



AAOU 2019

Proceedings

The 33rd Annual Conference of the Asian Association of Open Universities

OPEN DISTANCE LEARNING: 2020 AND BEYOND

Hosted by
Virtual University of Pakistan

14-16 October 2019
Pearl Continental Hotel Lahore, Pakistan



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TESTING INFORMATION AND SYSTEM QUALITY, AND SERVICE QUALITY OF ONLINE TUTORS: THE INSTRUMENT FOR IMPROVING STUDENT SATISFACTION IN ONLINE TUTORIALS

Andi Suci Anita, Nurliani Atjo, Murtiadi Awaluddin, Heriyanni Mashithoh, Andi Sylvana

Abstract

Universitas Terbuka (Open University) or UT designs online tutorials made available in a web-based platform via the Internet to optimize learning experience and foster academic growth. As student satisfaction is key to quality assurance, improving its user satisfaction is a priority for UT. This has made it necessary for an instrument to evaluate the satisfaction of online-tutorial users in terms of its qualities of system, information and tutors. This study aims to examine this instrument in which evidence regarding system, information and tutor variables associated with student satisfaction is discussed. To this end, 100 student respondents attending online tutorials in 2018.2 are engaged in a survey research from which data is drawn. The qualities of system, information and tutors are found to fit into high-degree categories, indicating favorable reviews from the respondents. All variables show positive and significant effects (both partial and simultaneous) on student satisfaction, particularly tutor service qualities, which tend to show the strongest relationship with student satisfaction. This pattern of empirical relationship reveals that the degree of system, information and tutor service qualities defines that of student satisfaction in online tutorial. Settling on a scheme that attests to consistency in these qualities and addresses areas for improvement is therefore prerequisite for academic and institutional milestone, most particularly in the area of tutor service.

Keywords: system quality, information quality, personnel service, and student satisfaction

Introduction

The activities at Universitas Terbuka (UT) lie on the provision of high-access, world-quality education for all segments of society through the implementation of various programs of Open Distance Education (ODE) to produce graduates with high competitive edge. To that end, UT is constantly making tremendous efforts in every field of its operational activities, most notably in terms of its qualities that define educational products and most importantly its qualities of student services. One of service qualities offered by UT is online tutorial which becomes an alternative to conventional face-to-face tutorials for students who are connected to Internet network so that they can access online tutorial irrespective of their geographical locations.

In an ideal setting of online tutorial, online tutors serve as resource persons and facilitators for students. Tutors are required to provide feedback on students' questions and opinions in a discussion forum. Tutors need to evaluate task assignments and provide contributory feedback on those assignments. At the end of online tutorials, tutors will assess what individual students are able to demonstrate and accomplish. Online tutorial consists of 8 initiation materials and 3 assignments as well as a discussion forum that facilitates question-answer sessions with tutors and peers. The provision and sustainability of a discussion forum rely on system quality, information quality and service quality provided by the administrators in charge of online tutorial. In other words, tutors' success in accomplishing their roles in online tutorials is influenced by the qualities of internal services offered by UT.

A wide array of issues may emerge and affect the implementation of online tutorials, i.e., unclear scheduling pattern, slow-loading website, unavailable information about tutorial meetings, and untimely student grade submission due to issues related to website under construction. These can affect how online tutorial works to a great extent and how students perceive it. In light of these issues, a study of qualities of internal services should become a major research attention worth investigating.

Internal Marketing (IM) is a relatively new approach adopted by firms to enhance the quality of product and service in order to achieve desirable rates of performance. This approach is instrumental for service firms including higher education institutions to provide a multitude of benefits in organizational success because it is more integrated and sustainable than other approaches (Lupyoadi, 2001). In addition, the concept of Service Profit Chain also claims that the qualities of internal services have a vital influence on the process of delivering services and assuring consumer satisfaction. This concept sets the direction of this study which aims to measure the effect of system quality, information quality and tutor services on student satisfaction in online tutorial.

