

THE IMPACT OF ONLINE LEARNING QUALITY SERVICE ON STUDENTS ONLINE LEARNING SATISFACTION

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Abstract

The current research aims to examine the impact of online learning service quality on student online learning satisfaction. The participants were determined through the purposive sampling method. A total of 158 university students participated in the current research. The participants were given questionnaires related to online learning quality service and student online learning satisfaction. The data gathered will then be analyzed in the statistical package for social science (SPSS), employing several analyses, namely descriptive analysis, Pearson correlation coefficient, and multiple regression analysis. The descriptive analysis concludes that the level of online learning service quality and students' satisfaction in online learning settings were very high. The Pearson correlation indicates a strong and significant correlation between online learning quality service and student online learning satisfaction. The result of the multiple regression analysis emphasized the significant impact of the online learning quality service on student online learning satisfaction, where three dimensions of online learning quality service significantly contributed to student online learning satisfaction, namely internet self-efficacy, technology quality, and convenient usage. This research contributed to proving the impact of online learning quality service on student online learning satisfaction. This research also predicts several aspects of online learning service quality that significantly affect students online learning satisfaction.

Keywords: Online Learning, Online Learning Service Quality, Students Online Learning Satisfaction.

INTRODUCTION

According to Singh and Thurman (2019), the term online learning was first emerged in 1995 and currently has varieties of terms, namely e-learning, blended learning, online education, online courses, etc. Even varieties of terms emerged; online learning was defined as the process of learning instruction delivered through digital devices in order to support the learning process (Ferri et al., 2020). Dhawan (2020) defined online learning as learning experiences in synchronous or asynchronous environments using different devices with internet access. Assaraira et al. (2022) defined online learning as a learning situation where the students learn using information and communication technology that is based on a digitally integrated environment. Online learning, which utilizes the development of technology, allows teachers to deliver instruction, share resources, and facilitate student collaboration and interaction through an online system (Barrot et al., 2021). In this case, online learning means for higher

education to become more responsive regarding the demand and development of technology (Andrade et al., 2020). Yusuf and Ahmad (2020) stated that the utilization of technology in online learning helps facilitate interaction and communication between the teacher and students.

Currently, the online learning mode in schools and universities has become more familiar after the spread of the COVID-19 pandemic (Khalil et al., 2020). Clark et al. (2020) stated that through the emergent COVID-19 pandemic, an unprecedented scale of classes switched to online learning modes. It is because the government and school try to prevent the spread of the disease by completely closing the school and academic facilities (Oyedotun, 2020). In this situation, online learning is stated to be one of the solutions for the school to keep the students on track with their learning process (Bansak and Starr, 2021). Therefore, many educational institutions have shifted their learning process to online learning. Andrade et al. (2019) reported that the enrollment in online learning in public institutions is steadily growing, which currently represents 73% of university students. It was emphasized with the data given by UNESCO that 300 million students around the world face disrupted school activities and school closures (Purwanto, 2020). Other than that, Landrum et al. (2020) revealed that enrolment in online learning is steadily increasing, and the number of students who have not participated in online learning has steadily decreased. Therefore, conducting research on online learning in any aspect is necessary.

Since the expanding popularity of online learning among universities, ensuring the quality of online learning is necessary. Andrade et al. (2019) stated that online learning should ensure the implementation of quality assurance in order to ensure the effectiveness of the teaching and learning process. It is because several learning conceptions do not match in online learning, such as learning by doing, which produces high learning quality, and human-generated feedback and involvement in learning evaluation are essential to enhance the learning experiences (Wang et al., 2021). The importance of quality assurance in online learning was emphasized by research that reports restrictions and challenges in online learning activities. For example, in terms of course delivery problems, students attendance, technological literacy and competency, quality learning experiences, mental health, finances, interaction, and mobility (Oyedotun, 2020; Barrot et al., 2021). Yusuf and Ahmad (2020) reported problems faced by students in online learning, namely less focus, the online learning platform was not satisfactory, limited online learning resources, internet access problems, and student attendance. Since many problems appear in online learning, the management should consider the quality of the learning to ensure the students receive quality learning activities.

