGET FOR SUSTAINING LEARNING IN HIGHER EDUCATION

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Abstract --- Nowadays, the utilization of mobile applications has become the most important services that occupy various aspects in users activities wirelessly. The emerging of external functionalities into the mobile are consider an essential step to sustain the use of mobile among different group of users especially with the enhanced user interface. Mobile learning based widget became widely recognized of its capabilities to attract learners to use mobile. This study reviews the important of m-learning in sustaining learning for higher education. We measured the students' acceptance to use m-learning based widget. The questionnaire items were formulated based on TAM. The result revealed that using widget with effective and user friendly features will be favored by the students in higher education institutions.

Keywords: m-learning, TAM, higher education learning

1. INTRODUCTION

Mobile services help users to perfume a definite activity at anytime and anywhere such as in learning, business, and communication [1].

However, mobile application can also supply the voters into the voting questions by enabling them to answer these questions easily through their mobile devices [2]. This service usually starts by providing the user with the require information about the voting based brief description in which the voted users will be able to vote again.

The current enhancement in the mobile services and networking for existing programs and applications has presents the opportunities for multiple collaboration among distributed groups of people by providing a means for gathering preferences and opinions across time and space [3]. Furthermore, the new classification of such a services along with this potential has justifies the possibility of alleviating the frustration often associated with real-time, face-to-face meetings [4].

The traditional processing of the learning mechanism shows the needs to identify a new techniques and tools to be integrated into different devices such as mobile devices with long accessing range, these kind of services provides an quick, instantaneous information gathering amongst groups of people, alleviating the time required for more free-form collaboration [5-6]. Incorporated into a mobile ad hoc network, learning applications can be implemented easily across a network of distributed individuals, presenting a tempting alternative to time consuming, inconclusive meetings etc [7].

2. MOBILE GROWTH

Mobile applications increasingly affect business activity and information distribution. They are gaining wide acceptance due to the increased need to support the mobile workforce and rapid enhancement in wireless communication devices and technologies [8]. Many applications allow sending and viewing email, browsing the World Wide Web, viewing traffic and weather reports, watching movies, and accessing back-end database systems [9].

The large progresses of affordability and the accessing of the mobile phones in all world communities present an essential step for developing the fundamental basis [10-11]. This became more familiar to use in the nations and the rural sectors. There are facts that need to determine during the increasing of using the mobile devices in the nations sectors such as:

Affordability (Demand-Side): The mobile devices proved offer affordability and choice, even for very low-income customers.

Affordability (Supply-Side): Establishing mobile masts and turrets is a relatively inexpensive way of serving large & remote rural areas, comparing with fixed line telephony.

Flexibility: The mobile devices can used for many facilities, which support the user for send the message, voice, video, and WAP applications (more flexible than radio/TV).

Low Barriers to Entry: The mobile device has become in this days the most effective and easily accessible for the

external and internal use in the rural areas. The low cost of buying these devices by the user make it more flexible to have these devices in these areas. Otherwise make them within reach for even the poor areas [12].

From the other hand, the services of Internet are a totally open and distributed environment which allows different types of service providers to provide different types of services on the network. The internet has traditionally been an educational and research oriented network with global access [13]. Recently, the current enhancements in providing online services with the flexibilities have been growth in different online sectors which offers better inter connecting medium for data, different information, and sharing files [14].

The using of Internet application for different purposes has been modeled the needs for such applications to perform the customers or users needs which involved a certain requirements, within certain services users and customers able to manage and share their needs over these applications [15-16].

Deploying other external technologies helped to emphasis the quality of these applications and generates users' satisfactions among many
uses as shown in Figure 1 [17].

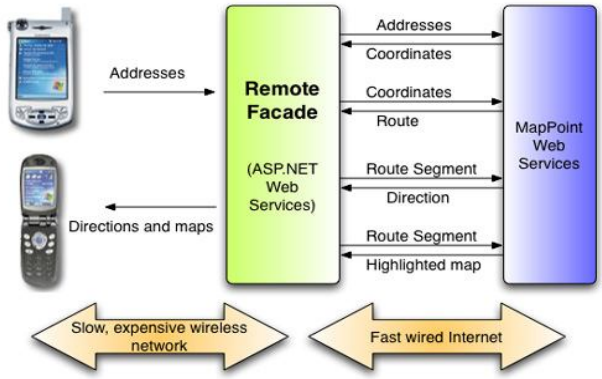

Figure 1: Internet technologies towards wireless technology

Figure 1 shows the recent massively online based mobile applications that has occupied a wide range of services that itself deliver to the end users through their mobile devices [18-19].

