

Students' Evaluation Towards Online e-Learning and Face-To-Face Learning

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Abstract

Students' learning processes and future employment preferences are heavily influenced by their learning environment. It is regarded as a critical aspect in determining the success of an effective curriculum and academic accomplishment of students. The consequences of online e-learning versus face-to-face learning have been discussed in higher education for several years. In this paper, the study attempted to investigate the issues of students' perception and their feedback on online e-learning and face-to-face (F2F) learning. The instruments of data collection were carried out by questionnaire using Google form platform. This research shared the closed-ended questionnaire with 136 Universiti Teknologi MARA Perak Branch students from three different faculties; Faculty of Computer and Mathematical Sciences (FSKM), Faculty of Applied Sciences (FSG) and Faculty of Architecture, Planning and Surveying (FSPU). The data were entered in Microsoft Excel and analysis was carried out using SPSS version 26.0. All the three categorical variables were presented as frequency and percentage. In this research, descriptive statistics were computed and Spearman's rank-order correlation was used to measure the strength and direction of the relationship between the two categorical attributes. The analysis of all the faculties involved in this research show a difference in students' perceptions and experiences in online e-learning and face-to-face learning. Overall results show that most students preferred face-to-face learning compared to online learning.

Keywords: Online E-Learning, Face-To-Face, Descriptive Statistic, Spearman's Rank-Order

Introduction

Nowadays, online e-learning is becoming a commonplace for teaching and learning method all over the world. The major impact of the Covid-19 pandemic that started in March 2020 towards the educational institution system was it forced the shift of the pedagogical medium from face-to-face method to online e-learning method and all teaching moved to

virtual space. This can be seen through changes in the platform and teaching methods employed at the school level as well as in other educational institutions. Malaysia has joined the global shift to transition from Pandemic status to endemicity, after over 2 years of living with strict emergency measures to curb the transmission of Covid-19. Now all educational institutions are fully open, and the method of teaching and learning has changed to both online e-learning and face-to-face learning.

Previous researches have investigated students' perception and satisfaction of online learning and face-to-face learning. Bali & Liu (2018) explored the student's perception towards online learning and face to face learning in terms of social presence, social interaction, and satisfaction among 176 students at Indonesia Open University, Taiwan Branch. The result of the study found that there was no statistically significant difference in learning perception among levels of students. Fortune et al., (2011) did their survey of 156 students' courses study recreation and tourism courses at a multicultural university in Northern California, USA who enrolled in either online or face-to-face learning. They found that there was no statistically significant difference in learning perception for those that registered in the two different learning modes. Some students were very comfortable with online learning as it provided them with accessibility, flexibility and convenience in terms of place and time.

There are several platforms for online learning that are created to connect teachers and students in the teaching and learning process. Online learning is a form of distance learning that takes place over the internet. Face-to-face learning is usually carried out with lectures, presentation, discussion and other kinds of learning method which are all carried out in the classroom. With online learning, some students prefer recorded class in which their lecturer will give quizzes at the end of each class to enhance their effectiveness in learning as well as to achieve learning objectives. Kemp & Grieve (2014) studied among undergraduate Psychology students (n=67) at an Australian university and the result shows that most of them preferred to complete all the activities using face-to-face instead of online learning. However, their research argued that face-to-face and online learning activities can lead to similar levels of learning outcomes and students' performance as students preferred doing written activities using online platforms but face-to-face participation in discussion. Tratnik (2017) in their study indicates that there is a significant difference in satisfaction levels of learning in English of foreign languages between online e-learning and face-to-face. In English course, students who experienced face-to-face learning were generally more satisfied with the course in several dimensions compared to their peers who learnt online.

Different courses taken among university students will affect their perception towards online and the face-to-face learning process. According to the study conducted by (Awal et al., 2021) on students' perceptions of learning using descriptive research with a quantitative approach that involved Islamic Religious Education Study Programs (n=100), the result shows that most of the students preferred learning face-to-face rather than online. With the current situation, now is the right time to conduct research to identify the best method of learning for students, either by online learning or face-to-face. Identification of students' needs and their perception towards the different learning methods are the most important part for lecturers in evaluating the best method for lecturing and finding out the suitable class activities to ensure learning objectives are achieved. More specifically, the purpose of this research was to explore students' perception towards online and face-to-face courses in terms of students' engagement, students' enjoyment and students' motivation.

