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## Perception of Attributes and Readiness for Educational Technology: Hospitality Management Students' Perspectives

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### ABSTRACT

In contrast to traditional learning, the success of learning via educational technology is found to rely on the extent to which students are ready for the technology. Measuring the readiness of educational technology with students' commitment, personal involvement, motivation, passion, and availability, this study examined how the level of perception about different attributes of educational technology (i.e., remote access, flexibility, engagement, feeling of isolation) and academic achievement affect hospitality management students' readiness of the technology. Results show that engagement attribute is most and remote access attribute is least likely to affect students' readiness of educational technology.

### KEYWORDS

Attributes; readiness; educational technology; hospitality management; students' perspectives

## Introduction

With the rapid growth of different types of technology in recent years, many young people in economically advanced countries accumulate a vast amount of technological experience before they enter university. Rideout, Foehr, and Roberts (2010) reported that 8- to 18-year-olds spend on average 4.5 hr each day outside their school activities with digital technologies, such as texting messages, talking to friends, listening to music, playing games, using social media applications, and watching streaming videos on cell phones and/or computers (Lai, Khaddage, & Knezek, 2013). Therefore, technology has become an inevitable part of young people's daily lives and has changed their way of thinking and learning from that of their predecessors (Lai & Hong, 2014).

Over the past 20 years, educational technology has revolutionized higher education institutions and become emblematic of 21st-century education (Selwyn, 2007). Learning with educational technologies has gradually become one of the fastest growing educational trends in the United States. Online teaching is changing how education is delivered, and integrating technologies into the classroom has significantly influenced the delivery process (Y. H. Lee, Waxman, Wu, Michko, & Lin, 2013). More than 75% of colleges and universities in the United States offer online degree programs, and more than 4 million students are enrolled in online courses (Setzer & Lewis, 2005).

Rapid technology advancement not only offers educators with various options to choose from in terms of different educational technologies but also leads them to a question about whether the technology of their choice will support effective student learning. Although many universities have come to offer hybrid and online courses, one third of colleges and universities in the United States still offer only face-to-face courses (Sciarini, Beck, & Seaman, 2012; Singh & Lee, 2008). The existing literature suggests that learners' perception of and attitude toward a teaching apparatus, rather than technology itself, are important in effective learning (Ayersman, 1996; Kim, Lee, Kim, & Ryu, 2013). Evidently, the addition of an online teaching method to face-to-face teaching does not necessarily produce a better learning outcome than traditional face-to-face only courses (Aragon, Johnson, & Shaik, 2002). Furthermore, Chen and Chiou (2014) found that individuals' learning styles have a stronger influence on learning outcomes than course delivery mode (i.e., face-to-face and online course).

Thus, understanding the perception of hospitality management students toward the latest educational technologies introduced in their programs will offer insight into the effectiveness of educational technology in higher education learning. To achieve this goal, this study examines the perception of hospitality

management students toward different attributes of educational technology and investigates how perceived technology attributes affect students' propensity to use educational technology in their learning. Findings from this study will assist hospitality educators in selecting educational technologies effectively and designing class activities to best accommodate different academic skills and interests of students (Zacharis, 2011). Also, educators can offer the most effective educational technology tools in different learning settings, as students learn differently in formal and informal settings (Dickey, 2004; Lai, 2011; Taylor & Walton, 2011).

The theoretical underpinning of this study is found in the literature on new technology adoption and technology readiness (Parasuraman, 2000). Defined as a propensity to use new technology to accomplish goals, the concept of *technology readiness* is commonly found in the general marketing literature, whose research focuses on identifying market segments that are most likely to adopt new technologies. Although previous studies have examined popular educational technology and its application in hospitality management programs (W. Lee & Gretzel, 2010; Singh & Lee, 2008), little is known about the relationship between the attributes of educational technology and students' propensity to use educational technology. Thus, findings from this study will contribute to the body of knowledge by expanding the technology readiness literature to the underdeveloped research domain in higher education.

## Literature Review

### **Perceptions of Students Toward Different Attributes of Educational Technology**

A new distinctive generation of students is highly skilled in digital technologies; these students have radically different learning preferences and are not adequately supported by present educational environments. This fact has been a source of debate. The supporters of this claim argue for a dramatic change in how education is being delivered to meet the needs of the new generation of students. However, Lai and Hong (2014) found that approximately one third of students use digital technologies intensively (more than 20 hr per week) for their university studies and social/personal activities (an additional more than 20 hr per week). The remaining two thirds are much less frequent users, with approximately 40% and 34% of them only using digital technologies up to 10 hr per week for university work and for social and personal activities, respectively. The new generation of students may demonstrate different

learning behaviors and approaches, but its way of using digital technology is similar to that of previous generations (Hong & Songan, 2011). Thus, although change in the higher education environment is necessary to enhance the quality of teaching and learning, it remains vague whether educational technology is a necessary change to suit the needs of the younger generation of students (Palfrey & Gasser, 2008; Tapscott, 2009).

