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E-Learning Satisfaction: A Perspective on UiTM E-PJJ Students

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ABSTRACT

E-PJJ is a form of e-learning system that offers working adults to engage in UiTM's distance learning programme. The system provides the students access to the course materials and lecture notes as well as to the interaction among students, and between students and the lecturers. The purpose of this study was to identify student's satisfaction toward e-learning programme offered by Institute of Neo Education (iNED). A survey questionnaire was administered among the respondents who are undergraduates in the e-PJJ degree programmes, iNED at UiTM Shah Alam. This research examined the relationship of delivery method, content, communication facilities and system operations towards the level of student's satisfaction. The findings showed a positive relationship between delivery methods, content, communication facilities, also system operations and student's satisfaction. In addition, delivery method scored a moderate positive relationship towards student's satisfaction. This study might be very useful for the institution that offer similar programme, namely distance learning that requires ICT to distribute knowledge, to teach and learn. All the shortcomings in the distance learning would be resolved for better education and service quality for future students.

Keywords: *e-learning, distance learning, E-PJJ, student's satisfaction, higher education.*

INTRODUCTION

The service sector has gained much importance today as it becomes the primary driver for the country's economic growth. It is increasingly contributing to the Growth Domestic Product (GDP) evident in the developed countries. There are many service sub-sectors identified by the government, among which are health and social services, tourism services, transport services, business services and computer related services, telecommunication, healthcare, professional services, environmental services, distributive trade services, courier services and education services. For education, its sub-sector is the higher education or tertiary education, either in campus or off-campus.

Nowadays, with the government's incentives and employer's demand, working adults are looking forward to pursuing their study to improve their knowledge, and as a part of their career development. The so-called e-learning provides them such opportunity; where students get to interact with the educators via an education system that fully utilised the use of ICT. To make the e-learning system meaningful, the institute must ensure that all facilities and features are functioning well. It must be easily accessible, is well-designed for learner-centeredness, affordable, efficient, flexible and has facilitated learning environment (Khan, 2003).

To minimise the constraints faced by working adults, a lot of institutions are now offering this method of learning. However, universities need to evaluate their services from time to time as to ensure that the concept of distance learning is being adapted successfully. In the case of UiTM, to fulfil the needs and demands of the working adults for quality tertiary education, they have established an external Education Centre in 1990. This centre is later known as the Institute of NEO Education (iNED) University Teknologi MARA. Offering distance learning programmes, iNED provides e-PJJ programme for working adults. This programme is highly dependent on the use of ICT in bringing education to students. Among the institute's

objectives is to provide quality learning and teaching experience through the use of technology. Thus, the research is to study the level of students' satisfaction on the iNED service quality for the e-PJJ programme.

LITERATURE REVIEW

This section elaborates on four variables related to the concept of e-learning - the delivery method, the content, the communication facilitation, and the system operations in e-learning. These variables are then put together to create the conceptual framework of the study so as to understand students' requirement in the e-learning environment affecting their satisfaction level.

E-Learning

Education includes the process of facilitating students' learning. Nowadays, with the advancement of technology, university starts to offer digital education and learning to people. Working adults would usually prefer this way of learning due to its flexibility (Baldwin-Evans, 2004).

E-learning which is also known as distance learning or online learning has become more acceptable today particularly in the use of ICT to deliver education. It is most common to working adults who pursue their study due to employment demands. In 2004, the market value of e-learning in Europe was close to US$4.7 billion as compared to the global corporate e-learning market assessment by International Data Corporation (IDC) which was estimated to be US$30 billion for the same period (Watson & Ahmed, 2004; Sawai, 2006).

Apparently, e-learning is the way to disseminate information and knowledge either formal or informal which involves interactive activities, processes, and learning community. The medium of communication used can be of web-based system that applies Internet or intranet or extranet, CD-ROM, DVD, TV, mobile phones and pen drive etc. (Husnayati *et al.*, 2009).

