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PERCEIVED USEFULNES AND ATTITUDE TOWARD THE USE OF LIVETEXT ASSESSMENT SYSTEM

Jose Noguera, Southern University and A&M College, jose_noguera@subr.edu
George Kirk, Southern University and A&M College, george_kirk@subr.edu

ABSTRACT

In this paper, we examine student acceptance of the Assessment software, LiveText. Specifically, we apply the technology acceptance model to study perceived usefulness and perceived ease of use in developing an ePortfolio project. Livetext is software that automates the collection of data and streamlines the reporting of performance data across the university. The adoption and effective use of eAssessment software such LiveText involves time and is risky and thus requires research to determine the factors that influence its success. The TAM model provides a method for examining the factors that lead to intention to use the system as well as providing guidance on what areas faculty may need to address in order to obtain maximal value from the system. Analyses of 125 users of the system provide evidence to support the hypotheses established that an individual's perceived ease of use has a significant effect on the perceived usefulness and the attitude towards the use of the LiveText System; on the other hand, an individual's perceived usefulness and attitude towards the use of the systems have a significant effect on behavioral intention to use it. Thus, our results highlight the importance of stressing perceived usefulness to students as a tool to increase intention to use LiveText.

Keywords: LiveText, eAssessment, Technology Acceptance Model (TAM)

INTRODUCTION

Assessment and assurance of learning current are key areas concern for accrediting agencies. At most institutions, assessment processes are being facilitated using software that promises to automate the collection of data and streamline the reporting of performance across the university. Electronic Assessment (eAssessment) is being implemented across schools to support assessment programs. Frequently the use by students and faculty of these assessment software packages are mandated by the school. Many students may feel that additional burdens are being placed on them and the use of such software packages create resentment by these parties toward the school. In many cases students' themselves directly or indirectly may have purchase or pay a fee to use the software creating yet another source of resentment.

LiveText is a web-based assessment program that documents and reports course assignments, standards or outcomes based projects as well as providing students the opportunity as well as the vehicle to develop and share portfolios of their work and academic achievement with potential employers—a valuable tool for students to differentiate themselves to perspective employers. LiveText allows faculty and students to create and share knowledge/skills in a collaborative electronic learning environment. The assessment features of LiveText can allow faculty to provide specific feedback on students' work through embedded comments in the students' work. Moreover, standards/outcomes based rubrics that clearly define the expectations of the task or assignment can be shared with students. Figure 1 provides an example of a LiveText rubric report outcome. LiveText also provides unlimited storage of academic materials in an online environment that can be accessed anywhere via the internet. While LiveText offers much promise, the promise cannot be realized unless both students and faculty use the program. From the student perspective, their maximal value occurs if they use the software to develop an ePortfolio of their work to provide to potential employers as additional evidence and a demonstration of the level of work that they are capable of.

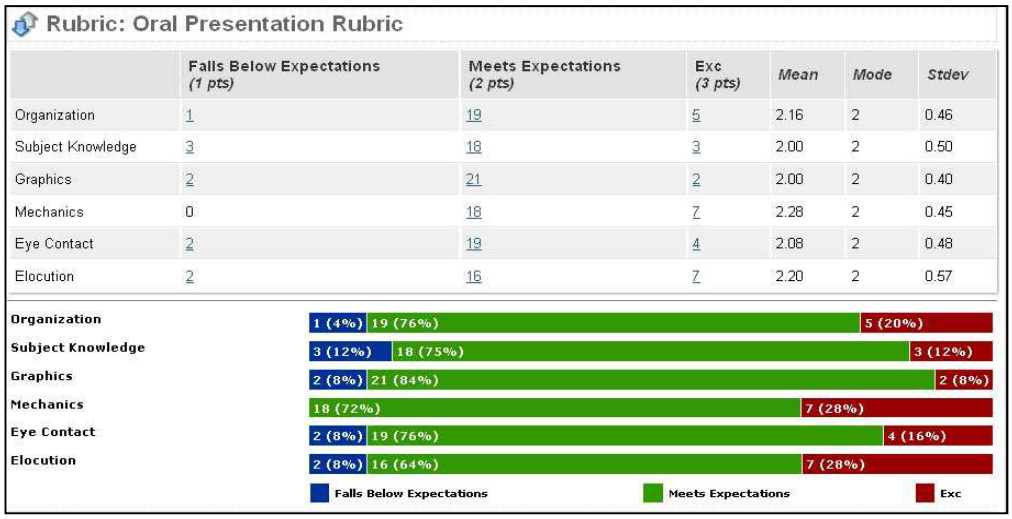

Figure 1. LiveText Rubric Assessment Report

While LiveText has the potential to add value to both faculty and students, successful implementation is influenced by numerous factors including individual acceptance or resistance (Chuttur, 2009, Davis, 1989, Davis and Venkatesh, 1996, Goodhue and Thompson, 1995, Lee, Kozar and Larsen, 2003, Ma and Liu, 2004). Toachieve the value of LiveText or any other assessment software package it is important to identify means through which faculty can facilitate the effective and efficient utilization of the software to perform a giving task such the development of an ePortfolio.