In addition to technology readiness, it is critical to understand whether a given technology has attributes that its user perceives as relevant to and valuable and useful in technology adoption (Rogers, 2003). When students perceive attributes of educational technology as satisfactory (dissatisfactory) for their learning preference, they are more (less) likely to use the technology (Aragon, Johnson, & Shaik, 2001; Eom, Wen, & Ashill, 2006; Pawan, Paulus, Yalcin, & Chang, 2003; Wallace, 2003). When students perceive online learning as being instructional and interactive, they are inclined to use e-learning (Butler & Pinto-Zipp, 2006; Northrup, 2002; P. Smith, 2005). Students prefer traditional learning environments to an e-learning environment when they perceive that the e-learning environment is inconsistent with their personal learning style and does not engage them as students (Clayton, Blumberg, & Auld, 2010). Hence, the relationship between perception of attributes of educational technology and the readiness for educational technology needs to be identified.

### **Remote Access and Flexibility**

Educational technology is preferred when users perceive that educational technology offers remote access and flexibility (Hung & Jeng, 2013; Lashley & Rowson, 2005). A flexible learning schedule is clearly an important factor in considering computer-based learning. Feinstein, Raab, and Stefanell (2005) echoed that educational technologies are preferred by students and enhance students' personal involvement because they provide intense experiential learning opportunities to students and add flexibility to the educational experience. Moreover, remote access and flexibility enhance their learning (Bradford, Porciello, Balkon, & Backus, 2007). In other words, students can access learning materials at any place when they have Internet access. Another example of flexibility is found in the use of mobile learning where students select a virtual learning object from an actual environment. Mobile learning can increase learning motivation by allowing students to obtain practical understanding of the learning environment based on its flexibility (Chiang, Yang, & Hwang, 2014).

### ***Engagement, Feeling of Isolation, and Previous Academic Achievement***

Miller, Milholland, and Gould (2012) and S. L. Smith and Walters (2012) indicated an overall positive student attitude toward educational technology (i.e., Classroom Response System) because it enables learners to interactively engage in learning. Studies have shown that students' engagement in learning mediated by educational technology is positively related to their commitment and motivation to use educational technology (Burnstein & Lederman, 2001; Caldwell, 2007; Costen, 2009).

However, some concerns have been raised about adopting e-learning, especially mobile learning. Limited technical ability of users, feelings of isolation when learning, difficulty connecting with the instructor, a blur between class/work/personal life, and the distraction of other apps are identified as potential disadvantages of mobile learning (S. D. Smith & Caruso, 2010; S. L. Smith & Walters, 2012). Eraqi, Abou-Alam, Belal, and Fahmi (2011) found that potential problems with e-learning include a sense of learner isolation, learner frustration, anxiety, and confusion. However, Costen (2009) found that students will not feel isolated in a virtual communication platform because the easy communication makes them feel connected with one another and enhances their commitment and personal involvement. Similarly, Jarvela, Jarvenoja, and Veermans (2008) highlighted the fact that key to the success of e-learning is students' motivation, as e-learning is based on a virtual environment in which students lack face-to-face monitoring and feel physically isolated. Hence, motivations such as in-time communication can make students more committed to the e-learning environment.

Rogers (2003) discovered that students with a higher education level are more likely than their counterparts to adopt innovative practices. Hence, education level is linked to predicting e-learning readiness. In terms of the relationship between students' previous academic achievement and their readiness for educational technology, no previous study has examined this; only a general description of the preference for educational technology among today's students has been provided (Murphy & Smark, 2006; Zhu & Kaplan, 2002). In this study, education level refers to students' previous academic achievement.

### ***Readiness for Educational Technology***

At present, the popularity of educational technology has been accelerated by the wide spread of social network and mobile devices before fully understanding the

extent to which students are inclined to use educational technology in their learning. E-learning, used interchangeably with *online education*, *computer-based learning*, and *technology-enhanced learning*, has been implemented in multiple education departments and learning institutions (Eraqi et al., 2011; Oh & Reeves, 2014). However, the mental and physical preparedness of students must be assessed before they are introduced to the e-learning environment because e-learning is relatively new compared to traditional learning methods and it will consequently take some time for students to adapt to it (Oh & Reeves, 2014).

Defined as the capability of prospective e-learning users to adopt a new learning environment and alternative technology, *e-learning readiness* should be sought to ensure that students will benefit from e-learning (Hashim & Tasir, 2014). Lukman and Krajnc (2012) identified five e-learning readiness factors that contribute to success in students' learning process.