In any educational setting, student satisfaction is one of the considerations that should be emphasized, especially in online learning. It is because the sudden shift of learning to online learning mode influenced the students satisfaction (Almusharraf & Khahro, 2020). In this case, there are mixed responses given by students regarding their satisfaction with online learning. Landrum et al. (2020) stated that students perceived high-quality communication with the teachers in online learning; however, students also expressed dissatisfaction with the timeless responses given by the teacher in online learning. Despite the mixed responses given by

students, ensuring their satisfaction with online learning is necessary. It is because student satisfaction is associated with their success in learning (Muzammil et al., 2020). Moreover, student satisfaction not only benefits the students but also the institution. Wong and Chapman (2022) stated that student satisfaction is currently emphasized by educational institutions since it has become one of the measures of higher education institution performance. It was emphasized by Puška et al. (2020), who stated that student satisfaction is an important consideration in examining the quality of academic experiences at the higher education institution. It indicated the importance of conducting research in this area.

Student satisfaction in online learning was widely explored by researchers (Saleh et al., 2020; Dinh & Nguyen, 2020; Nasir, 2020; Shaid et al., 2021). Basuony et al., 2021). Student satisfaction was associated with learner-learner, learner-instructor, and learner-content interaction, student engagement, faculty satisfaction, social presence, and overall student satisfaction (Alenezi, 2022). However, the correlation between online learning services and student satisfaction in an online learning setting remains unexplored. Therefore, the current research aims to explore the impact of online learning quality on students online learning satisfaction. This research is important since it is crucial and essential for higher education institutions to deduce student satisfaction in an online learning context (Puška et al., 2020). And in this case, higher education institutions are required to provide the best service in implementing the online learning activities for the students. The current research contributes to providing information related to the level of the online learning quality service given by the institution, the level of student satisfaction with the online learning quality, and whether the high quality of the online learning service given by the institution affects the students satisfaction with online learning. Therefore, this research is significant in enhancing the literature regarding student satisfaction and learning quality service in an online learning context.

METHOD

Procedure

The current research was quantitative, employing a cross-sectional survey. According to Ismail et al. (2022), this research method was able to provide a numerical, measurable explanation and is suitable for descriptive studies in terms of research that intends to explore the relationship between variables. Therefore, this method seems appropriate for the purpose of the current research, which examines the impact of the quality of the online learning service on students online learning satisfaction. The survey was distributed to university students in Lombok, Indonesia, at a specific university, namely STMIK SZ NW Anjani. The university was chosen since it conducted online learning and engaged in information and communication technology. Other than that, this research was concerning. The current research obtained the research ethical procedure permission, which was approved from the Research Etiquette Committee (REC) at University Technology Mara Malaysia with the consent number 600FP (5/2/4) on April 15, 2022.

Research participants

Since the current research was conducted at a university, the population of the current research was active students at that university. The participants were determined through the purposive sampling method. In 2022, when the research was carried out, the total number of active students at the university was 268. Therefore, based on the morgan sample size, the minimum sample size should be 155. For the current research, the participants involved were 158 students; therefore, the minimum sample size was obtained. The participants came from two different majors, namely system information and technical information, with the distribution as follows: 45.6% were system information majors, and 54.4% were technical information majors. In terms of participant gender, most of the participants were male, with a total of 62.7%, followed by females with 37.3%. In terms of the students age, the participants aged 19–24 were dominant in the current research with 94.9%, and the rest were participants aged 25–30 with 5.1%. The detailed information of the participants can be seen in table 1.