3. MOBILE IN HIGHER EDUCATION

The benefits of m-learning can be classified into different aspects in terms of Easy Access – knowledge is delivered on-demand, with updated information within the precincts of the m-learning campus, Options for Self-study – the flexibility of m-learning enables participants to learn at their own time and pace even more compared to the fixed PC access. Evaluation and Feedback – assessment tools can be included into the m-learning or e-learning packages to monitor student's progress, and produce detailed usage reports.
Access of Online Community – the online materials accessed through m-learning system offers a place for the lecturers and students to interact frequently.

In this study, we measured the acceptance level of using mobile learning based widget among university students. Technology Acceptance Model (TAM) by Davis [20]was used. It was developed by Fred Davis and Richard Bagozzi. Davis defined perceived usefulness (PU) as the degree to which a person believes that using a particular system would enhance his or her job performance. Also, Davis defined perceived ease of use (PEOU) as the degree to which a person believes that using a particular system would be free of effort. Behavioral intentions (BI) referred to the willingness of an individual to perform certain behaviors. Figure 2 shows the basic form of TAM.

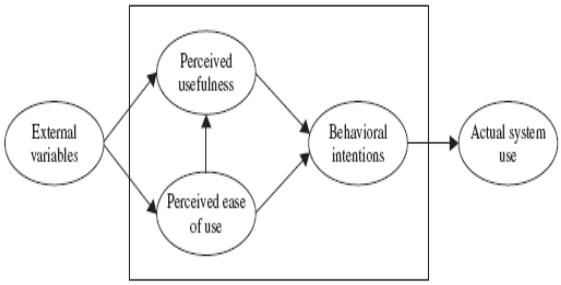

Figure 2: Basic form of TAM

Table 1 presents the results of coefficient of reliability for the five variables. In this survey, four variables are with high Alpha value e.g. PU (0.932), PEOU (0.942), BI (0.950), and PI (0.958). Variable Affinity with mobile learning has lower Alpha value 0.658 compared to the other variables. Since all variables Alpha values are higher than 0.6, it means all variables are in acceptance level. Therefore all five variables are deemed to be reliable measures.

Table 4 also presents the results of mean and standard deviation of the five variables. PEOU variable has the highest mean value ($\bar{x}$ = 4.38, S.D = 1.55). BI variable has the second highest mean value ($\bar{x}$ = 4.19, S.D = 1.58). PU variable has a higher mean value of 3.77 and standard deviation of 1.47 than AW variable ($\bar{x}$ = 3.63, S.D = 1.05). PI variable has the lowest mean value ($\bar{x}$ = 3.11, S.D = 1.60) compared to the other variables.

TABLE 1:
RELIABILITY STATISTICS AND DESCRIPTIVE ANALYSIS.

		Cronbach's Alpha	Mean	Std. Deviation
Affinity with mobile learning		$\alpha = 0.658$	3.63	1.05
(AF1)	I like to use mobile learning.			
(AF2)	I feel uncomfortable without using mobile learning.			
(AF3)	Mobile learning is one of the important features in my learning.			
Perceived usefulness (PU)		$\alpha = 0.932$	3.77	1.47
(PU1)	I find mobile learning useful to me.			
(PU2)	Mobile learning helps me getting information I needed.			
(PU3)	Using mobile learning enhances my effectiveness in my daily routine learning.			
Perceived ease to use (PEOU)		$\alpha = 0.942$	4.38	1.55
(PE1)	My interaction with mobile learning s does not require a lot of my mental effort.			
(PE2)	I find mobile learning is easy to use.			
(PE3)	I find mobile learning functions are clear and understandable.			
Behavioral intention to use (BI)		$\alpha = 0.950$	4.19	1.58
(BI1)	Assuming I have the chance to use mobile learning, I intend to use them.			
(BI2)	Given that I have the chance to use mobile learning, I predict that I would use them.			
(BI3)	I recommend others to use mobile learning.			
Intention to purchase (PI)		$\alpha = 0.958$	3.11	1.60
(PI1)	Assuming I have the chance to purchase mobile device for learning, I intend to purchase them.			
(PI2)	I intend to purchase the mobile learning to assess me with my learning.			

4. CONCLUSION

In this study, students' acceptance level of mobile learning based widget is separated into 3 levels which are high, medium and low. However, respondents in this study have demonstrated a positive behavioral intention to use the mobile learning. Based on the findings, consumer behavioral intention to use the mobile was positively related to perceived usefulness and perceived ease of use of the system. Therefore, it is believed that using widget with effective and user friendly features will be favored by the students in higher education institutions.

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