

## ONLINE TUTORIAL (I-LEARN) USAGE AND STUDENTS' PERFORMANCE: AN EMPIRICAL EVIDENCE IN MALAYSIAN UNIVERSITY

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### ABSTRACT

*This paper is attempts to determine the relationship between online tutorial usage and students' performance in Malaysian university context. This study was conducted at Universiti Teknologi MARA (UiTM) which 150 undergraduates participated in this survey. The study focuses only on the using I-LEARN and concerntrate only on the understanding how to apply the learning styles effectively. The results provide insights on how the students could adopt on using I-LEARN and could improve the understanding of learning using interactive online tutorials. This study is perhaps one of the first to address the I-Learn adoption for students to investigate their influences on learning performance.*  
*Keywords – Online tutorial, I-Learn, university, students' performance, Malaysia*

### INTRODUCTION

The integration of online tutorial based courses has become popular. Constructivists believe learners actively construct their own interpretation of messages, thereby leaving learners in control (Berge, 1998; Rovai, Ponton and Baker, 2008). Jonassen, Peck and Wilson (1999) point out that constructivist learning environments can include technology-based environments in which participants may engage in meaningful and useful activities. Several multimedia tools can be used to create interactive instructional material that includes more than static text and graphics (Birch and Sankey, 2008; Deal, 2002). The use of interactive multimedia can make learning more pleasant and offers learners a chance to explore and construct their own knowledge actively (Moreno and Mayer, 2007). Online interactive multimedia resources can provide students with rich, interactive learning environments that appeal to different learning styles (Birch and Sankey, 2008).

Thus, our study was motivated by our observation of the online tutorial usage in University especially for UiTM students which is ( I-Learn ) that will lead to faster learning and more effective if the students applied in the good ways. Besides that, the current trends of using Internet to interact with people make us want to observe more and study about online tutorial usage (I- Learn) and student's performance. Issues such as, ease of use, interactivity, privacy and usage of online tutorial (I-Learn) have raised the question of whether universities have been on the right track in terms of student's performance.

The current study contemplates on the online tutorial since there have been no attempts to relate all the possible factors (e.g. ease of use, interactive, privacy and usage in online tutorial) to investigate their influences on students' performance, which demonstrate a significant gap of knowledge. There have been no studies that investigate I-Learn at Universiti Teknologi Mara (UiTM). All these gaps have added to the significance for such a study to be carried out. To fill these gaps, this study examines the perceptions of I-Learn usage by UiTM students. If I-Learn usage is found to have significant relationship with improve performance students, recommendations will made on how the UiTM students could use I-Learn in order to achieve good performance. Consequently, students do not rather make use of the online tutorial (I-Learn) for completing their assignments. Also, there is one more possibility that the students may perhaps satisfy after using the internet and keep on using it orderly to carry out their next assignments. Yet, if they do not satisfy, so therefore, they may refuse to use the online tutorial (I-Learn). In this case, the students may find other substitutes, for instance, referring to printed materials (i.e. text books, journals, newspapers, etc.) in the library rather than collecting data or information from the online tutorial (I-Learn).

## **REVIEW OF LITERATURE**

### **Usage of online tutorial**

According to Mitchell, Chen and Macredie (2005), the use of online tutorials seem to have a positive effect on learning and the overall improvement on the students' level of understanding of materials. Some individuals may learn better when they can control the pace of presentations (Mayer, 2006). Although many multimedia software applications have been utilized in developing interactive multimedia tutorials as online supplements, each type of multimedia application offers a unique benefit to users. Many libraries have embraced the advantages of web-based tutorials such as the ability to offer instruction on an as-needed basis, the removal of the limitations of the one shot session, and the ability to offer instruction anywhere, any time to both local and distance or off-campus users (Dewald, 1999). Works of gurus such as Jakob Nielsen (1993, 2000a, 2000b), and Steve Krug (2000) provide detailed information on the definition, goals, rationale, and methodologies of usability assessment. The concept of usability has been in existence since the 1980s (Head, 1999). Furthermore, in an article by MacDonald et al. (2001), it was noted that the best web-based learning programs should be "interactive, engaging, easy to use, responsive to learners' experiences, and satisfying".