The goal of this study is to identify the factors that influence student intention to use eAssessment software. To provide a basic framework for analysis, the Technology Acceptance Model (Davis, 1989) was used. In addition, this study examines means to understand and improve the effectiveness of LiveText usage for classroom work and assessment by applying the Technology Acceptance Model to provide guidance for administrators, faculty and staff on how best to present LiveText to the students to enhance usage of the software for assessment purposes.

THEORETICAL FRAMEWORK AND RESEARCH MODEL

The Technology Acceptance Model (TAM) (Davis, 1989), is a widely-used model that has been used in the analysis of a variety of technology applications in a variety of situations (Hess, McNab and Basiglu, 2014). In general, TAM postulates that intention to use a particular technology or system is influenced by one's positive perception of that technology's ease of use, usefulness, and attitudes towards technology usage. Overtime, the TAM has been modified (for an excellent review of the history of TAM, please see Chuttur, 2009) and some constructs have been added and other constructs have been eliminated. For the purposes of this research, we used the model presented in Figure 2. The model is comprised of four constructs 1) perceived ease of use (PEOU), 2) perceived usefulness (PU) 3) Attitude toward use (ATT) and 4) Behavioral Intention to use (ITU). Hess, McNab and Basoglu, (2014 provided a detailed breakdown of the various situations under which the TAM model has been used. The present research would be classified under the mandatory category in terms of volitional use. Often when considering purchasing technology, consumers base their assessment of the technology on attributes inherent in the technology; i.e., the quality of the display, differentiation between competitive models, etc. By contrast when technology is mandated, purchasers of the system do not have a choice regarding the use of the system and as such attributes of the technology would play a smaller role compared to the more traditional TAM elements (i.e., perceived ease of use, etc.). Figure 2 provides a visual representation of the model.

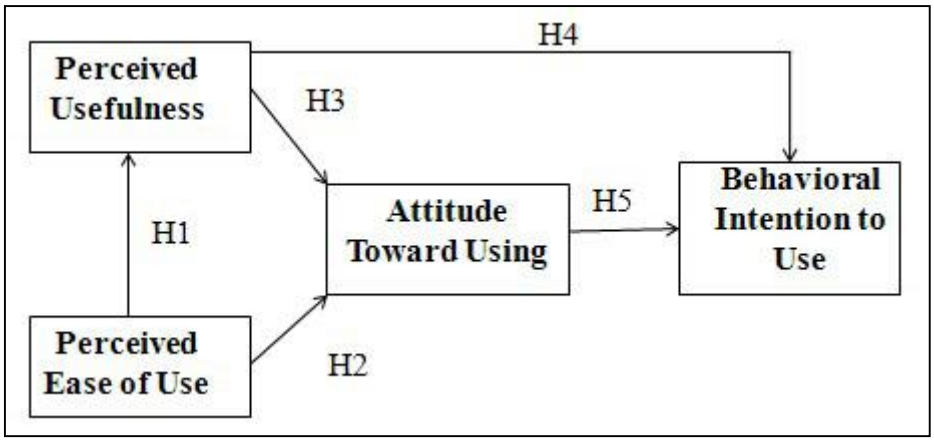

Figure 2. Technology Acceptance Model (TAM) by Davis (1989)

RESEARCH HYPOTHESES

This study tests five research hypotheses to examine student acceptance of assessment software, LiveText, as one Portfolio tool. Each of these hypotheses are drawn from the literature and are consistent with extant TAM based research.

H1: Perceived Ease of Use has a significant effect on the perceived usefulness of the LiveText System.
H2: Perceived Ease of Use has a significant effect on the attitude towards using LiveText System.
H3: Perceived Usefulness has a significant effect on the attitude towards using LiveText System.
H4: Perceived Usefulness has a significant effect on behavioral intention to use LiveText System.
H5: Attitude towards using has a significant effect on behavioral intention to use LiveText System.

