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Predictive Relationship Between Technology Acceptance Readiness and the Intention to Use Malaysian EduwebTV Among Library and Media Teachers

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Abstract

Library and Media Teacher (LMT) serve**s** as a catalyst for the implementation of the technology programs conducted in schools. The challenge to the LMT is to be more open and innovative to the innovations introduced in schools from time to time. Their level of readiness to accept new technology in teaching and learning earlier than their colleagues in schools could expedite the diffusion process into the school education system. Therefore, this study was conducted to measure the level of readiness acceptance among LMT in terms of Personal Innovativeness (PI), Personal Innovativeness Information Technology (PIIT) and Computer Self-Efficacy (CSE), and the contribution to the acceptance of Edu web TV in teaching and learning. The study involved 546 respondents consisting of LMT of primary and secondary schools in Malaysia. The findings show that the readiness acceptance level among LMT in terms of PI, PIIT and CSE are moderate. Significant relationships were found between CSE, PI, PIIT and behavioural intentions to use the Edu web TV. The obtained results also show that PIIT and CSE significantly contributed to the intention to use Edu web TV. Therefore, those individuals with higher levels of PIIT and CSE are more open, willing to try and confident in the adoption of new technology in teaching and learning than those with lower levels of PIIT and CSE. These results provide valuable feedback to institutions and educators in enhancing the effectiveness of LMT.

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1. Introduction

Computing technology has been marketed as the current solution to problems of education (Rockman, 2000), and the quest for technologically equipped schools has grown dramatically. Computers and computing technology are not only necessary for quality schools but are indicative of good teaching and student learning. Therefore, in an

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effort to provide quality education for all through the use of information and communication technology (ICT), the Malaysian Ministry of Education (MOE) has implemented a video-based interactive educational portal, since March 2008. This innovation is known as the Educational Web Television or Edu web TV. This educational portal aims at developing the teaching and learning of the nation through creative use of ICT. It is also an effort to reduce the digital divides in urban, sub-urban, rural and interior districts. This portal is an interactive educational portal based on applicable video in the teaching and learning process. For this technology adoption to be successful teachers must be willing to change their role in the classroom.

The introduction of new technologies often involves some form of change for the users. Such a change could be as minor as a simple modification of the user interface, or as profound as a complete alteration of the way an individual accomplishes a certain daily task. Different users may react differently to the changes. Some might welcome these changes, while others might resist them. Users' resistance to the changes brought about by new technologies is often the main reason of why an information-technology project fails (Venkatesh et al. 2000). Although teachers may believe that computers can lead to improved teaching and learning, they may choose not to use this technology if they have low confidence in their abilities to use computers. Issues related to the slow acceptance of technological innovations among teachers are often debated after several years after the innovation was introduced. According to Rogers (2003), the role of change agents can help to speed up the diffusion of innovation in the social system of an organization. For the purpose of diffusing the EduwebTV in school, Library and Media Teacher (LMT) is one of the change agent. Therefore, they must be proficient with technology, helping in addressing the information needs of users, promoting new technologies in teaching and learning, and being early users of Edu web TV compared to other teachers in the school. The question is, are LMTs in Malaysian school innovative toward adopting new technology? Are they confident to use new technology implemented in schools? Therefore, this research is carried out to identify the level of technology acceptance readiness among LMT in terms of their computer self-efficacy and innovativeness in accepting new technology. Can computer self-efficacy and the innovativeness influence their intention to use the new technology in teaching and learning?

2. Review of Literature

Previous research claimed that the lack of user acceptance has been an impediment to the success of new technology (Davis, 1993). Apart from teachers' knowledge and skill, there are several other studies that show teachers' belief is one determining factor in the ability of teachers' intention in using the new technology in teaching and learning (Ramayah & Aafaqi, 2004; Beas & Salanova, 2006; Crawford, 2008), teachers' attitude such as inertia to change, lack of willingness to take risks, being afraid to deviate from the usual educational practices and lack of awareness on the benefits of new technology can be an impediment to the teacher to adopt the new technology (Hunt et al. 2004; Weston, 2005). Recently, there has been a growing interest in studying personality as an explanatory tool in the literature to help understand people's use of information technology (Devito Da Cunha & Greathead, 2007; Oreg & Nov, 2008; Pratt & Chudoba, 2006). According to Schillewaert et al. (2000), personal innovativeness and computer self-efficacy are related to consumer's acceptance readiness.