### **Ease of use of online tutorial**

Jakob (1993) defines a usable interface as one which is: easy to learn, efficient to use, easy to remember, causes few errors; and pleasant to use. The concept of usability has been in existence since the 1980s (Head, 1999). It has its roots in usability engineering, where HCI or human-computer interaction examines how users interact with computer technology and looks at ways of making this interaction effective. Testing was initially applied to software applications and computer interfaces but in time it was recognized that the same concepts could be applied in testing web design including library web sites (Battleson et. al., 2001). Web usability testing is typically carried out with the goal of establishing where users become frustrated and where the major trouble spots lie. It should be remembered that usability is multi-faceted and evaluation sets out to determine users' experience of the effectiveness of many aspects of a web site including navigation, labeling, layout, look and feel, language, and accessibility (Gore and Hirsh, 2003). Much has been written about ways to conduct formal usability testing, which consists of observing and recording users carrying out specific requested tasks. A low tech approach to designing and administering testing is acceptable as long as questions and the process are well designed. Some fundamental guidelines relating to the preparation and execution of formal usability testing are: decide what to test and then design scenarios which will require the user to perform tasks you want to test; write a script for administering the test to ensure consistency; ask the testers to think aloud as they work through the tasks; have a moderator/facilitator who asks questions and a recorder who transcribes what is observed; identify individuals to act as testers who are representative of your target user population; offer some kind of incentive for testers; make sure you have a quiet place to do the testing; record the test results as soon after the test as possible; and, finally, analyze the test results and recommend redesigns to correct problems identified (Dickstein and Mills, 2000). While people often equate usability assessment with this type of formal usability testing there are, in fact, other methods of measuring usability. Alternate approaches include inquiry and inspection (Battleson *et al.*, 2001). The inquiry method is typically designed to gather information on users' experiences and preferences, and methods may include focus groups, interviews, surveys, self-reporting logs, and journaled sessions. The inspection method usually involves heuristic evaluation and cognitive walk-throughs and does not involve users. No matter what method is used, it should be part of a continual or iterative process of assessment and improvement (Head, 1999). Usability testing does not need to be an expensive, time-consuming process. Meaningful and accurate results can be obtained with very few users. Nielsen (2000b) says as few as five is sufficient, while Krug (2000) maintains that as few as three or four users suffice, since the first few users are likely to encounter all of the most significant problems.

### **Interactive of online tutorial**

Nonetheless, the social dimension of learning in online courses or Internet-based instruction has received little attention. Many educators advocating distance learning believe that interactivity is a vital element in the educational process (e.g., Moore, 1991, 1992, 1993; Moore and Kearsley, 1995; Muirhead, 1999;

Parker, 1999; Saba and Shearer, 1994; Spitzer, 2001; Zirkin and Sumler, 1995). This can be done through the interactive multimedia features built into the content's instruction and cultivated between user and PC (Agnew, Kellerman and Meyer, 1996). Such interactions make the learning process interactive, responsive and active. Here the learning that takes place is active and would involve the learner's participation and involvement. The characteristics of such interactive multimedia applications allow learners to be part of the learning process, experiencing control over the content, initiate search, making selections and manipulate the acquisition process. Hence, multimedia places a high degree of responsibility into the hands of the users to drive the learning process. Numerous articles cite the importance of integrating interactivity and active learning exercises into online library instruction tutorials in order to fully engage students (Dewald, 1999a; Tricarico et al., 2001; Donaldson, 1999; Dewald et al., 2000; Hrycaj, 2005; Durrington et al., 2006). Tutorials focusing on the search mechanics of a particular index or catalog have not generally taken advantage of creative design, or provided a fun, game-like atmosphere conducive to enjoyment, a key factor that enhances learning for students of all ages. Furthermore, in an article by MacDonald et al. (2001), it was noted that the best web-based learning programs should be "interactive, engaging, easy to use, responsive to learners' experiences, and satisfying"

### **Privacy of online tutorial**

Privacy can be defined as:

"The individual's right to determine his or her own communication contacts and the right to control the use of personal information by others. Additionally it should be made technically and economically feasible for the individual and for commercial organizations to control and protect their own private data to an extent that they determine themselves and, as importantly, with measures selected at their own discretion." (Gattike, 2004).