METHODOLOGY

Participants in this study included 125 undergraduate students majoring in Business Management. LiveText based assignments were part of the course grade and per university requirements, all students must purchase LiveText. A questionnaire was administered to students based on the TAM constructs developed by Davis et. al. (1989). The constructs were measured using a 5-point Likert-type scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, and 5 = Strongly Agree. The questionnaire asked participants to rate the extent to which they agree with the statement by indicating a number from one to five. All 125 students submitted responses to the questionnaire.

RESULTS

Factor Analysis and Scale Reliability Analysis

To assess construct validity, factor analysis was utilized. The results of the factor analysis are displayed in Table 1. As indicated in the table, items loaded as expected and with the exception of two items, all remaining factors loaded at .90 or higher.

Table 1. Factor loading for the rotated factors

Scale Item	Factor I	Factor II	Factor III	Factor IV
Perceived Ease of Use				
PEOU	0.92			
PEOU	0.91			
PEOU	0.92			
PEOU	0.84			
Perceived Usefulness				
PU		0.92		
PU		0.84		
PU		0.93		
PU		0.91		
Attitude Toward Use				
ATT			0.91	
ATT			0.91	
Behavioral Intention to Use				
ITU				0.91
ITU				0.94
ITU				0.95

Factor I = Perceived ease of use (PEOU); Factor II = Perceived usefulness (PU); Factor III = Attitude toward using (ATT); Factor IV = Intention to Use (ITU)

Scale reliability analysis was assessed by calculating the Cronbach Alpha (Cronbach, 1951). Reliability estimates are presented in Table 2. Our Coefficient Alphas are consistent with the reported in the Hess, et. al. The high values of alpha coefficients indicate that the items under these constructs adequately measure the constructs. Thus, the researchers concluded that the internal consistency reliability coefficient alpha of the instruments was acceptable for purposes of this study.

Table 2. Number of Items and Coefficient Alpha Reliability Estimates for the Study's Variables

Scale	Number of Items	Alpha	N
Perceived Ease of Use	4	0.92	125
Perceived Usefulness	4	0.92	125
Attitude Toward Using	2	0.80	125
Behavioral Intention to Use	3	0.90	125

Hypotheses Testing

Based upon the results of the analysis performed using Mplus 3.0, a model was estimated and hypotheses were tested. The results of the tested model and hypotheses are provided in Table 3 and Figure 3. Overall, the model has an acceptable data fit (Chi-square = 202. 68 with 85 degree of freedom). Figure 3 provides a diagram of the structural model.

Hypotheses 1 was strongly supported indicating that PEOU does have a significant effect on PU. The path loading was .58 ($p<.001$).

Hypotheses 2 was weakly supported calling in question the effect of PEOU on ATT. The path loading was .32 ($p < .089$). This result is not surprising given that ease of use is really a prerequisite for any software packages with competitors. Also, the sample could be viewed as a relatively tech savvy group.

Hypotheses 3 was strongly supported indicating that PU has a significant effect on ATT. The path loading was .66 ($p < .001$). Again, given the sample is comprised of college students most if not all of whom would be classified as a millennial it is not a surprise the PU would play a major role in ATT.

Hypotheses 4 was also strongly supported, indicating that PU has a significant effect on ITU. The path loading was .32 ($p < .001$). Again, given the millennial nature of the sample it is not surprising that PU was again an important aspect.

Hypotheses 5 was also strongly supported, indicating that ATT has a significant effect on ITU. The path loading was .57 ($p < .001$).

Table 3 provides a summary of the significance levels and Figure 3 provides the structural model output.

Table 3. Results of Hypotheses Testing

Hypothesis	Relationship Tested	Results
H1	Perceived Ease of Use (PEOU) has a significant effect on the perceived usefulness (PU) of the LiveText System.	Supported ($p<0.001$)
H2	Perceived Ease of Use (PEOU) has a significant effect on the attitude towards (ATT) using LiveText System.	Supported ($p<0.089$)
H3	Perceived Usefulness (PU) has a significant effect on the attitude towards (ATT) using LiveText System.	Supported ($p<0.001$)
H4	Perceived Usefulness (PU) has a significant effect on behavioral intention to use (ITU) LiveText System.	Supported ($p<0.001$)
H5	Attitude towards using (ATT) has a significant effect on behavioral intention to use (ITU) LiveText System.	Supported ($p<0.001$)