### ***Commitment and Personal Involvement***

Although educational technology tools are delivered and used more frequently in person, it is important to note that the acquisition of skills and knowledge by users requires huge commitments (Borgmann, 1984). Users have to be motivated, self-reliant, and responsible (Westera, 2005). The success of learning with educational technology is based on the personal involvement of the user in the learning process (Lukman & Krajnc, 2012). Commitment to a new learning environment and personal involvement with educational technology are usual indicators of readiness for educational technology. Lukman and Krajnc (2012) stressed the importance of full commitment when nontraditional learning methods are used. The success of the individual learning process depends on group collaboration or personal involvement in the learning experience.

In terms of the design and development of technological artifacts, devices should be transparent to maximize user involvement (Borgmann, 1984). Users of technological devices should be given the opportunity to develop substantial involvement with these devices. To amplify the involvement of users, devices should also be adjustable to personal preferences (Westera, 2005). In contrast, insufficient chance to involve users with technological devices would cause indifferent consumption of technology-based tools (Westera, 2005).

### ***Motivation and Passion***

Apart from commitment and personal involvement, the success of e-learning also depends on the passion and motivation of users (Lukman & Krajnc, 2012; Westera, 2005). The importance of motivation, which drives

students to take learning actions, has been recognized in various classroom settings (Li, Lee, & Solomon, 2005). Clayton et al. (2010) showed that students who prefer less traditional learning environments are confident, motivated, and passionate in managing a non-traditional classroom setting.

Learners' motivation has been consistently linked to readiness for educational technology. For example, Galusha (1997) noted that knowledge about students' motivation to learn with educational technology may help educators determine which students are likely to participate in and benefit from online education. Similarly, Tallent-Runnels et al. (2006) asserted that understanding learners' motivation to learn with educational technology is the key to the effective instructional design of educational technologies. Xie and Ke (2011) as well as Xie (2013) found that students' motivation to learn with educational technology correlates significantly with their online discussion participation. Their findings imply that students with a high level of motivation demonstrate higher participation rates than those with a low level of motivation. Given an optimal level of readiness, educators should then provide students with sufficient practice to motivate them to engage in e-learning activities and thus enhance their confidence in utilizing technological learning tools (Chu & Tsai, 2009).

### **Availability**

Numerous studies have been carried out to identify factors that facilitate educational technology, particularly computers and integration in the classroom (Almekhlafi & Almeqdadi, 2010). The availability of educational technology is another important factor of educational technology readiness. On the one hand, learners can start their online course anywhere they are; on the other hand, they consider time availability as the major reason to support e-learning (Ajzen, 2002; Hung & Jeng, 2013; Murphy & Smark, 2006). In other words, they can review online course materials anytime they want. Educational technology is the combination of access and availability demands for higher education. Educational technology is well adopted within most public school systems because of the flexibility and remote access of the use of computing devices and software (Gray, Thomas, & Lewis, 2010).

The successful adoption of educational technology depends on issues related to technology readiness and other personal variables (Inan & Lowther, 2010; O'Neill, Scott, & Conboy, 2011; Song, Wang, & Liu, 2011; Thompson & Lynch, 2003). Anderson (2002), Bean (2003), Chapnick (2000), as well as Clark and Mayer

(2003) advised exercising caution when adopting e-learning for such organizations as universities. Educators should assess the readiness of their students for e-learning before adopting educational technology. Although technology prevails in the higher education environment, adopting the latest technology does not ensure learning unless instructors and students are fully prepared to use the educational technology (Hwang & Wolfe, 2010).

### **Technology Adoption in Higher Education**

Educational technology is commonplace in today's classrooms, and the demand for a technology-enhanced learning environment is projected to continue its substantial growth. Technology can transform higher education but not merely automate conventional teaching and learning methods in a face-to-face environment (Leidner & Jarvenpaa, 1995). Teaching processes can be developed with educational technology, as educational technology offers various collaborative and cooperative learning activities and changes the roles of students and instructors (Wu, Hiltz, & Bieber, 2010).

M. J. Jackson, Helms, and Jackson (2008), however, discovered that today's students still prefer traditional teaching approaches such as lectures, class discussion, and weekly outlines in their college courses despite being perceived as technologically savvy and as having the expectation of technology applications in their learning experience. Thus, understanding experiential learning is key for educational technological adoption to achieve the most desirable learning outcomes (Edelheim & Ueda, 2007). For example, highlighting the convenience (i.e., remote access) that technology offers can be considered beneficial to the coursework of students (Hwang & Wolfe, 2010; Jacques, Deale, & Grager, 2006). A brief discussion of technology commonly adopted in higher education follows.

### **Social Software**

Social software, such as Twitter, Facebook, and YouTube, which is used not only at home but also at school, represents how information and communication technology has pervaded every aspect of people's personal and social lives. Social software brings both opportunities and challenges to academe in informal settings (Pereira, Baranauskas, & da Silva, 2010).