According to Schillewaert et al. (2000), personal innovativeness is a personal trait that greatly affects consumers' acceptance towards technology. Innovativeness can also be used to classify people into adopter categories because it is a continuous variable that can be partitioned into discrete categories. General innovativeness and personality construct may be interpreted as willingness to change and not the change itself (Hurt et al. 1977). Consumers can fall under the different parts on a continuum ranging from an ability 'to do things better' to the ability 'to do things differently'. Meanwhile the concept of domain specific innovativeness reflects the tendency to learn about and adopt new products within a specific domain of interest (Goldsmith, 1990). For example, personal innovativeness in information technology (PIIT) is a domain-specific individual trait which reflects the willingness of a person to try out new information technology (IT). According to Agarwal and Prasad (1999), this specific domain has an explicit relationship with individual perceptions of new technology.

Computer self-efficacy (CSE) is a specific type of self-efficacy. The concept of CSE has become an important social construct in assessing people's attitudes towards computer and technology (Cassidy & Eachus, 2002; Campeau & Higgins, 1995). CSE refers to individuals' judgment of their capabilities to use computers in diverse situations (Compeau & Higgins, 1995). Previous research on technology acceptance has confirmed the critical role CSE plays in understanding individual responses to information technology (Agarwal & Prasad, 1999). Therefore, participants with little confidence in their ability to use computers might perform poorly on computer-based tasks.

3. Methodology

This study explores LMTs technology acceptance readiness level, in terms of personal innovativeness, personal innovativeness in information technology and computer self-efficacy. This study also explores the influence and contribution of PI PIIT and CSE on technology acceptance. This study employs a quantitative research design and all the data were collected using questionnaire. The sample **is** selected from a population of LMTs who served in government secondary and primary schools in Malaysia. In this study, a total of 546 LMT are selected to ensure sufficient data for analysis, including graduates and non-graduates. The instruments used consist of personal innovativeness, personal innovativeness in information technology questionnaire and computer self efficacy. The personal innovativeness instrument contains 20 items and represents the scale of openness, enthusiasm and reluctance. It is adopted from the Innovativeness Scale by Hurts et al. (1977) and designed to predict an individual's level of innovativeness on a global level, which can be applied to all types of innovations. Meanwhile, the scale of personal innovativeness information technology questionnaire consist of 6 items. The computer self-efficacy instrument is developed based on the modification of the CSE by Campeau and Higgins (1995). The CSE instrument contains 16 items and represents the scale of confidence in using the innovation and confidence in diffusion of innovation (6 items). Additionally, reliability is obtained through a pilot study. The internal consistency reliabilities (coefficient alpha) ranged from 0.732 to 0.899 for the two CSE scales, 0.829 to 0.89 for the three PI scales and 0.833 to 0.921 for the PIIT scale. Thus, the scales indicate good internal reliabilities.

4. Results and Discussion

4.1. Technology Acceptance Readiness

4.1.1. Personal innovativeness (PI)

The personal innovativeness is measured based on teachers' openness, enthusiasm and reluctance to technology acceptance. Base on Table 1, the finding shows that LMTs have a high level of openness to integrate new technology into their lives. The mean score of the openness scale is the highest of all the scales. In contrast, the mean score of the reluctance scale was the lowest mean compared to other scales. It means that although LMT has a high openness towards the intention of using the EduwebTV, they are less excited to try this innovation in the early stage of its implementation. This could be due to the initial caution in their acceptance of new technology. This level of innovativeness might affect the speed in making the decision to use Edu web TV in the teaching and learning process.

Table 1: Average mean and standard deviation of personal innovativeness scales

No.	Scale	Mean	SD	Level
1.	Openness	3.77	0.46	High
2.	Enthusiasm	3.60	0.45	Modetrate
3.	Reluctance	2.93	0.57	Modetrate
	Overall	3.38	0.38	Modetrate

4.1.2. Personal innovativeness in information technology (PIIT)

The level of PIIT among the LMTs is moderate and the overall mean score is 3.27 (SD= 0.58). This finding means that LMTs are less willing to use Edu web TV in teaching and learning earlier than other user in the school and less willing to learn how to use the Edu web TV. This could be due to the fact that LMTs did not have clear information about Edu web TV and they did not require this innovation in their duties.

4.1.3. Computer Self-Efficacy (CSE)

Based on Table 2, the mean for the confidence in using the Edu web TV is moderate (M = 3.27, SD = 0.67). The mean of the confidence to diffuse Edu web TV is moderate (M = 2.88, SD = 0.62). It means LMTs are more confident to be end users rather than to persuade other teachers to use Edu web TV in their teaching and learning. Overall the level of computer self-efficacy among the LMTs is moderate (M = 3.11, SD = 0.63). The level of computer self-efficacy in this finding can be a serious obstacle for them to turn towards the adoption of Edu web TV in teaching and learning even though they are given a course on Edu web TV.