Literature Review

In the last few years, traditional education had gone through huge changes as physical presence as a learning method was replaced with online e-learning. This trend was owing to the advancement of the internet and new technologies (Kazim & Janjua, 2021). The rapid global adoption of online e-learning was also majorly caused by the Covid-19 outbreak. The pandemic has further magnified the importance of distance learning as the statistics in 2020 showed that about 97% of total enrolment from higher educations shifted to online learning (Johnson et al., 2020).

The term online e-learning is defined as learning activities are self-learnt by using online document and database (Schreurs, 2003). It also occurs when the teaching and learning process takes place in a different location for students and lecturers (Sun & Chen, 2016). From a critical point of view, online distance learning is seen to be effective only if it delivers equivalent results to those measured in traditional classroom-based instruction (Bentz et al, 2010). Therefore, to achieve an effective learning, online e-learning needs to be developed innovatively (Anggrawan & Qudsi, 2018).

(Anggrawan & Qudsi, 2018) also deduced that online e-learning helps students to learn according to their abilities and time desired by students. This finding is backed by (Roblyer & Doering, 2010) who found out that online e-learning enables students to acquire self-responsibilities, self-organizing skills and access to technology skills. (Andronie, 2012) also reveals that online e-learning has transformed into an efficient learning solution for educational institutions. Additionally, (Hiltz et al., 2002) showed that online learning environments tended to be just as effective or more effective than traditional course delivery by reviewing nineteen empirical studies comparing the two learning methods. However, previous researches also discovered some drawbacks to online e-learning. The overall findings by the different researches centered around the lack of technological equipment and meaningful interaction between learners and teachers. According to (Sindiani et al., 2020), on the student's ends, the absence of technological equipment has become a major disadvantage to distance learning. They also highlighted the lack of direct contact between teachers and students as a disadvantage which is supported by (Tang & Chaw, 2013) who stated that scientists agree that online e-learning cannot substitute the meaningful interaction among students and teachers that face-to-face learning can offer. Baskakova et al (2021) also found out in their study that students mentioned a lack of critical technical tools for distance learning such as high-performance personal computers, high speed internet connectivity and high-quality web cameras and microphones limit their distance learning's experience. The changes in how students interact during e-learning session has a negative impact on their motivation to learn (Di Pietro et al., 2020). Despite all the disadvantages presented, online e-learning was the main alternative during the Covid-19 outbreak as to ensure the continuity of learning of students worldwide.

Based on the huge adoption of distance learning, it is apparent that online e-learning will fill the gap left by traditional face-to-face education and becomes an integral part of the educational process, hence examining the efficiency of distant education is relevant and useful (Baskakova et al., 2021). The various results from the previous researchers could mean that there is no way to generalize the effectiveness of online e-learning against traditional method or vice versa. Therefore, this study was carried out to unfold the effectiveness of online e-learning on students of FSKM, FSG and FSPU from UiTM Perak Branch who have experienced both face-to-face and online e-learning only.

Materials and Method

A. Participants and Data Collection

This study involved 136 students who experience their online e-learning and face-to-face courses from two campuses, Tapah and Seri Iskandar, Universiti Teknologi MARA (UiTM), Perak Branch. A cross-sectional study using the convenience sampling method was conducted in this study. Questionnaire responses were collected from 1st May to 7th May 2022. The link to the survey was given via WhatsApp and Telegram messenger. All participants in this survey volunteered to participate and were asked to complete the online survey that took about an average of 5 to 10 minutes to answer all questions.