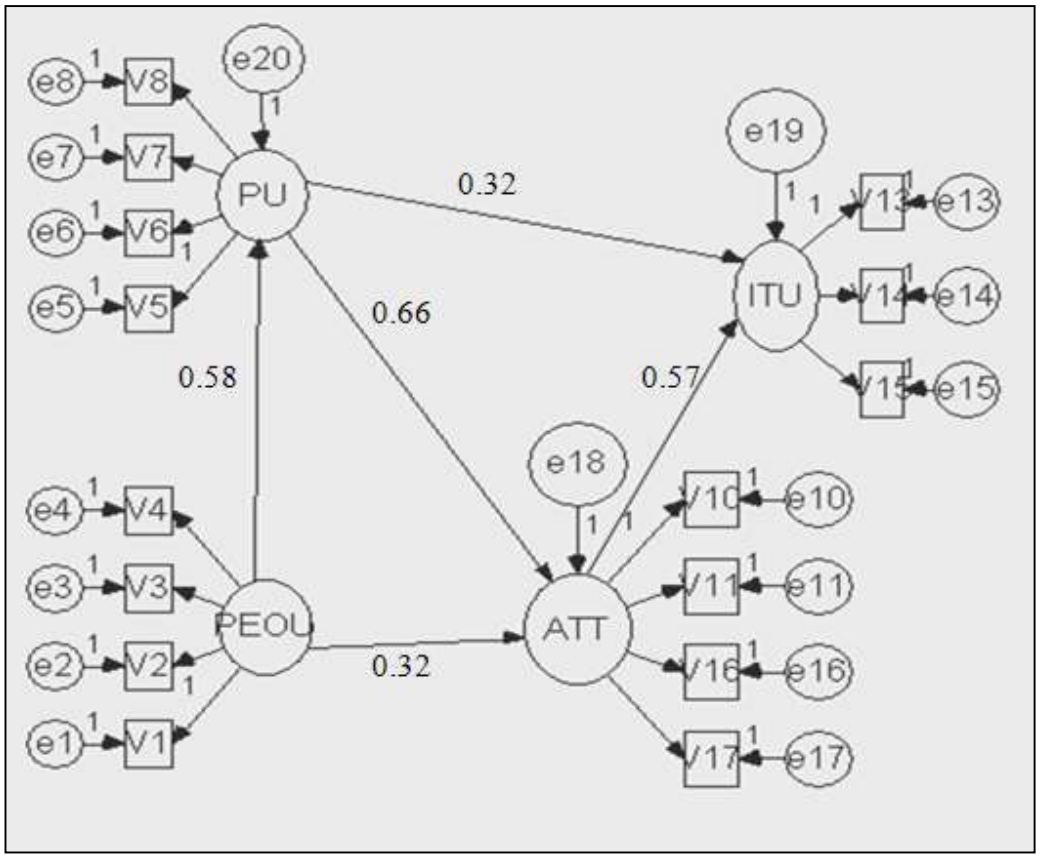

Figure 3. Structural analysis of the corresponding five hypotheses indicated in table 3

Thus, Analyses of 125 undergraduate students majoring in Business Management provide evidence to support the hypotheses established and validated the application of the TAM theory in the context of the use of Livetext, it was determine that an intention to use the eAssessment software is significantly determined by a positive perception of technology's ease of use, usefulness, and attitudes towards technology usage.

DISCUSSION

This study investigated student's behavioral intention to use the LiveText assessment system as it relates to perceived ease to use, perceived usefulness, and attitude toward use of the software. Electronic assessment software is increasingly being used to collect, store, and report learning outcomes performance at a number of schools. Being able to examine the determinants of behavioral intention to use provides an opportunity to identify mechanisms to facilitate their use and thus reduce cognitive overload. It is important that institutions provide learning tools that are perceived to be useful and easy to use to achieve maximal effectiveness. The TAM model provides guidance to faculty that can be used to address problems that students may have such as perceived usefulness to achieve greater acceptance and use of the software package.

Our results indicate that it is important for faculty, when introducing LiveText to the students stress the importance of the Perceived Usefulness of the software and promote the development of ePortfolios. It is our believe that once students perceive that they can receive value from their usage of LiveText, even though mandated, they will be more receptive to the software. Moreover, schools should consider the possibility of coordinating with their respective career services areas to further promote the usefulness of the software product as a tool to differentiate themselves from other candidates in the job market. As faculty, it is incumbent on us to develop assignments that can be used not

only in support of class outcomes but that also allow students to demonstrate as well as showcase their abilities and skills—this in and of itself is also a valuable tool to demonstrate assurance of learning.

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