Table 2:   Average mean and standard deviation of LMTs level of computer self-efficacy

Scale	Mean	SD	Level
Efficacy of using EduwebTV	3.27	0.67	Moderate
Efficacy of diffusing EduwebTV	2.88	0.62	Moderate
Computer self efficacy (overall)	3.11	0.63	Moderate

These findings are consistent with the previous studies (Shyh-Mee & Diljit, 2008; Sami & Pangannaiah, 2006). The reason of having a moderate level of CSE may be due to the content of Edu web TV courses to LMTs ineffective delivery of the knowledge in integrating ICT materials in their teaching and learning.

4.2. The Level of EduwebTV Acceptance

Base on Table 3, the finding shows that LMTs' perception on the ease of use of the Edu web TV is at the high level (M = 4.02, SD = 0.41) but their perceived usefulness of the Edu web TV is at the moderate level (M = 3.47, SD = 0.52). It means that they are less convinced that this innovation is useful to speed up the task of teaching material preparation, simplify the task of teaching and the collections of video can be adapted to any teaching topics. The LMTs' attitude is moderate (M = 3.59, SD = 0.56), indicating that LMTs are unsure of whether they would be comfortable in using Edu web TV. Although their perceived ease of use the Edu web TV is high, their intention to use Edu web TV is moderate (M = 3.45, SD = 0.57).

Table 3: Average mean and standard deviation of acceptance of EduwebTV

Scale	Mean	SD	Level
Perceived ease of use	4.02	0.41	High
Perceived usefulness	3.47	0.52	Moderate
Attitudes	3.59	0.56	Moderate
Intention to use	3.45	0.57	Moderate

4.3. Contribution of Personal Innovativeness, Personal Innovativeness in Information Technology, Computer Self-Efficacy towards EduwebTV acceptance

The contribution of the technology acceptance readiness in terms of personal innovativeness (PI), personal innovativeness in information technology (PIIT), computer self-efficacy (CSE) towards Edu web TV acceptance is determined by multiple regression (stepwise) analysis. In this study, multiple regression analysis were conducted four times and the results are summarized in Table 4. The finding shows that CSE is useful predictor for the perceived ease of use, perceived usefulness, attitudes toward innovation and their intention to use Edu web TV in teaching and learning. It means that LMTs with high level of CSE may adopt the Edu web TV if they perceive it as convenient and useful for their teaching and learning. These findings are in line with Chang et al., (2011), who found that CSE has a positive impact on the perceived ease of use the technology and influenced teachers in making the decision to accept new technology. This study also finds that PIIT is useful predictor for perceived ease of use, perceived usefulness, attitude and the intention to use the Edu web TV. This suggested that having a high level of openness to accept new technology and having a high level of enthusiasm to try Edu web TV will overcome the skeptical nature in acceptance of new technology. Hence CSE and PIIT are useful predictors for the perceived ease of use, perceived usefulness, attitudes toward innovation and the intention to use Edu web TV. The findings of this study are supportive of the finding of the study by Schillewaert et al. (2000) who found that, PIIT and CSE are two individual traits that have a significant affect on the technology adoption.

Table 4: Multiple regression analysis (stepwise) between acceptence rediness and EduwebTV

	Perceived ease of use	Perceived usefulness	Attitude	Intention to use
	β	B	B	β
Computer Self-Efficacy (CSE)	18.2	11.9	19.8	16.8
Personal Innovativeness In Information Technology(PIIT)	3.6	2.3	4.0	3.3

Personal Innovativeness (PI)	-	-	-	-
Multiple Correlation (R)	21.8%	14.2%	23.8%	20.1%

5. Conclusion

Computer self-efficacy and personal innovativeness in information technology are very important as predictors of readiness acceptance of technological innovation. Therefore as a changing agent in school and the user of Edu web TV, LMTs should have high level of acceptance readiness in term of their computer self-efficacy and personal innovativeness in information technology. These combined aspects will influence their readiness to adopt new technology earlier than other colleges in adopting new technology in school. Therefore, LMTs of the Malaysian schools, should be given a course that teaches them how to use any new technology product that have been implemented in the school especially how to integrate the technology in teaching and learning. The LMTs will experience a shift in their attitude after they know about the innovation, so the persuasion stage follows the knowledge stage in the innovation-decision process. A good exposure on how to operate the innovation can give an effective impact to the LMTs' role as change agents which also capable to be role models. This development can helpfully speed up the diffusion and the technology acceptance in Malaysian schools.

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