B. Instruments

The questionnaire consists of 20 items that fall into three main parts: A. Demographic Profile (3 questions); B. Perception towards online e-learning and face-to-face learning (7 questions); C. Students' feedback towards online e-learning and face-to-face learning (10 questions). A five Likert-type scale allowed students to select between 1 (strongly disagree), 2 (Disagree), 3 (Neither), 4 (Agree), and 5 (strongly agree). The students' feedback section covered aspects of engagement with both methods of learning, enjoyment in learning experiences and student motivation.

C. Statistical Analysis

All the results were analyzed using the Statistical Packages for the Social Sciences (SPSS) version 26.0. In this study, descriptive statistics were computed, and Spearman's rank correlation was performed to measure the strength and direction of the relationship between the two categorical attributes. The level of statistical significance employed in this analysis was 0.05. The internal consistency reliability of the questionnaire was tested by Cronbach's alpha. The value of the consistency reliability coefficient should be achieved at more than 0.7 (Paul, 2000). In this study, the Cronbach's alpha of the scale was 0.71 which indicated that the questionnaire was a reliable instrument for this study.

Results and Discussion

Table 1 below represents the summary of the demographic profile of students, background of the faculty and their experiences in learning through face-to-face and online e-learning. A total of 136 students from two campuses who experienced both deliveries had participated in this study. Most students (64%) were female. There were 3 faculties involved in the survey; 18.4% from Faculty of Applied Science (FSG), 48.5% from Faculty of Computer and Mathematical Sciences (FSKM) and 33.1% from Faculty of Architecture, Planning and Surveying (FSPU).

Table 1

Demographic Profile

Gender	Frequency	Percentage (%)
Female	87	64
Male	49	36
Faculty		
FSG	25	18.4
FSKM	66	48.5
FSPU	45	33.1
I have experience with online distance learning and face to face learning during my study		
Agree	130	95.6
Disagree	6	4.4

A. Perception Towards Online e-learning and Face-to-Face Learning

Most students choose to agree (67.6%) that they have experiences on both methods: online e-learning and face-to-face during their study. Among these two methods, students preferred learning face-to face (total 59.6%) compared to online e-learning (40.4%). The reason why they chose the method is because it is easy to understand (52.2%), they can learn anywhere at any time (35.3%) and it is more user friendly (12.5%). The summary of statements regarding to students' perception was shown in Table 2.

Table 2

Students' Perception

Is this your first time learning in both method: Online e- Learning and Face-to-Face Learning?	Frequency	Percentage (%)
Maybe	4	2.9
No	40	29.4
Yes	92	67.6
Please choose the Most Preferred learning method that you want to be applied during your study		
Face-to-face	81	59.6
Online e-learning	55	40.4
Based on the above answer, what is the Most Reason you choose to learn in this method?		
Can learn anywhere at anytime	48	35.3
Easy to understand	71	52.2
More user friendly	17	12.5

The effect of learning style was analysed in two dimensions: perception and feedback. For each of these dimensions, students stated their level of agreement on a 5-point Likert scale (strongly disagree (SD), disagree (D), neither agree nor disagree (N), agree (A), strongly agree (SA)) to answer the related statements. The results for each dimension are discussed in Table 3 and Figure 1. They contain the statements regarding to students' perception towards online e-learning and face-to-face learning.

Table 3

Students' Perception

Item No.	Item's description	SA & A		Neither		SD & D	
		n	Percentage (%)	n	Percentage (%)	n	Percentage (%)
PER 1	Online e- Learning takes more time to understand compared to F2F Learning	83	61	38	28	15	11
PER 2	I believe that Online e-Learning enhances my understanding on the topic.	59	43.4	67	49.3	10	7.3
PER 3	F2F Learning delivery would be a better way for me to learn the course.	94	69.1	37	27.6	5	3.3
PER 4	Learning in F2F method would contribute to my overall satisfaction with the course	88	64.7	46	33.8	2	1.5