Literature review and hypothesis development

2.1. System quality.

Davis et al. (1989) defines system quality as perceived ease of use that measures the extent to which computer technology is perceived easy to understand and operate. The quality of information system reflects that when information system users feel that adopting and using the system is easy, users do not require numerous effort to use it and save much more time to do other task activities, which in turn enhances their overall performance. The results of wide- ranging studies by DeLone and McLean (1992), McKinney et al. (2002), Rai et al. (2002), McGill et al. (2003), Almutairi and Subramanian (2005), and Livari (2005) show that the quality of information system has a positive effect on user satisfaction.

2.2. Information quality.

Information quality is a product of information that has characteristics and attributes. It can also be defined as a quality that makes information more meaningful. According to Abdul Kadir (2010), information quality is sometimes used to convey appropriate information. Therefore, information quality is measured in terms of its relevance and timeliness.

James O'Brien (2005) breaks down the dimensions of information quality, i.e., timeliness, currency, frequency, and time period. Information quality has long been associated with system use, user satisfaction and net profit (DeLone and McLean, 1992, 2003). Kotler, et al. (2004) in Tjiptono (2006) explain that as an information media, a website needs to have an attractive appearance as a barometer for visitors and potential consumers to assess whether it has met the standards of good performance. Turban and Gehrke (2000) explain that in online business, good quality of web content contains information that may attract potential consumers. When it is on the contrary, consumers are likely to walk away and switch to competitors.

2.3. Services of contact personnel.

Contact personnel constitutes each individual who are in charge of service delivery and has direct contact with consumers. Nguyen and Leblanc (2002) explain that contact personnel is made up by the entire employees who stand at the front line of an organization and get access to direct contact with customers. As high-contact service provides, the roles of contact personnel in online tutorial activities are a crucial part of service. This confirms the conception developed by Lovelock and Wright (2002) that "In high-contact services, service personnel is central to service delivery." Furthermore, Lovelock and Wright (2002) state that "In the eyes of their customers, service personnel may also be seen as an integral part of the service experience."

Factors that affect contact personnel, according to Nguyen and Leblanc (2002), include: appearance, competence, and professionalism. Appearance is a combination of dressing, hairstyle, make-up and cleanliness. Competence is driven by skills and experiences. The entire set of attitudes and actions among employees, which is also affected by how they dress themselves, affects consumer perception and the success of real-time services. Shamdasani and Balakrishnan (2000) adopt the indicators that measure contact personnel, i.e., skill, similarity, knowledge, hospitality and mutual disclosure. Quick access to services is vital to service delivery systems. Each attribute of service is determined by customer evaluation on the timeliness and accuracy of employees to respond to complaints. High commitment to human resources can settle on appropriate business. Personnel who serves as a service provider in a service organization should be fully aware that they are in charge of marketing and service agent, who ultimately contribute to organizational success in the long run.

Hypothesis Development

In accordance with the wide-ranging literature on quality system, information system and personnel service in relation to user satisfaction, a number of hypotheses are proposed.

H1: Quality system has a positive and significant effect on student satisfaction in online tutorial. H2: Information system has a positive and significant effect on student satisfaction in online tutorial.

H3: Contact personnel service has a positive and significant effect on student satisfaction in online tutorial.

Research method

3.1 Research Design

This study is design as an explanatory research that seeks to examine hypotheses by explaining a given

phenomenon based on scientific observation processes. This study deals with three independent variables, i.e., system quality, information quality and tutor service quality. The dependent variable is student satisfaction with online tutorial.

3.2 Participants

Data collection uses a cross-sectional method. The population of the study includes the entire online tutors, and the target population is online tutors who participate in online tutorial at Faculty of Economy of Universitas Terbuka 2018.2. Accidental sampling is used to collect the information of interest, and questionnaires are distributed online. Data is acquired from 100 respondents.