### **Second Life**

A computer-based, simulated virtual environment learning tool called Second Life is also an educational technology instrument in hospitality and tourism programs. Students have positive perceptions of this online three-

dimensional modeling tool in terms of perceived usefulness, user friendliness, level of enjoyment, and user interest (Cheng & Wong, 2014; Singh & Lee, 2008).

### **Classroom Response System**

Classroom Response System, also known as *clicker*, is an educational technology tool that provides an instructor with information on how well students understand the concepts presented (Hwang & Wolfe, 2010). Using infrared radiation or radio frequencies, Classroom Response System measures students' understanding of class materials and allows them to respond to questions posed by the instructor in real time (Miller et al., 2012). Classroom Response System uses technology to provide instant feedback while engaging students, which agrees with several characteristics of Generation Y or Millennials (Hwang & Wolfe, 2010).

### **Mobile Learning**

El-Hussein and Cronje (2010, p. 20) defined *mobile learning* as "any type of learning that takes place in learning environments and spaces that take account of the mobility of technology, mobility of learners, and mobility of learning." The dramatic increase in the use of mobile technologies by the general population in recent years has caught educators' attention regarding the benefits of flexibility in learning (Hyman, Moser, & Segala, 2014; Johnson, Levine, Smith, & Stone, 2010; McIntyre, 2009). An enhanced learning process and increased student engagement are benefits of mobile learning, but the core benefit is the possibility of transforming the unproductive time of students into productive time (Litchfield, Dyson, Lawrence, & Smijweska, 2007). S. L. Smith and Walters (2012) stated that students who are given the chance to interact with course content on their mobile devices display significantly positive attitudes.

Based on this evidence, 25 hypotheses are proposed as follows:

**H1a:** Perceived remote access has a positive effect on commitment.

**H1b:** Perceived remote access has a positive effect on personal involvement.

**H1c:** Perceived remote access has a positive effect on motivation.

**H1d:** Perceived remote access has a positive effect on passion.

**H1e:** Perceived remote access has a positive effect on availability.

**H2a:** Perceived flexibility has a positive effect on commitment.

**H2b:** Perceived flexibility has a positive effect on personal involvement.

**H2c:** Perceived flexibility has a positive effect on motivation.

**H2d:** Perceived flexibility has a positive effect on passion.

**H2e:** Perceived flexibility has a positive effect on availability.

**H3a:** Perceived engagement has a positive effect on commitment.

**H3b:** Perceived engagement has a positive effect on personal involvement.

**H3c:** Perceived engagement has a positive effect on motivation.

**H3d:** Perceived engagement has a positive effect on passion.

**H3e:** Perceived engagement has a positive effect on availability.

**H4a:** Feeling of isolation has a negative effect on commitment.

**H4b:** Feeling of isolation has a negative effect on personal involvement.

**H4c:** Feeling of isolation has a negative effect on motivation.

**H4d:** Feeling of isolation has a negative effect on passion.

**H4e:** Feeling of isolation has a negative effect on availability.

**H5a:** Previous academic achievement has a negative effect on commitment.

**H5b:** Previous academic achievement has a negative effect on personal involvement.



- H5c:** Previous academic achievement has a negative effect on motivation.
- H5d:** Previous academic achievement has a negative effect on passion.
- H5e:** Previous academic achievement has a negative effect on availability.

## Methodology

A survey questionnaire was adopted to collect data from hospitality management students. The design of the questionnaire was based on the literature review. Prior to the survey, a pilot test that involved 24 undergraduate hospitality management students was conducted to confirm the relevance and clarity of the statements and ensure the reliability of the designed questionnaire. The results of the pilot test indicated no major concerns regarding the instrument. Also, to ensure the validity of the questionnaire, an experienced hospitality management professor went through the questionnaire and provided feedback. The questionnaire was then finalized after comments and suggestions from the students and the experienced hospitality management professor were taken into consideration.

The questionnaire was composed of three sections: (a) perceived attributes of educational technology; (b) readiness for educational technology; and (c) demographic details of the respondents. Based on the existing literature, this study included five items for perceived attributes of educational technology, namely, remote access, anytime availability, rich resources, more learner engagement, and flexibility. For readiness for educational technology, this study included five measurement items—commitment, personal involvement, motivation, passion, and availability—from the existing literature. A 5-point Likert scale (*strongly disagree* = 1, *strongly agree* = 5) was used to measure perceived attributes of and readiness for educational technology. For perceived attributes of educational technology, statements such as “Remote access impacts my learning” were provided. For readiness for educational technology, statements such as “Commitment makes myself competent when learning with educational technology” were given. Demographic items included gender, academic level, and previous academic achievement of the students. Academic level was measured as freshman = 1, sophomore = 2, junior = 3, or senior = 4; previous academic achievement was measured as community college graduate = 1 or high school graduate = 2.