The e-PJJ is a programme created to provide an education to working adults that primarily use ICT in the delivery of study content. It is designed to align with the government initiative in encouraging the use of IT in every aspect of life including education. Web-based education is applied to provide the course content, instruction and interactive communication between students and educators (Rhee *et al*., 2006).

Delivery Method in e-Learning

Delivery method in e-learning is considered as the presentation of materials or course contents by the educators or lecturers. Within the electronic system boundaries, those materials inclusive of topics of the course covered for each of the subjects are attached into the system for students' or learners' references. The presentation is either via video, audio or written notes, and are provided in the system that is considered as the 'virtual classroom' by educators. The quality of delivery method used may include clear and simple but comprehensive notes. Most importantly, it is easy to understand, not using jargons and the structure of statement is not too complex.

The presentation of the material must be creative, innovative, interactive and dynamic but not neglecting the purpose of learning. If there is no enhancement made on the delivery method, the worrying fact is that the next generation will find it old-fashioned and an outdated mode of learning (Kratochvíl, 2013).

The e-learning delivery method encourages the educators to create new and innovative ways of delivering and transferring knowledge. In fact, e-learning system itself remains a principal motivating factor due to its flexibility. However, it is not sufficient to only have a flexible learning environment but also to have an attractive presentation of content (Macgregor & Turner, 2009). Therefore, e-learning can be more effective than the conventional techniques which require students or learners to physically attend the class to learn.

Content in e-Learning

Content refers to the course contents (Sawai, 2006) prepared by the educators for learners. It includes the guidance, text, notes, past examination papers, assessment and exercises related to the topic of the subjects. Most importantly for e-learning, the educators must provide pedagogical direction and disciplinary content to the learners (Ireland *et al.*, 2009).

A valuable learning resource is to be created by the educators or academicians to improve the effectiveness of e-learning (Gregg, 2007). For example, to cater to the demands of learners for more knowledge, the academicians need to provide different types of learning resources such as journals, slides presentation, point form notes, mind map etc.

Communication Facilitation in e-Learning

Ireland *et al*. (2009) explain in their literature the need to have a good student's interaction and engagement. It refers to the communication between lecturers and students, and among peers in an online environment. Students are given the opportunities to interact in two-ways of three-ways communications via online peer's communities. The communication can be carried out via forum, group chat or messengers. It promotes fruitful discussion among the abovementioned parties to obtain opinion, ideas, factual information and resources.

In distance learning, majority of the population are adult learners because its main purpose is to encourage more working adult to pursue study even though in their hectic working life. Thus, to design an e-learning environment, it is important for the educators and learners to be participative, interactive and supportive to obtain maximum satisfaction (Kim *et al*., 2012).

Smith (2004) states that to communicate in distance learning, the students and educators are always concerned on the availability and accessibility. This is with regards to the responsiveness of educators as they must be prompt on the students' queries and concerns. If it is not possible to be done promptly, it is expected that all the queries to be replied as soon as possible.

System Operations in e-Learning

There are several elements to be considered in using the system for e-learning experience such as content (Graff, 2006), interaction tools (Chou, 2003), feedback (Husnayati Hussin, 2009), interface design (Siragusa, 2000) and students' involvement (Husnayati Hussin, 2009). The system needs to be aligned with the e-learning purposes and to consider all the aforementioned elements.

In Rhee *et al*. (2006), it is stated that the system operations must consider a lot of things to attain satisfaction of students. Interface consistency, interactivity and usability are the components affecting the satisfaction of the users. In e-learning, to identify the quality of those components, it is best for students to first have a good understanding of the system functionality.

Major highlights in existing literature were on theories such as TAM (Davis *et al*., 1989), IS continuance model (Bhattacherjee, 2001), Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh e*t al*., 2003). Based on previous research factors that led to satisfaction were perceived usefulness and perceived ease-of-use. The research done by Mohd Faiz Hilmi *et al*. (2012) found that the ease-of-use is an important motivation factor on distance learners' behaviour. It leads to perception and followed by satisfaction. The distance learner perceived ease-of-use is reflected in the information gathering process.