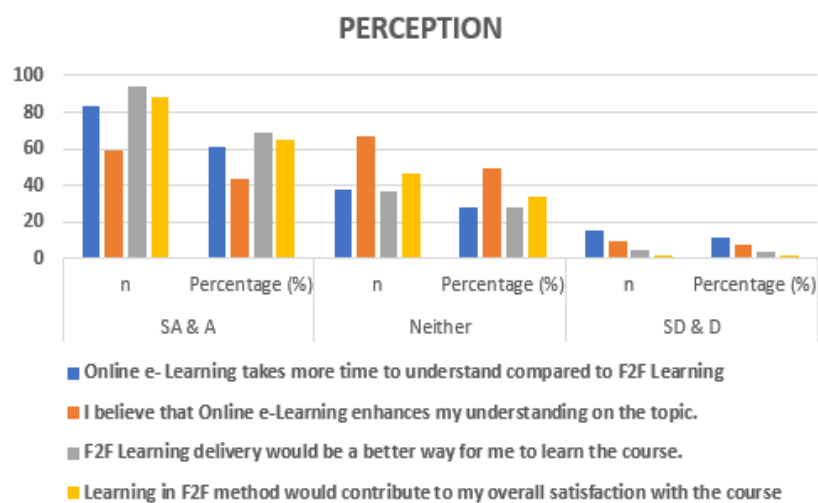


Figure 1. Students' perception towards online e-learning and F2F learning

Based on the students' perception questionnaire, 61% of students strongly agreed and agreed that online e-learning takes more time to understand compared to face-to-face learning. Majority of them (69.1%) agreed that face-to-face learning delivery would be a better way for them to learn and 64.7% stated that this method would contribute to their overall satisfaction with the course. However, 49.3% of the students stated neither for the statement "online e-learning enhances my understanding on the topic".

B. Feedback Towards Online e-learning and Face-to-Face Learning

Online e-learning and face-to-face learning has its advantages and disadvantages. It is very important to know student's feedback in order to identify what would be the best delivery method to the students. The statements referring to students' feedback are presented in Table 4 and Figure 2.

Table 4

Students' Feedback

Item No.	Item's description	SA & A		Neither		SD & D	
		n	Percentage (%)	n	Percentage (%)	n	Percentage (%)
FEE 1	I like to learn in both methods: F2F Learning and Online e-Learning	91	67	34	25	11	8
FEE 2	I don't care which method is the best. I will accept any method introduced to me	77	56.5	44	32.4	15	11.1
FEE 3	I want to complete all the topics in the syllabus quickly during class	64	47.1	55	40.4	17	12.5
FEE 4	Learning in F2F method would improve my ability to learn in any course	95	69.9	36	26.5	5	3.6
FEE 5	The use of technology in Online e-Learning increases my ability to accomplish the required coursework	92	67.6	36	26.5	8	5.9
FEE 6	I can communicate better with my classmates when I use emails/ Whatapp/ Telegram as my platform of communication	72	55	38	27.9	26	19.1
FEE 7	I feel happy when I learn in F2F method	98	72	27	19.9	11	8.1
FEE 8	It is very important for me to adapt in Online e-Learning and F2F Learning	121	89	12	8.8	3	2.2
FEE 9	I try very hard to learn in Online e-Learning and F2FLearning	92	67.7	40	29.4	4	2.9
FEE 10	I pay better attention in Online e- Learning compared to F2F Learning	51	37.5	51	37.5	34	25