The sample was recruited from undergraduate students studying in a hospitality management program at a public university on the West Coast of the United

States. The participants came from five courses whose instructors agreed to support this study. Open to all academic levels, including freshmen, sophomores, juniors, and seniors, the five courses from which participants came were Introduction to Hospitality Management, Rooms Division Management, Hotel Sales and Marketing Management, Hotel Operations, and Hotel Operations Management. The data were collected for 2 weeks in October 2014. Students completed the survey at the beginning of each class when a survey facilitator visited the class and administered the survey. A total of 261 responses were received from the 320 students in these five courses. After two incomplete responses were excluded, 259 useful responses accounted for an 80.94% response rate. Nonetheless, considering that cultural similarity and the pool of available subjects may have an impact on the unique manner of students that is not experienced in other locations, the findings of the present study may lack generalizability.

## Empirical Models

In total, there were five models, and each model was intended to identify how students' perceptions of different attributes of educational technology affect commitment, personal involvement, motivation, passion, and availability, respectively. Previous studies used commitment, personal involvement, motivation, passion, and availability to measure readiness for educational technology (Aragon et al., 2002; Pawan et al., 2003). Moreover, attributes such as remote access and flexibility can not only enhance students' personal involvement but also increase students' learning motivation (Chiang et al., 2014; Feinstein et al., 2005). In addition, they can enhance students' learning as well (Bradford et al., 2007). For example, students can have easy accessibility to their learning materials when they have Internet access. However, apart from the aforementioned attributes, engagement (e.g., increased attendance) is positively connected with personal involvement, whereas a feeling of isolation is perceived as a potential problem preventing students from being ready for educational technology (Costen, 2009; Eraqi et al., 2011). Hence, in order to evaluate the influence of remote access, flexibility, engagement, feeling of isolation, and previous academic achievement on commitment, personal involvement, motivation, passion, and availability, we proposed the following regression models:

### Model 1

$$\begin{aligned} \text{Commitment} = & \beta_0 + \beta_1 \text{ Remote access} + \beta_2 \\ & \text{Flexibility} + \beta_3 \text{ Engagement} + \beta_4 \text{ Feeling of isolation} \\ & + \beta_5 \text{ Previous academic achievement} + \varepsilon \end{aligned}$$

*Model 2*

Personal involvement =  $\beta_0 + \beta_1$  Remote access +  $\beta_2$  Flexibility +  $\beta_3$  Engagement +  $\beta_4$  Feeling of isolation +  $\beta_5$  Previous academic achievement +  $\epsilon$

*Model 3*

Motivation =  $\beta_0 + \beta_1$  Remote access +  $\beta_2$  Flexibility +  $\beta_3$  Engagement +  $\beta_4$  Feeling of isolation +  $\beta_5$  Previous academic achievement +  $\epsilon$

*Model 4*

Passion =  $\beta_0 + \beta_1$  Remote access +  $\beta_2$  Flexibility +  $\beta_3$  Engagement +  $\beta_4$  Feeling of isolation +  $\beta_5$  Previous academic achievement +  $\epsilon$

*Model 5*

Availability =  $\beta_0 + \beta_1$  Remote access +  $\beta_2$  Flexibility +  $\beta_3$  Engagement +  $\beta_4$  Feeling of isolation +  $\beta_5$  Previous academic achievement +  $\epsilon$

Remote access, flexibility, and engagement are common attributes of educational technology (Avci & Askar, 2012; Lukman & Krajnc, 2012; Majid, Yang, Lei, & Haoran, 2014), whereas a feeling of isolation is a common concern associated with educational technology (S. L. Smith & Walters, 2012). In these five linear regression models, commitment, personal involvement, motivation, passion, and availability were dependent variables and were measured by statements such as "Commitment makes myself competent when learning with educational technology." By contrast, remote access, flexibility, engagement, feeling of isolation, and previous academic achievement were independent variables that were hypothesized to be associated with dependent variables.

## Findings and Discussion

Of the 259 respondents, nearly 73% were females and nearly 27% were males. In terms of the academic level of the participants, lowerclassmen (i.e., freshmen and sophomores) and upperclassmen (i.e., juniors and seniors) were almost equally distributed. In terms of their previous academic achievement, fewer than 35% of the students joined the hospitality program through community college, whereas more than 65% of the students joined the program directly as high school graduates. Based on the demographic information, participants represented well the overall student profile of the hospitality program in which the survey was conducted.