Customers' Satisfaction

Based on Stauss *et al*. (1997), customer satisfaction and dissatisfaction are related to the emotions towards the service provider, expectations of service perceived from the service provider, and a behavioural intention in the sense of to be loyal with the service provider he/she experienced or to move to another service provider.

Service quality and customers' satisfaction have a strong relationship,

based on Sureshchandar *et al*. (2002). However, studies conducted by Abas Said *et al*. (2009) and Norudin Mansor and Che Hamdan (2010), had produced conflicting results.

According to Harrison (1991), there are three ways to measure satisfaction, namely, via audit, complaint data, and surveys done after the customers have received the service as generally practiced in the tourism and hotel, education and health industries. These measures would be taken into consideration to improve services in meeting customers' satisfaction.

Kang *et al.* (2007) mentioned in their research that the service delivery which fulfill all requirements and preferences of customer, apart from applying all components of service quality at the same time, have a high possibility to influence customers' satisfaction. Meanwhile, in education, customers' or students' satisfaction are measured based on the improvement of capabilities in solving issues.

Conceptual Framework
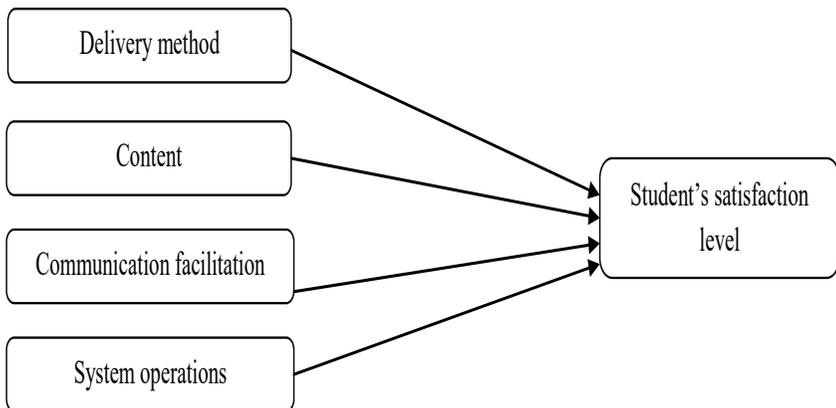
Figure 1: Conceptual Framework
Source: Sawai Siritongthaworn Donyaprueth Krairit, 2006

HYPOTHESES

i)   There is a significant relationship between delivery method and student's satisfaction.

ii)   There is a significant relationship between content and students' satisfaction.

iii)   There is a significant relationship between communication facilitation and students' satisfaction.

iv)   There is a significant relationship between system operations and students' satisfaction.

METHODOLOGY

This research adopts a cross-sectional design to measure the relationship between delivery method, content, communication facilitation, system operations provided by iNED for e-PJJ programme and students' satisfaction level. The researchers choose to use questionnaire to measure the services provided by the staff of iNED for the e-PJJ programme. The questionnaire has been developed as below:

•   Section A: Demographic profiles are the questions asked in this section. They are gender, age, marital status and occupation.

•   Section B: This section has five (5) divisions. They are students' satisfaction, delivery method, content provided, communication facilitation and system operation provided by INED for e-PJJ programme.

To measure and examine all the variables identified in this research, the researcher had used the five (5) Likert-scales. Data were collected currently enrolled in the system. The sample size, *n* will be determined by using Krejcie and Morgan's (1970) Sample Size Table based on the total population. Thus, sample size derived from the table was 353. It focus on undergraduates for Bachelor Degree in e-PJJ programme at iNED, UiTM

Shah Alam as it has the highest numbers of students.

The target population in this study are the undergraduates for Bachelor Degree in e-PJJ programme at iNED, UiTM Shah Alam. The researchers applied both purposive and convenience sampling to obtain the data.