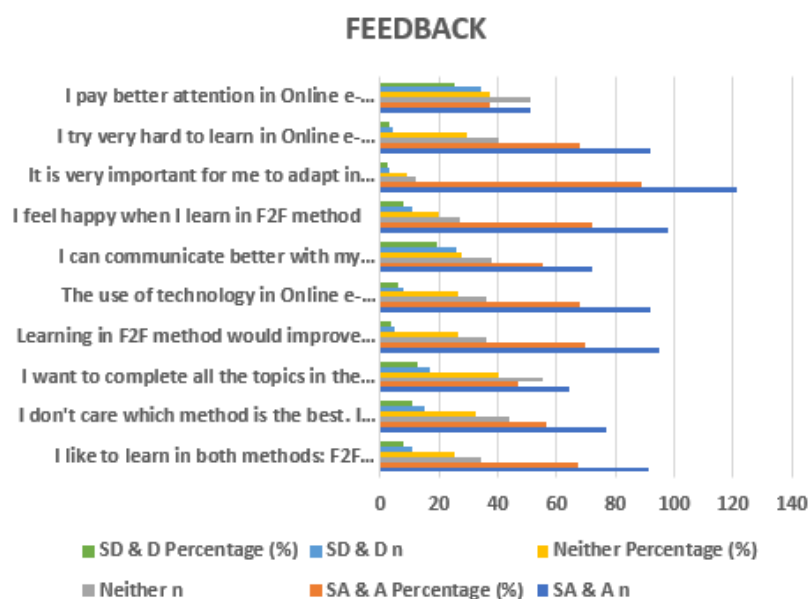


Figure 2. Students' feedback towards online e-learning and F2F learning

When students had experience in both learning face-to-face and e-learning, a majority of them agreed to like learning in both methods (67%). Some of the students (56.5%) just accepted any delivery method introduced to them. 69.9% of the students agreed that learning face-to-face would improve their ability to learn in any course. It is proven when 72% of them felt happy learning in face-to-face method. However, when it comes to the application in technology, 55% of them agreed that their communication is better in e-learning.

C. Descriptive Statistics on Mean and Standard Deviation

The results of mean and standard deviation are summarized in Table 4. Descriptive statistics is the type of analysis of data that helps describe and summarize data points in a constructive way. It is one of the most important steps for conducting statistical data analysis. In descriptive statistics, it is essential to know how frequently a response is likely to occur.

Table 5

Descriptive Statistics

<i>Item</i>	<i>Mean</i>	<i>Std. Deviation</i>
I like to learn in both methods: F2F Learning and Online e-Learning	3.88	1.014
I don't care which method is the best. I will accept any method introduced to me	3.68	1.059
I want to complete all the topics in the syllabus quickly during class	3.53	1.003
Learning in F2F method would improve my ability to learn in any course	3.92	0.844
The use of technology in Online e-Learning increases my ability to accomplish the required coursework	3.84	0.888
I can communicate better with my classmates when I use emails/ Whatapp/ Telegram as my platform of communication	3.59	1.145
I feel happy when I learn in F2F method	3.98	0.931
It is very important for me to adapt in Online e-Learning and F2F Learning	4.35	0.736
I try very hard to learn in Online e-Learning and F2FLearning	3.99	0.899
I pay better attention in Online e- Learning compared to F2F Learning	3.19	1.092

It is generally found that there are relatively high levels of practice in learning both methods ($M=3.88$, $SD=1.014$), learning in face-to-face ($M=3.92$, $SD=0.844$) and students feel happy when they learn in face-to-face method ($M=3.98$, $SD=0.931$). Furthermore, the finding indicates that it is very the important for students to adapt in online e-learning and face-to-face ($M=4.35$, $SD=0.736$).

D. Relationship between gender and mean effect towards online e-learning and face-to-face learning

The relationship between gender and mean effect towards online e-learning and face-to-face learning activity such as engagement, enjoyment and motivation are demonstrated in Table 6. In this study, Spearman's rank order correlation was used to measures the strength and direction of association between two categories. Spearman's rank is a popular method for correlating unvalidated survey instruments or Likert-type survey responses in cases like non-parametric statistics. The Spearman's rank reveals a statistical significance that there is a significantly low positive association both between female and male students and mean effect of motivation and engagement ($r_s=0.243$, $p=0.023$) and ($r_s=0.272$, $p=0.059$). There is a low positive association between female students and mean effect of motivation and enjoyment ($r_s=0.319$, $p=0.003$) which means that female students have low effect on

motivation, engagement and enjoyment in online e-learning and face-to-face-learning. In this study, it can be assumed that female and male students have all effect in learning both online and face-to-face.