## **Impacts of Perception of Educational Technology Attributes on Students' Readiness for Educational Technology**

### **Impact of Perception of Educational Technology Attributes on Commitment**

Table 1 shows the results of the Model 1 linear regression analysis. The assumption for independent errors is not violated (Durbin-Watson = 1.988). The analysis shows a good model fit ( $F = 20.781$ ,  $R^2 = .291$ ,  $p < .01$ ), and homoscedasticity is confirmed. The value (1/tolerance) of the variance inflation factor (VIF) serves as a check for multicollinearity for each independent variable. Tolerance indicates the percentage of variance in the predictor that cannot be accounted for by other predictors. Thus, very small values represent the fact that a predictor is redundant and should not be included in the model. That is to say, values that are less than 0.1 may need further investigation. In other words, a variable whose VIF value is greater than 10 may require further examination (Neter, Kutner, Nachtsheim, & Wasserman, 1996). VIF values computed for independent variables in Model 1 show that remote access, flexibility, engagement, feeling of isolation, and previous academic achievement are 1.731, 1.874, 1.327, 1.008, and 1.026, respectively, indicating that the VIF values are quite acceptable and have low levels of multicollinearity. The findings of this study reveal that the students' perceptions of remote access, flexibility, and engagement as relevant attributes of educational technology increase their commitment to educational technology, whereas their perceptions of isolation as a relevant attribute of educational technology and academic achievement decrease their commitment to educational technology. Hence, Hypotheses 1a, 2a, 3a, 4a, and 5a are supported by the data.

The negative influence of feeling of isolation on commitment resonates with existing research. Lashley and Rowson (2005) showed that a feeling of isolation results in low educational technology commitment, whereas sense of belonging results in high educational

**Table 1.** Model coefficients for commitment.

Variable	Coefficient	SE	p	Variance Inflation Factor
Constant	2.569	0.332	.001	
Remote Access	0.140	0.065	.045	1.731
Flexibility	0.198	0.074	.007	1.874
Engagement	0.256	0.052	.001	1.327
Feeling of Isolation	-0.113	0.042	.035	1.008
Previous Academic Achievement	-0.154	0.083	.005	1.026

technology commitment. Costen (2009) also found that the easy communication of a virtual communication platform makes students feel connected with one another and consequently less isolated.

### **Impact of Perception of Educational Technology Attributes on Personal Involvement**

Table 2 presents the results of the Model 2 linear regression analysis. The assumption for independent errors is not violated ( $Durbin-Watson = 2.096$ ). The analysis indicates a good model fit ( $F = 14.350$ ,  $R^2 = .221$ ,  $p < .01$ ), and the variables are normally distributed. VIF values computed for independent variables in Model 2 also show that they are quite acceptable and have low levels of multicollinearity. The findings of this study show that the level of perception of flexibility and engagement as relevant attributes of educational technology positively affects personal involvement, whereas the level of perception of isolation as a relevant attribute of educational technology negatively affects personal involvement. Although the level of perception of remote access as a relevant attribute of educational technology is positively related to commitment, it has no relationship with personal involvement. Previous academic achievement does not influence personal involvement either. Hence, Hypotheses 2b, 3b, and 4b are supported by the data, whereas Hypotheses 1b and 5b are rejected.

The positive influence of flexibility and engagement on personal involvement was also suggested in Costen's (2009) study. That is, a flexible collaborative technology learning environment has the potential to actively enhance or deepen both classroom learning and students' own learning. Similarly, the more students are engaged in educational technology, the more involvement the students will show.

Conversely, a feeling of isolation negatively affects personal involvement. This result is similar to previous findings. In other words, the stronger students' sense of belonging, the greater personal involvement students show in learning. Costen (2009) identified the fact that e-learning environment can facilitate discussion not only inside but also outside of class.

**Table 2.** Model coefficients for personal involvement.

Variable	Coefficient	SE	p	Variance Inflation Factor
Constant	2.459	0.0372	.001	
Remote Access	0.053	0.073	.469	1.731
Flexibility	0.231	0.083	.003	1.874
Engagement	0.248	0.058	.001	1.327
Feeling of Isolation	-0.114	0.047	.041	1.008
Previous Academic Achievement	-0.066	0.093	.242	1.026

### **Impact of Perception of Educational Technology Attributes on Motivation**

Table 3 shows the results of the Model 3 linear regression analysis. The assumption for independent errors is not violated ( $Durbin-Watson = 2.124$ ). The analysis indicates a good model fit ( $F = 12.889$ ,  $R^2 = .203$ ,  $p < .01$ ), and the variables are normally distributed. Similarly, VIF values computed for independent variables in Model 3 reveal that independent variables have low levels of multicollinearity and are acceptable. The findings of this study show that the level of perception of engagement as a relevant attribute of educational technology positively impacts motivation, whereas the levels of perception of feeling of isolation and previous academic achievement as relevant attributes of educational technology negatively impact motivation. By contrast, no relationships are detected between how remote access and flexibility are perceived as attributes of educational technology and how motivated participants are to use educational technology. Thus, Hypotheses 3c, 4c, and 5c are supported by the data, whereas Hypotheses 1c and 2c are rejected.