3.3 Instrument

Data collection uses questionnaires as the instrument of the study on a 5-point Likert scale, with

1 denoting “highly disagree” and 5 denoting “highly agree”. The variables alongside their indicators are as follows: System Quality (X1) is measured by the indicators:

1. Online tutorial website provides easy access for students to interact with online tutors.
2. Online tutorial sustains student activities.
3. The features of online tutorial application fit the needs of students in the implementation of online tutorial.

Information Quality (X2) is measured by these indicators:

1. Time Dimension,
2. Content Dimension
3. Form Dimension

Contact Personnel (X3) is measured by these indicators:

1. Online tutors are able to provide in-depth solutions for students regarding learning materials.
2. Online tutors are always flexible when it comes to addressing student questions.
3. Online tutors always handle student questions with hospitality.
4. Online tutors always provide feedback on students' issues and challenges.

3.4 Data Analysis.

The analysis begins with instrument development which is measured using validity and reliability test to avoid errors that may affect the accuracy of data collected. Then, multiple linear regression is run to acquire the result of model testing, the effect between variables and the dominance in variables.

In terms of validity test, an item is a valid measure only to the extent that it scores above 0.40 at a significance level of 95% within a group of items representative of the content of the measurable trait. In terms of reliability test, Cronbach's alpha, coefficient and item-total correlation are applied to measure whether each variable is reliable. The resulting score of each variable stands above 0.60, which generates reliable variables and indicates internal consistency. To establish the effect between variables, p-value must score $\leq 0,05$ to ensure significant effect of the independent variables on the dependent variable at a confidence level of 95% and a maximum deviation level of 5%.

Results

4.1 Validity and Reliability

The result of validity and reliability test is given in Table 1 below.

Table 1. Validity and Reliability Output.

Variable	Indicator		Validity	Cronbach's Alpha	Reliable
	min	max			
x1	0.901	0.938	Valid	0.870	Reliable
x2	0.354	0.84	Valid	0.765	Reliable

x3	0.839	0.923	Valid	0.837	Reliable
Y	0.317	0.895	Valid	0.765	Reliable

Source: SPSS Output 2019

Data in Table 1 show that the overall minimum values of validity stand above 0.2, at an alpha above 0.6, indicating an appropriate measurement of the instrument for the study.

4.2. Frequency Distribution

The results of frequency distribution of respondents' answers regarding system quality, information quality, contact personnel service and student satisfaction of online tutorial are presented in Table 2.

Table 2. Recapitulation of Students' Responses
Variabel * Jwb_Resp Crosstabulation

Count

	Respondent Answer			Total
	Low	Moderate	High	
Variable x1	3	6	91	100
x2	0	14	86	100
x3	0	18	82	100
Y	0	18	82	100
Total	3	56	341	400

Source: SPSS Output 2019

Data in Table 2 shows that the majority of respondents demonstrate high perception of information quality, system quality and contact personnel

service. It can be concluded that the information quality, system quality and contact personnel service developed by Universitas Terbuka are in appropriate conditions. The same perception applies in student satisfaction with online tutorial.

4.3. Multiple Regression Analysis

To look at whether independent variables affect dependent variable, a multiple regression test is run and recapitulated as

Table 3 below shows.

Independent Variable	Dependent Variable	T	Sig t
System quality (x1)	Student satisfaction (Y)	4.096	.014
Information quality (x2)		12.137	.000
Contact personnel service (x3)		5.201	.000
R ²			.922
Adjusted R ²			.919
F			376.5
Sig F			.000

Source: SPSS Output SPSS 2017

The output in Table 4 can be interpreted as follows:

1. R² of 0.92 or 92% is the simultaneous effect size of system quality, information quality and contact personnel service on student satisfaction. The remaining 8% is explained by other factors not included in the model.
2. F_{cal} of 376.5 with an alpha of 0.00 (less than 0.05) indicates that system quality, information quality and contact personnel service have a simultaneous, positive and significant effect on student satisfaction with online tutorial.
3. T_{cal} of 4.096 at an alpha of 0.014 indicates that system quality has a positive and significant effect on student satisfaction assuming that other factors that can increase and decrease system quality remain constant. Accordingly, hypothesis 1, that there is a positive and significant effect of system quality on student satisfaction, is accepted.
4. T_{cal} of 12.137 at an alpha of 0.000 indicates that information quality has a positive and significant effect on student satisfaction assuming that other factors that can increase and decrease information quality remain constant. Accordingly, hypothesis 2, that there is a positive and significant effect of information quality on student satisfaction, is accepted. According to James O'Brien in his book called "System Analysis and Design Method", there are 3 dimensions of information quality, i.e., time dimension, content dimension and form dimension. Time dimension associates with when information is presented. Content dimension focuses on the presentable content of information. Form dimension measures how information is presented.
5. T_{cal} of 5.201 at an alpha of 0.00 indicates that contact personnel service has a positive and significant effect on student satisfaction assuming that other factors that can increase and decrease contact personnel service remain constant. Accordingly, hypothesis 2, that there is a positive and significant effect of information quality on student satisfaction, is accepted.

An appropriate information system embodies a user-oriented system, indicating that though the development is technically acceptable, a system will encounter failure of system application when it is not supported by users. User satisfaction with information system defines a circumstance where an individual's expectation of an information system meets the outcome he or she can obtain. Satisfaction refers to a condition where users feel satisfied after using a certain system because of the integrated ease of use (Insap Santoso, 2009).

Information quality shows the output of information system associated with the value, benefit and relevance of the information as a result of the perceptions of system users. Users who expect benefits of information quality can affect their satisfaction with the use of information system (Dody Radityo and Zulaikha, 2007).

The quality of information system indicates that if users of information system perceive ease of use, they do not require much effort to understand how to operate it, thus allowing them to save time to work on other tasks and enabling them to improve their overall performance. This is corroborated by the results of prior studies by Delone and McLean (1992), McKinney et al. (2002), Rai et al. (2002), McGill et al. (2003), Almutairi and Subramanian (2005), and Livari (2005).

Contact personnel represents all human resources in charge of service delivery and have direct contact with consumer. Nguyen and Leblanc (2002) explain that contact personnel comprises the entire frontline employees of an organization and deals directly with customers. As high contact service, the roles of contact personnel in online tutorial activities is a crucial part of service. This supports the definition developed by Lovelock and Wright (2002) that "In high-contact services, service personnel is central to service delivery." Furthermore, Lovelock and Wright (2002) state that "In the eyes of their customers, service personnel may also be seen as an integral part of the service experience."

Conclusion

The conclusions of the study are as follows:

1. The variables of system quality, information quality and contact personnel service have a simultaneous, positive and significant effect on student satisfaction with online tutorial. This indicates that when system quality, information quality and contact personnel service increase, so does student satisfaction with online tutorials.
2. The variable of system quality has a positive and significant effect on student satisfaction with online tutorial. The rate of system quality of online tutorial will influence the rate of student satisfaction. Therefore, to obtain student satisfaction on a sustainable manner, system quality needs to be retained and enhanced when necessary.
3. The variable of information quality has a positive and significant effect on student satisfaction with online tutorial. When information quality is poorly perceived, the rate of student satisfaction with online tutorial does not meet the expectation of Universitas Terbuka. It is therefore crucial to enhance student satisfaction with online tutorial through the sustainable development of information quality.
4. The variable of contact personnel service has a positive and significant effect on student satisfaction with online tutorial. This indicates that contact personnel service quantifies the degree to which consumers are satisfied with the service. Therefore, on-going efforts of making contact personnel service sustainable on a desirable level is vital to retain student satisfaction with online tutorial.

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