RESULTS AND DISCUSSION

Based on Table 1, most of the students who pursue their study in the e-PJJ programme at UiTM Shah Alam were between 26-30 years old (n=263, 74.5%). It is followed by 21-35 years old (n=56, 15.9%) age group, 36-40 years old (n=32, 9.1%) and 36-40 years (n=2, 0.6%). Table 1.2 also illustrates that, majority of the students who pursue their study in e-PJJ programme at UiTM Shah Alam, are single (n=264, 74.8%). This is followed by the married (n=81, 22.9%) and widowed/divorced (n=8, 2.3%) groups.

Table 1: Respondent's Profile

Respondent's profile		
	Frequency	**Percent**
Gender:		
Male	129	36.5%
Female	224	63.5%
Age:		
21-25 years old	56	15.9%
26-30 years old	263	74.5%
31-35 years old	32	9.1%
36-40 years old	2	0.6
Marital Status:		
Single	264	74.5%
Married	81	22.9%
Widow/ Divorced	8	2.3%
Occupation:		
Business owner	20	5.7%
Freelancer	*41*	*11.6%*
Government servant	53	15.0%

Private staff	192	54.4%
Unemployed	47	13.3%

Majority of the population are from the private sector (n=192, 54.4%), followed by government servants (n=53, 15.0%), unemployed (n=47, 3.31%), freelancers (n=41, 11.6%), and business owners (n=20, 5.7%).

Table 2: Variables Mean

Variables	No. of items	Mean
Independent variable		
Delivery method	5	4.0221
Content	5	3.8091
Communication facilitation	5	3.8108
System operations	7	3.9417

Table 2 shows the mean for the factors that could lead to the level of students' satisfaction to the services provided by iNED for e-PJJ programme. Delivery method shows the highest mean value, which is 4.0221, followed by System Operations (Mean value=3.9417), Content (Mean value=3.8091, Communication Facilitation (Mean value=3.8108) and Content (Mean value=3.8091). Thus, the findings of this study show that the most influential factors that leads to the students' satisfaction towards iNED services is delivery method.

Table 3: Reliability Statistics

Variables	No of items	Cronbach's Alpha (α)	Acceptability
Dependent variable			
Students' s atisfaction	7	.828	Accepted
Independent variables			
Delivery method	5	.848	Accepted
Content	5	.858	Accepted
Communication facilitation	5	.840	Accepted

System operations	7	.881	Accepted

Next, Table 3 shows the reliability test result for the five (5) variables. The Cronbach's alpha (α) value for the dependent variable; students' satisfaction is (α=.828), which meet the value accepted based on Nunnally (1978).

The reliability test results show that the Cronbach's alpha (α) value for delivery method is (α=.848), content (α=.858), communication facilities (α=.840) and system operation (α=881) accordingly. Therefore, the researchers conclude that the reliability for all independent variables, which are delivery method, content, communication facilities and system operation could be accepted. This is due to the fact that the value of Cronbach's alpha (α) is greater than 0.7.

Table 4: Normality Test

Items	N	Skewness	Kurtosis	Decision
Dependent variable				
Students' satisfaction	353	-.362	.821	Normal
Independent variables				
Delivery method	353	-1.991	4.886	Normal
Content	353	-1.473	2.637	Normal
Communication facilitation	353	-1.480	2.971	Normal
System operation	353	-1.837	5.283	Normal
Valid N (listwise)	353			

Table 4, it shows the normality test result. For the dependent variable, which is students' satisfaction, the values of skewness and kurtosis, are (skewness=-.362, kurtosis=.821). For the independent variables, the value of skewness and kurtosis for each is - delivery method (skewness= -1.991, kurtosis=4.886), content (skewness=-1.473, kurtosis=2.637), verbal communication facilities (skewness= -1.480, kurtosis=2.971) and system

operation (skewness=-1.837, kurtosis=5.283). The researchers, thus, conclude that all variables are normally distributed as the skewness and kurtosis values shown are between the range of +/-3 and +/-10 respectively.

To demonstrate the linear relationship of the two sets of data, researchers are to use either Pearson or Spearman correlations. The researchers have to decide as to whether to use Pearson or Spearman based on the normality test done earlier. In this research study, Pearson correlation was chosen due to the normal distribution for all variables identified.