Table 1: characteristic of the Participants

Sample's Characteristics		N	Percentages
Age ranged	19-24 years old	150	94.9%
	25-30 years old	8	5.1%
Gender	Male	99	62.7%
	Female	59	37.3%
Major	Sytem information	72	45.6%
	Technic information	86	54.4%

Research instrument

Online learning quality services instrument consist of 24 items adopted from (Gattiker and Hlavka, 1992; Barbeite and Weiss, 2004; Joo et al., 2000; Amoroso and Chenney, 1991; Arbaugh, 2000), and online learning satisfaction consist of 17 items adopted from (Deshwal, 2016) was used to collect data for the current research. From the original sources of the instrument, the online learning quality service questionnaires consist of five dimensions: attitude toward computers, computer anxiety, internet self-efficacy, technology quality, and convenient usage. The online learning satisfaction questionnaires consist of three dimensions: pragmatic-pleasurable experience, usage experience, and hedonistic and exhaustive experience. The instrument was tested for validity and reliability through the pilot study. In the pilot study, 30 students who were not involved in the actual research participated. The participants filled out the questionnaires, and the data was checked with Cronbach alpha. The results indicate that the data was obtained to the standard of validity and reliability through the Cronbach alpha value as displayed in Table 1. The Cronbach alpha value for online learning quality services was.947, and online learning satisfaction was.989. Other than that, each dimension of the instrument was checked, and the results are as follows: in online learning service quality, the value of Cronbach alpha for attitude toward computers was.823, computer anxiety was.904, internet self-efficacy was.916, technology quality was.963, and convenient usage was.955. In terms of student online learning satisfaction, the Cronbach alpha for the pragmatic-pleasurable experience was.980, the usage experience was.980, and the hedonistic

and exhaustive experiences were .964. According to Nunnally (1978), the Cronbach alpha value greater than 0.70 indicates the questionnaires were valid and reliable to be used in research related to education. Therefore, based on the results of the pilot study, the questionnaires were valid and reliable enough to be used in the actual research.

Table 2: Instrument Cronbach Alpha Result

Dimension	Variable	No of item	Cronbach alpha
online learning quality service	Attitude toward computers	8	.823
	Computer anxiety	4	.904
	Internet self-efficacy	4	.916
	Technology quality	4	.963
	Convenient usage	4	.955
online learning satisfaction	Pragmatic-pleasurable experiences	7	.980
	Usage experience	4	.980
	Hedonistic and exhaustive experiences	5	.964

DATA ANALYSIS

The purpose of the current research was to examine the impact of the quality of the online learning service on students online learning satisfaction. The data obtained will be analyzed in the statistical package for social science (SPSS), employing several analyses, namely descriptive analysis, Pearson correlation coefficient, and multiple regression analysis. The descriptive analysis was used to reveal the basic characteristics of the data, namely the mean and standard deviation, in order to examine the learning service quality and the students e-learning satisfaction level. The Pearson correlation coefficient was employed to examine the correlation between the quality of the online learning service and the students online learning satisfaction. And the multiple regression analysis used to explore which dimension of the online learning service quality was significant as a predictor of the students online learning satisfaction.

RESULT

Descriptive statistic analysis

The current research aims to explore the impact of the quality of the online learning service on students online learning satisfaction. Firstly, researchers explore the level of the online learning quality service and the students online learning satisfaction by conducting descriptive analysis. Table 1 displays the results of the online learning quality services. The results indicate that online learning quality services consist of five dimensions: attitude toward computers, computer anxiety, internet self-efficacy, technology quality, and convenient usage. The highest value was internet self-efficacy ($M = 5.3968$, $SD = 0.79$), followed by computer anxiety ($M = 5.29$, $SD = .89$), technology quality ($M = 5.2168$, $SD = 0.77$), convenient usage ($M = 5.1558$, $SD = .79$), and attitude toward computers ($M = 4.68$, $SD = 0.91$). Overall, the result indicated that the dimension of the online learning service quality on students online learning satisfaction was very high.