Students today are more familiar working and using online, but as seen in Aberson et al. (2003), students also seem to be quite comfortable learning within online environments, again highlighting the importance of online tutorials in the teaching arena. Teaching usually involves two distinct activities that teachers need to perform. First they need to be partners for students that coach them. Second, they have to grade students and grades are often decisive for the student's future. While privacy can be important during coaching, establishing the true identity is required to reliably grade student contributions. Using online tutorial (I-Learn) privacy it will be privacy, because students will communicate directly with lectures at any problem, time and any place. The message that sending to lecturer will not appear to others if students change the setting to privacy and they will communicate through online tutorial (I-LEARN) without any distracted from others person. Even though privacy and confidentiality of communication are essential to teaching and learning, little effort has been taken to analyze and address privacy requirements in e-learning.

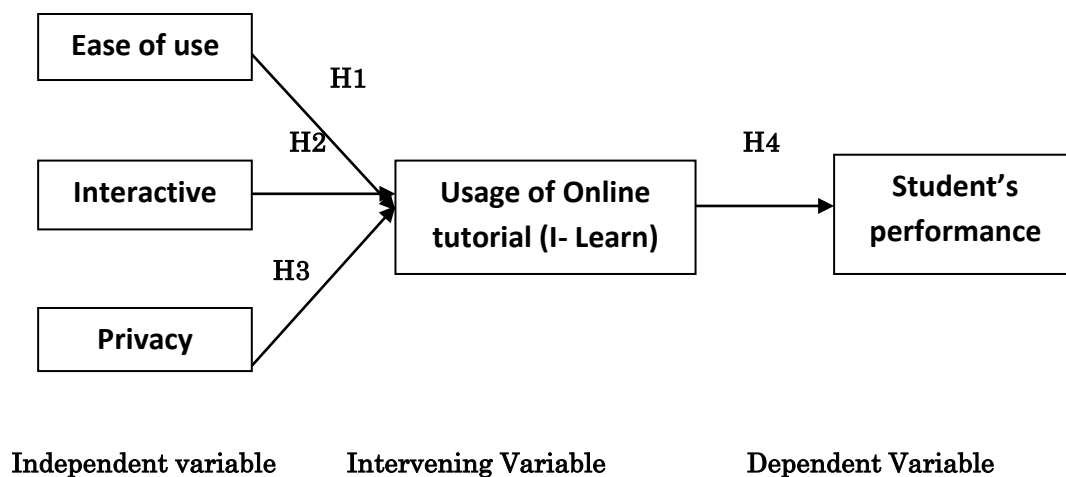
### **Students' performance**

Many studies have related student performance to various aspects of education such as the quality of a school, quality of teaching, teacher remuneration, and class size and student gender, to mention several widely used factors. The main problem in relating these aspects is that the non-measurable outputs may be as important as the measurable ones. There are also some concerns about the fact that students are taught by more than one teacher, making it difficult to link the performance of a particular student to a particular teacher (Kingdon and Teal, 2002). Studies stated that teachers are the most important influence on student progress, even more important than socioeconomic status and school location (Archer, 1999 and Armentano, 2003) that found that teacher qualifications are more important than class size. Student performance in online versus campus-based courses has been the subject of an increasing number of studies. The relevant literature has employed a student's grade as an indicator of course performance (Brecht and Ogilby, 2008; Buche, Davis, and Vician, 2007; Caspi and Gorsky, 2006; Chyung, 2007; Hiltz and Wellman, 1997; Irani, Telg, Scherler, and Harrington, 2003; Kock, Verville, and Garza, 2007; Loomis, 2000; Manochehri, and Young, 2006; McLaren, 2004; Newlin, Lavooy, and Wang, 2005; Puzziferro, 2008; Rabe-Hemp, Woollen, and Humiston, 2009; Syler, Cegielski, Oswald, and Rainer, 2006). Interestingly, among the studies comparing final course grade differences between online and

campus-based students, many have not found the difference to be statistically significant (Benson, Johnson, Taylor, Treat, Shinkareva, and Duncan, 2005; Hiltz and Wellman, 1997; Kock et al., 2007; Manocheri, and Young, 2006; McLaren, 2004; Newlin, et al., 2005; Rabe-Hemp et al., 2009). Notwithstanding this fact, the course final grade is still an important reference in the literature. Kock et al. (2007) conducted an experiment with an introduction to information systems (IS) course that was taught both online and on-campus. Their experiment was longitudinal, including assessments in the midterm point and at the end of the semester. Their instrument included both quantitative measures as indicated by test results and qualitative measures where students answered open-ended questions. The quantitative results showed online students were performing at a significantly lower level than their face-to-face counterparts in the midterm, but the results of the final exams did not show statistically significant differences. The qualitative comparison, which measured the level of ambiguity, cognitive effort, and excitement in the two types of courses, did not reveal any significant differences. Hence, based on these grounds, the theoretical framework us shown in figure 1.