According to Franzblau (1958), there are five (5) categories of significant level of correlations. It is explained in the Table 5 below:

Table 5: Correlation Coefficient

Categories	*p*-value
Negligible	.00-0.20
Low	.20-0.40
Moderate	.40-0.60
Marked	.60-0.80
High	.80-1.00

Table 6: Pearson Correlation

Construct variables	Students' satisfaction	Delivery method	Content	Communication facilitation	System operations
Dependent variables					
Students' satisfaction	-				
Independent variables					
Delivery methods	.584**	-			
Content	.494**	.544**	-		
Communication facilities	.469 **	.544**	.576**	-	
System operations	.550**	.658**	.601**	.712**	-

*** Correlation is significant at the 0.01 level (1-tailed)*

Table 6 above shows the *r*-value (*r*) for the dependent and independent variables. All independent variables indicate a moderate positive relationship towards students' satisfaction. Firstly, is to explain the *r*-value of delivery method towards level of students' satisfaction, (*r*= .584). It indicates that the delivery method of the lecturers gives impact to the students' satisfaction. If the lecturers did not perform well in delivering the lessons, the students' satisfaction will be low.

On the other hand, r-value for content is (*r*= .494), which means that it is of moderate positive relationship towards level of students' satisfaction. It indicates that the course content gives moderate impact to the students' satisfaction. If the course content is not comprehensive, it might affect the satisfaction of the students.

Similarly, *r*-value for communication facilitation is (*r*= .469), giving the same meaning as content. It means that there is a moderate relationship between communication facilitation and students' satisfaction. Thus, the communication facilitation given to students might also impact students' satisfaction.

Lastly, the *r*-value for system operation is (*r*=.550). The value is almost the same as delivery method. There is a moderate relationship between system operations and students' satisfaction. The system operations hence affects students' satisfaction.

Hypotheses Result

H1: There is a significant correlation relationship between delivery method and level of students' satisfaction.

The analysis result of Pearson Correlations for delivery method and level of students' satisfaction shows a moderate positive relationship between these two variables. Since significant value is (*p*<.000) and *r*-value is (*r*=.584), the hypotheses mentioned above is accepted as delivery method is associated to level of students' satisfaction.

H2: There is a significant correlation relationship between content and level of students' satisfaction.

The analysis result of Pearson Correlations for content and level of students' satisfaction shows a moderate positive relationship between these two variables. Since significance value is ($p < .000$) and r-value is ($r = .494$), the hypotheses mentioned above is accepted because content is associated to the level of students' satisfaction.

H3: There is a significant correlation relationship between communication facilitation and level of students' satisfaction

The analysis result of Pearson Correlations for communication facilitation and level of students' satisfaction shows a moderate positive relationship between these two variables. Since value of $p = .000$ and $r = .469$, the hypotheses mentioned above is accepted because communication facilities is associated to level of students' satisfaction.

H4: There is a significant correlation relationship between system operation and level of students' satisfaction

The analysis result of Pearson Correlations for system operation and level of students' satisfaction shows the moderate positive relationship between these two variables. Since value of $p = .000$ and $r = .550$, the hypotheses mentioned above is accepted because system operation is associated to level of students' satisfaction.

Among the four (4) factors leading to students' satisfaction, namely delivery method, content, communication facilitation and system operation, delivery method contributes the most to students' satisfaction towards iNED service provision. This is due to the fact that Pearson Correlations for delivery method and level of students' satisfaction shows the highest r-value among others. Even though all variables shows moderate relationship towards the level of students' satisfaction, the delivery method and system operation however show r-value as ($r = .584$ and $r = .550$) respectively.

CONCLUSION

Analysis on the several variables related to customers' satisfaction suggests that customers' satisfaction depends on the delivery method, content, communication facilitation and system operations of e-learning. Thus, institutions may find this very useful and valuable to them as it provides guidelines on delivering the best performance to their customers - the students. These variables, may concern and impact several groups of people such as the educators, the decision makers of educational institution, administrators, lecturers and students.

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