Although the level of perception of flexibility as a relevant attribute of educational technology has a positive influence on commitment and personal involvement, no significant influence is found on motivation. Similar to its influence on personal involvement, the level of perception of remote access as a relevant attribute of educational technology shows no significant influence on motivation. However, the level of perception of engagement as a relevant attribute positively affects motivation. Engagement in the classroom via an electronic response system can stimulate student participation and class attendance (Hwang & Wolfe, 2010; Kennedy & Cutts, 2005).

A previous study revealed that a feeling of isolation is a concern when adopting e-learning (S. L. Smith & Walters, 2012). The present study confirms that a stronger feeling of isolation corresponds to lower motivation among students. Similarly, previous academic achievement has a negative influence on motivation. In other words, students with a higher education background are less motivated than their counterparts to

**Table 3.** Model coefficients for motivation.

Variable	Coefficient	SE	p	Variance Inflation Factor
Constant	3.077	0.384	.001	
Remote Access	0.100	0.076	.175	1.731
Flexibility	0.120	0.085	.118	1.874
Engagement	0.238	0.060	.001	1.327
Feeling of Isolation	-0.139	0.048	.014	1.008
Previous Academic Achievement	-0.164	0.096	.004	1.026

use educational technology. This result can be explained by the extent to which students have been exposed to educational technology. Students who joined the university from community colleges had already been exposed to educational technology for 1 or 2 years more than those who joined directly from high schools. Thus, educational technology at the university might not be attractive or new enough to those from community colleges.

#### **Impact of Perception of Educational Technology Attributes on Passion**

Table 4 reveals the results of the Model 4 linear regression analysis. The assumption for independent errors is not violated (*Durbin-Watson* = 2.124). The analysis indicates a good model fit ( $F = 16.794$ ,  $R^2 = .246$ ,  $p < .01$ ), and the variables are normally distributed. VIF values computed for independent variables in Model 4 indicate that they are acceptable because they have low levels of multicollinearity. The findings of this study show that the levels of perception of flexibility and engagement as relevant attributes of educational technology positively affect passion for utilizing educational technology, whereas previous academic achievement negatively impacts passion. Alternatively, remote access and feeling of isolation show no influence on passion. Thus, Hypotheses 2d, 3d, and 5d are supported by the data, whereas Hypotheses 1d and 4d are rejected.

The findings from this study suggest that some educational technology attributes, particularly flexibility and engagement, can strengthen students' passion for learning via technology. In terms of previous academic achievement, a similar finding to that for motivation was shown. That is, higher previous academic achievement corresponds to less passionate students.

#### **Impact of Perception of Educational Technology Attributes on Availability**

Table 5 shows the results of the Model 5 linear regression analysis. The assumption for independent errors is not violated (*Durbin-Watson* = 1.747). The analysis identifies a good model fit ( $F = 13.183$ ,  $R^2 = .207$ ,  $p < .01$ ), and the variables are normally distributed. Also, VIF values

**Table 5.** Model coefficients for availability.

Variable	Coefficient	SE	<i>p</i>	Variance Inflation Factor
Constant	2.590	0.401	.001	
Remote Access	0.088	0.079	.233	1.731
Flexibility	0.248	0.089	.001	1.874
Engagement	0.148	0.063	.023	1.327
Feeling of Isolation	-0.108	0.050	.055	1.008
Previous Academic Achievement	-0.138	0.100	.016	1.026

computed for the independent variables in Model 5 illustrate that they have low levels of multicollinearity and are acceptable. The findings almost exactly match the impacts of educational technology attributes on passion. Hence, Hypotheses 2e, 3e, and 4e are supported by the data, whereas Hypotheses 1e and 5e are rejected.

#### **Conclusions, Limitations, and Future Research**

The trend of the widespread application of educational technology in hospitality and tourism courses has been obvious in recent years (Setzer & Lewis, 2005). However, the successful application of educational technology relies on a balance between the educational technology offered and the readiness of students for educational technology. Only when these two parts are matched together can the overall learning of students be enhanced.

This study contributes to the limited literature on the perceived attributes of educational technology (i.e., remote access, flexibility, engagement, feeling of isolation, and academic achievement) and readiness for educational technology. In summary, Hypotheses 1a–5a, 2b–4b, 3c–5c, 2d, 3d, 5d, and 2e–4e are supported by the data. By contrast, Hypotheses 1b, 5b, 1c, 2c, 1d, 4d, 1e, and 5e are rejected. To be specific, the findings from Model 1 suggest that educational technologies such as mobile learning and e-learning must be diversified and expanded to satisfy the needs of Generation Y students. In a study by Lashley and Rowson (2005), the common attributes of e-mail and Web access in educational technology were remote access and flexibility, and that of virtual communication was engagement. Thus, educational technology needs to include remote access and provide flexibility. Moreover, a virtual discussion board is recommended to increase the engagement of students. In this way, students will feel tightly connected, which will further enhance their educational technology commitment. Conversely, seminars and workshops can be introduced to high school students during the holidays to increase their commitment.