### Theoretical Framework and Hypotheses

Figure 1 : Theoretical Framework



- H1 : Ease of use has relationship with usage of online tutorial  
H2 : Interactive has a relationship with usage of usage of online tutorial  
H3 : Privacy has a relationship with usage of online tutorial  
H4 : Usage of online tutorial has a relationship with students performance

### RESEARCH METHODOLOGY

#### The sample

The sample of this study comprised are UiTM students within in Shah Alam, namely :

- Student Faculty Business Management
- Retail student
- Marketing student
- Economic student
- Islamic Banking student
- Finance student

#### The instrument

The survey questionnaire used in this study contained two sections, shown in the Appendix. The first section ( A ) contained five questions capturing the respondents' demographic information such as gender, age,faculty, courses and part/ semester. The second section ( B ) comprised five items on ease of use online tutorial (e.g.Gore and Hirsh, 2003), four items on interactive on tutorial (Agnew, Kellerman

and Meyer, 1996), five items on privacy online tutorial user Gattike, 2004), five items on usage of online tutorials (e.g. Mitchell, Chen and Macredie (2005) and five items measuring the students' performance of UiTM Shah Alam students (Archer, 1999 and Armentano, 2003). All items in sections B were measured using a seven-point Likert scale ranging from 1 very strongly disagree to 7 very strongly agree. The use of multiple-choice questions allows respondents to answer the questions with ease and their responses to be easily tabulated. Prior to the dissemination of the final questionnaires, a pilot study was conducted to check the appropriateness, readability, and comprehensiveness of the survey instrument in the Malaysian University context. About 20 questionnaires were distributed to business students. The majority of them indicated that the questions were easily understood and that the questionnaires required only 10-15 minutes to complete. Only minor amendments were made to the questionnaire based on the feedback received.

### Sample characteristics

Table 1 shows the demographic profiles of the respondents surveyed. The majority of them are female (66.7 percent). Most of them between the age cohorts of 22-24 years old, mostly retail management (54 percent) in faculty of business management (100 percent). Majority all from Part 5 (72.7 percent).

Table 1: Demographic profiles of respondents

Gender	Percentage
Male	33.3
Female	66.7
<b>Age</b>	
19 – 21	11.3
22 – 24	69.3
25 – 27	15.3
28 and above	4.0
<b>Courses</b>	
Retail Management	54.0
Finance	22.7
Islamic Banking	7.3
Marketing	4.7
Economics	3.3
Insurance	4.0
Entrepreneur	4.0

## FINDINGS

### Assessing reliability

In determining the reliability of the instrument, a general rule is that the indicators should have a Cronbach's alpha of 0.60 or more (Nunnally, 1978). With the range of Alpha scores between 0.691 and 0.815 obtained in this study (shown in Table III), we can conclude that the questionnaire is reliable and the data can be applied for the analysis (Tzu and Yin, 2005). Table III also shows the mean and standard deviation scores of the variables. Despite a high standard deviation, the results show that the respondents agree that the ease of use could make them pleasant to use. The results also indicate that there is a relationship between usage of online tutorial and student performance. The respondents have made learning fun with mean 5.28. The results also provide indications that the respondents more concentrate on study. Table 2 further indicates that the students believed that the online tutorial make their become working independently and improved their academic performance.