Table 6

Relationship between gender and mean effect towards online e-learning and face-to-face learning

Correlations						
	Gender			ENGAGE MENT	ENJOY MENT	MOTI VATION
Spear man's rho	FEMALE	ENGAGE MENT	Correlation Coefficient	1	.426**	.243*
			Sig.(2-tailed)	.	0	0.023
			N	87	87	87
		ENJOY MENT	Correlation Coefficient	.426**	1	.319**
			Sig.(2-tailed)	0	.	0.003
			N	87	87	87
		MOTI VATION	Correlation Coefficient	.243*	.319**	1
			Sig.(2-tailed)	0.023	0.003	.
			N	87	87	87
	MALE	ENGAGE MENT	Correlation Coefficient	1	.610**	0.272
			Sig.(2-tailed)	.	0	0.059
			N	49	49	49
		ENJOY MENT	Correlation Coefficient	.610**	1	.381**
			Sig.(2-tailed)	0	.	0.007
			N	49	49	49
		MOTI VATION	Correlation Coefficient	0.272	.381**	1
			Sig.(2-tailed)	0.059	0.007	.
			N	49	49	49
**. Correlation is significant at the level 0.01 level (2-tailed).						
*. Correlation is significant at the level 0.05 level (2-tailed).						

E. Relationship between preferred learning and mean effect towards online e-learning and face-to-face learning

Table 7 represents the relationship between preferred learning and mean effect towards online e-learning and face-to-face learning. The Spearman's rank reveals a statistical significance that there is a significantly low positive association in preferred learning method in face-to-face and online e-learning and mean effect of engagement and motivation ($r_s=0.257$, $p=0.021$) and ($r_s=0.278$, $p=0.040$). However, there is a slightly positive association between online e-learning and mean effect of enjoyment and motivation ($r_s=0.400$, $p=0.002$)

Table 7

Relationship between preferred learning and mean effect towards online e-learning and face-to-face learning

Correlations						
	Preferred learning method			ENGAGEMENT	ENJOYMENT	MOTIVATION
Spearman's rho	Face-to-Face	ENGAGEMENT	Correlation Coefficient	1.000	.488**	.257*
			Sig.(2-tailed)		0.000	0.021
			N	81	81	81
		ENJOYMENT	Correlation Coefficient	.488**	1.000	.323**
			Sig.(2-tailed)	0.000		0.003
			N	81	81	81
		MOTIVATION	Correlation Coefficient	.257*	.323**	1.000
			Sig.(2-tailed)	0.021	0.003	
			N	81	81	81
	Online learning	ENGAGEMENT	Correlation Coefficient	1.000	.519**	.278*
			Sig.(2-tailed)		0.000	0.040
			N	55	55	55
		ENJOYMENT	Correlation Coefficient	.519**	1.000	.400**
			Sig.(2-tailed)	0.000		0.002
			N	55	55	55
		MOTIVATION	Correlation Coefficient	.278*	.400**	1.000
			Sig.(2-tailed)	0.040	0.002	
			N	55	55	55
**. Correlation is significant at the level 0.01 level (2-tailed).						
*. Correlation is significant at the level 0.05 level (2-tailed).						

Conclusion

The results of the present research show that among the respondents, there is a greater preference for conventional face-to-face learning method compared to online e-learning. These results are further confirmed by the fact that more than half of the respondents (about 59.6%) stated that they wanted this classic teaching format to be applied during their study. In this conventional method, lecturers are better able to measure students' understanding and interest, and more easily attract their excitement towards the course taken. Therefore, it makes it easier for them to understand the course.

The present study focused on the students' engagement, enjoyment and motivation towards these two learning methods. Face-to-face learning takes place in a classroom and most of the time is centered around the lecturer. This teaching format requires physical interaction between both parties, lecturer and students. These physical classes have helped

them a lot, not only because of the direct communication with the lecturer that makes learning process easy, but also the presence of their friends who actually motivate them indirectly. For all of these reasons, this method would be a better way for them to learn the course well.

However, there is also a positive aspect of e-learning in terms of student's enjoyment. The study has shown that during online e-learning, students' ability to accomplish the required coursework increases with the use of technology. Other than that, many still hold on to the opinion that you cannot attain the same knowledge and skills through a computer as you would in a classroom.

To summarize, one thing is certain that conventional face-to-face learning is the most preferred method chosen by the majority of respondents compared to e-learning.

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