Table 1: Descriptive analysis online Learning Quality Service

Dimension	Mean	SD	Level
Attitude toward Computer	4.6823	.91179	Very high
Computer Anxiety	5.2994	.89752	Very high
Internet Self-Efficacy	5.3968	.79113	Very high
Technology Quality	5.2168	.77947	Very high
Convenient Usage	5.1598	.79670	Very high

Table 2 displays the results of students online learning satisfaction. The result indicated that the students online learning satisfaction consists of three dimensions: pragmatic-pleasurable, usage experience, and hedonistic-exhaustive experience. The highest mean was pragmatic-pleasurable (M = 5.3897, SD = 0.7), followed by usage experiences (M = 5.3734, SD = 0.8), and hedonistic and exhaustive experiences (M = 5.3722, SD = 0.7). The results indicate that the three dimensions have a high mean, which means the students satisfaction was high.

Table 2: Descriptive statistic of students online Learning satisfaction

Dimension	Mean	SD	Level
Pragmatic-Pleasurable	5.3897	.77790	Very high
Usage Experience	5.3734	.83454	Very high
Hedonistic and Exhaustive Experience	5.3722	.79118	Very high

Inferential statistic analysis

Secondly, researchers explore the correlation of the quality of the online learning service with the student's online learning satisfaction. In this case, Pearson correlation was conducted as shown in Table 3.

The result indicated that the quality of the online learning service has a significant positive relationship with the students online learning satisfaction, with a correlation coefficient value of $r = .822$, $p = .000$. As such, the quality of the online learning service has a strong relationship with students online learning satisfaction. It was emphasized in the multiple regression analysis, where the predictor variable (online learning service quality) was included in the regression model at $p < .05$. It indicated that the online learning satisfaction quality was a predictor of the students online learning satisfaction, with a value of $R^2 = .92$.

A value of R^2 at 0.92 indicated that the predictor variable, namely the online learning service quality, significantly affects the students online learning satisfaction, at 92% ($r = .96$), as displayed in Table 4. As a conclusion, the quality of the online learning service was one of the contributing factors to the students online learning satisfaction, with a contribution of 92% to the variance change in the students online learning satisfaction. [$F(5) = 378.658$, $p < .05$].

Table 3: Pearson correlation values between online learning service and students online learning satisfaction

	Online Learning Quality Service	Online Learning Satisfaction
Pearson Correlation	1	.822**
Sig. (2-tailed)		.000
N		158

Table 4: Regression analysis of online learning service quality on students online learning satisfaction

Model	R	R square	Adjusted R Square	Std.Error of estimate	Df	F	Sig.
1	.962 ^a	.926	.923	.21727	5	378.658	.000 ^b

Table 5 explains more about the five dimensions of the online learning service quality on the students online learning satisfaction. The result indicated that there are three dimensions as predictors of the students online learning satisfaction with significant value, namely internet self-efficacy ($\beta=.854$, $p<.05$), technology quality ($\beta=.281$, $p<.05$), and convenient usage ($\beta=-.164$, $p<.05$). The other two dimensions were not significant in influencing the students e-learning satisfaction, namely attitude toward computers ($\beta=.071$, $p>.05$) and computer anxiety ($\beta=-.029$, $p>.05$).

Table 5: Multiple regression analysis of online learning service quality on students online learning satisfaction

Model		Unstandardized Coefficient		Standardized Coefficient		Sig
		B	Std.Error	Beta	t	
1	(Constant)	-.004	.138		-.031	.975
	Attitude toward computer	.067	.040	.071	1.697	.092
	Computer anxiety	-.026	.033	-.029	-.790	.431
	Internet self-efficacy	.846	.032	.854	26.634	.000
	Technology quality	.283	.052	.281	5.450	.000
	Convenient usage	-.162	.053	-.164	-3.074	.003

a. Dependent variable: e-Learning satisfaction

DISCUSSION

The current research aims to test the impact of the online learning service on students online learning satisfaction. The research concluded that the impact of the online learning service was high, which then increased the students online learning satisfaction to a high level. The online learning service has become a contributor to students online learning satisfaction. It was confirmed through the multiple regression analysis. Specifically, the part of online learning in internet satisfaction, the quality of the technology, and the convenient usage were the main predictors of the students online learning satisfaction. The three dimensions were confirmed to be significant in improving students e-learning satisfaction based on the multiple regression analysis.