Table 2: Internal consistency of the constructs

Construct/scale	Mean	SD	Cronbach's a
<b><i>Ease of use</i></b>			0.792
Easy to find course-related information	5.0733	0.97689	
Easy to communicate with the lecturer	4.7333	0.96702	
Easy to communicate with other students	4.8867	1.31862	
Comfortable to complete course assignments	4.8067	1.07252	
Efficient in using the online tutorial	4.9800	0.88591	
<b><i>Interactive</i></b>			0.737
Encourage dialogue amongst student s	5.1733	1.00165	
Benefits from more interaction online	5.3067	0.73225	
Made learnign fun	5.2800	1.15346	
Made me want to learn the content	4.9733	1.39003	
<b><i>Privacy</i></b>			0.691
Makes more concerntrate to study	4.9067	0.95078	
Communicate with the lecturer personally	5.0133	1.05542	
Interact with other students that I don't know	4.7000	1.09759	
Comfortable to ask anything	4.7133	0.97854	
More confident in using online tutorial	4.9333	1.29877	
<b><i>Usage</i></b>			0.815
Well structured and well organize	4.8533	1.13153	
Benefit from more training	5.1867	0.87766	
Make me pleasant to use	5.0200	1.05213	
The lecturers simulated my inteest	4.4400	1.14388	
Difficult to get motivated to work	4.3933	0.92611	
<b><i>Students performance</i></b>			0.805
Well to the academic demands of university	4.8400	0.86761	
Easy to undestand the rationale for the content	5.0400	0.93321	
Easy to manage own time	5.0467	0.93648	
Good at working independently	5.1067	1.09389	
Felt pressurized by assignments	5.4867	1.25177	

## RESULTS

Table 3 shows the results with respect to the four hypotheses constructed. The analysis indicates, H1 is accepted (p value <, 0.001). It is ease of use on usage of online tutorial , H2 (p value <, 0.001) which is interactive of online tutorial accepted by students in UITM Shah .Similarly, H3 is accepted privacy on usage of online tutorial (p value <0.001). Lastly, H4 is also accepted with (p value < , 0.001) means usage of online tutorial are accepted in students performance.

Table 3: Correlation among the constructs

	Ease	Interactive	Privacy	Usage	Students perfomance
Ease	1	0.782**	0.252**	0.681**	- 0.129
Interactive	0.782**	1	0.394**	0.699**	- 0.98
Privacy	0.252**	0.394**	1	0.483**	- 0.184*
Usage	0.681**	0.699**	0.483**	1	- 0.218**
S.Performance	- 0.129	-0.098	-0.184*	-0.218**	1

Notes: \*Correlation is significant at the 0.05 level; \*\*correlation is significant at the 0.01 level

Table 4: Hypotheses Results

Hypotheses	Causal Relationships	Factor	$\beta$	Sig.	Result
H1 : Ease of use	→	usage of online tutorial	0.681	*	Supported
H2 : Interactive	→	usage of online tutorial	0.699	*	Supported
H3 : Privacy	→	usage of online tutorial	0.483	*	Supported
H4 : Usage of online tutorial	→	students performance	- 0.218	*	Supported

Notes:  $\beta$  Standard error,  $\alpha = 0.05$ , \* <0.001, Sig. = Statistical significance of the test

## DISCUSSION

The mean scores also reflect this where the students scored above average mean for attributes measuring the student's performance, easy of use, interactive, privacy of online tutorial, and usage of online tutorial. These findings suggest that in order to attain improvements in the students' performance, the university has to consider the suitable between the efficient in using the online tutorial and the usage of online tutorial. When there is efficient, this would create a good usage on online tutorial for student perform their studies. This study found significant relationship between the interactive and usage of online tutorial. In other words, the interactive does make students more attract to using online tutorial. This may indicate that interactive functionality online tutorial, students will using the online tutorial. The findings, however, show that the interactive is more powerful than usage of online tutorial (p value of the interaction < 0.00) This indicates that interactive is a primary factor that leads to usage of online tutorial.

## CONCLUSION AND RECOMMENDATIONS

Based on the survey findings, it can conclude that interactive is the strongest variable and perhaps with this finding, the university administrator concentrate more on the concept of interactive online tutorial. The reason is, most of the students may use the systems if it is interactive. With suitable gadgets as well as nice dashboard, the students' will be attracted with I-Learn and continuously use it. Hence, it will help student to improve their CGPA in every semester. Another taught is that every student can create their page based on their interest and differently from other students or they can put pictures info, colourful graphic and other interesting things. So, they will feel like their page of student portal like their own blog. Thus, this will make students more attractive to use online tutorial (I-Learn). Secondly, there is a need to upgrade the I-Learn system to seem like other communication medium such as Facebook, Twitter and etc. For instance, the systems could add an open chat, private chat, message, as well as picture upload. Lastly in terms of privacy, not only privacy between students and lecturers but also, to build other site that student can communicate among them and do group discussion with or without lecturer's.

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