Model 2 indicated that, given its important role in ensuring students' involvement in learning via educational technology, flexibility can be improved through

**Table 4.** Model coefficients for passion.

Variable	Coefficient	SE	<i>p</i>	Variance Inflation Factor
Constant	2.338	0.401	.001	
Remote Access	0.030	0.079	.679	1.731
Flexibility	0.160	0.089	.033	1.874
Engagement	0.347	0.063	.001	1.327
Feeling of Isolation	-0.076	0.050	.164	1.008
Previous Academic Achievement	-0.120	0.100	.031	1.026

information sharing, such as the use of e-learning or drop box sharing in different courses. In addition, improving the efficiency of virtual communication (e.g., instant feedback) is necessary to increase the engagement of students, which contributes significantly to personal involvement. Constant communications via educational technology are also required to reduce the feeling of isolation and to increase personal involvement.

Model 3 demonstrated that Generation Y students can be motivated to learn with educational technology if strategies to reduce the feeling of isolation and encourage student engagement are considered. For example, electronic response systems would stimulate students to participate in learning activities because of their instant feedback functionality (Hwang & Wolfe, 2010).

Previous studies revealed that educational technologies such as the Blackboard system and learning management systems have the potential to develop interactive learning and enhance the performance of students (P. A. Jackson, 2007; LaPointe & Reisetter, 2008). Therefore, the findings of Model 4 provide some enlightenment that effective methods that can increase the flexibility of educational technology and enhance the engagement of students can be sought to promote learning with educational technology. For example, LaPointe and Reisetter (2008) identified the fact that online educational technology that includes the attributes of flexibility, such as learning management systems (e.g., e-learning), may contribute to the interactive learning of students.

Finally, yet important to note, is that Model 5 showed that both flexibility and engagement positively impact availability (i.e., time) in learning with educational technology. Bradford et al. (2007) found that online educational technologies such as Blackboard, e-learning, and online lecture notes increase availability because of their flexibility, quick feedback (e.g., instant feedback for quizzes), and improved communication (e.g., virtual discussion). The results of this study also show that engagement positively connects with availability. By contrast, remote access and feeling of isolation have no influence on availability. Based on this evidence, we conclude that diversified existing online educational technologies (e.g., e-learning) may increase flexibility to a greater extent.

In summary, the findings show that the level of perception of remote access as a relevant attribute of educational technology has a positive influence on commitment but no influence on personal involvement, passion, motivation, or availability. The level of perception of flexibility as a relevant attribute has a positive impact on commitment, personal involvement, passion, and availability but not on motivation. The

level of perception of engagement as a relevant attribute has a positive influence on all five dimensions mentioned previously. Nevertheless, feeling of isolation has a negative influence on commitment, personal commitment, and motivation. By the same token, previous academic achievement has a negative impact on commitment, motivation, passion, and availability but not on personal involvement.

Although the existing literature suggests that remote learning can overcome constraints such as distance and availability (Colwell, Scanlon, & Cooper, 2002), the present study found that the level of perception of remote learning as a relevant attribute has no impact on personal involvement, passion/motivation, or availability. In other words, remote access may not promote students' involvement in, passion/motivation for, and availability in learning with educational technology. By contrast, levels of perception of flexibility and engagement as relevant attributes can contribute to students' involvement and passion/motivation and availability to a great extent. Implementing learning management systems like Blackboard would reduce feelings of isolation and encourage virtual discussion with constant feedback (P. A. Jackson, 2007; K. H. Lee & Kim, 2014). Considering that previous academic achievement has a negative association with commitment, motivation, passion, and availability, we recommend more introduction and demonstration of educational technology to students as a way to stimulate their interest.

The present study has several limitations. This study only collected data from one institution, which may limit the generalizability of the results because of the similar culture within a university. Moreover, we only recruited participants from among students enrolled in certain courses as opposed to all courses offered at the university. Moreover, this study took an exploratory approach to testing the relationship between general preference for educational technology and readiness for educational technology. Thus, this study stands on somewhat limited theoretical underpinnings. Future studies are expected to increase the sample size of students enrolled in diverse courses in different universities. Furthermore, because different types of educational technologies may have different impacts on students' readiness, future studies can further categorize educational technology applications (e.g., computer software, mobile apps, social media platforms) apart from the general preference for educational technology examined by the present study and examine their relationships with readiness for educational technology. Comparison studies on the application of

and preference for educational technology in different countries or regions are also valuable.

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