The first factor affecting students satisfaction in an online learning setting in the current research was their internet self-efficacy. It means that the online learning service was able to form students internet self-efficacy. The significant impact of internet self-efficacy on student satisfaction might have happened since internet self-efficacy comprises the student's confidence to overcome basic challenges in operating or using the internet (Jokisch et al., 2020). It could formulate and enhance the students satisfaction since they were able to uncover and decline the challenges of internet usage. Other than that, the students internet self-efficacy was also affecting their willingness to use the digital service provider (Tetri & Juujärvi, 2022). Literature has proved the significant impact of internet self-efficacy on student satisfaction in an online learning setting. According to Tsai et al. (2011), internet self-efficacy affects students confidence in browsing and finding information, decrypting or encrypting messages, and operating the online learning setting. In this case, Hamdan et al. (2021) also found in their research that one of the predictors of the student's satisfaction in an online learning setting was internet self-efficacy. Therefore, the current research finding is in line with other research.

In this research, the quality of the technology was also found to be a factor affecting the students satisfaction in online learning settings. In the current research, the quality of the technology is part of the quality of the online learning service. The impact of quality technology on student satisfaction might be explained by how the university staff made sure any technology needed for conducting online learning was provided. Alhabeeb and Rowley (2017) found in their research that the technical infrastructure and staff knowledge of technologies were significant factors in the success of the acceptance of students in an online learning setting. It means that the role of the staff in providing technologies that support online learning is significantly important. Specifically, Mulhem (2020) stated that the specific aspects of technology quality that affect students satisfaction in an online learning setting are the quality system and quality service. It means that the utilization of technology in an online learning setting should consider the quality of the system given and the quality of the service given. The quality of the system is related to how the technology was utilized to provide a sufficient system to support the learning, and the quality of the service is related to how the staff that operated the technology system had sufficient skill and commitment to support the learning in an online learning setting.

Another important aspect that affects student satisfaction in an online learning setting is the convenience of the technology used. According to Cole et al. (2014), satisfaction is the most important factor that contributes to the student's outcome, and convenience is the main contribution to student satisfaction in an online learning setting. It means that the use of technology is not only for bridging the interaction between the students and the teachers, but also for aspects related to students convenience, such as better and faster access to the internet or to the system used, internet and advanced computing devices used, and a social and collaborative learning environment (Molinillo et al., 2018). Specifically, the internet's existence was intended to make human activities more convenient, including education. In this case, online learning provides a convenient model of learning for the students. For example, it could reduce and create convenience in terms of time, space, and cost (Hoi et al., 2021), make the

learning process more accessible anywhere and anytime (Ferri et al., 2020), and reduce offline mode restrictions such as resources, facilities, and equipment (Castro and Tumibay, 2019). Through the convenience provided, the use of services in online learning could affect students satisfaction since the services provided in an online learning setting were not acquired by the students in offline learning mode.

CONCLUSION

The current research aims to examine the impact of online learning service quality on student online learning satisfaction. The descriptive analysis concludes that the level of online learning service quality and students' satisfaction in online learning settings were very high. The Pearson correlation indicates a strong and significant correlation between online learning quality service and student online learning satisfaction. The result of the multiple regression analysis emphasized the significant impact of the online learning quality service on student online learning satisfaction, where three dimensions of online learning quality service significantly contributed to student online learning satisfaction, namely internet self-efficacy, technology quality, and convenient usage. This research contributed to proving the impact of online learning quality service on student online learning satisfaction. This research also predicts several aspects of online learning service quality that significantly affect students online learning satisfaction.

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