

Covid-19 Crisis: Is Online Learning More Effective Than Face-To-Face Learning?

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Abstract: *Traditional face-to-face learning and online learning have become a debate for decades, which is more effective and has a significant impact on students' learning. The pandemic of COVID-19 has forced students to change their study mode from traditional face-to-face learning to online learning. This study has conducted a study to identify which ways are more effective, the traditional face-to-face learning or online learning using a quantitative method of online survey questionnaires. This study intends to fill this void in the literature and explore students' perceptions of online learning versus traditional face-to-face learning. This study used target respondents of 148 public and private university students in Malaysia. According to the results, most of the respondents preferred traditional face-to-face learning is more effective than online learning because of some problems they encountered while doing online learning, such as lack of course instructions and unreliable university internet connection.*

Keywords: *quantitative; perception; university; students; connection.*

1. INTRODUCTION

Higher education institutions in Malaysia and worldwide have been gradually adopting online learning delivery strategy with a combination of traditional learning. At the early ages of long-distance education, universities offer many courses in satellite campus format. Nowadays, long-distance education means classes are delivered online via the internet. In this age of Information Technology (IT), online classes in higher education institutions were widely used. Online students worldwide have been taking online courses, and some of them were taking the entire degree from various institutions via the internet.

Pandemic COVID-19 was also affected education. Since the announcement of Movement Control Order (MCO), nearly 300 million students have disrupted their school activities around the world and endangered their potential rights to education. Ministry of Education is very attentive to respond to this pandemic and has taken measures to avoid transmission of COVID-19 by reducing activities on campus in the midst of a pandemic. In addition, to help the government deal with the pandemic situation, all activities involving teaching and learning have been remote via online.

Besides, student learning outcomes in an online environment and a traditional classroom in higher education institutions, as many people know, have their pros and cons. As online classes have become more common these days, this question has received attention for this

study. Although there are numerous studies in this area, there is no absolute answer to online classes' effectiveness. Online learning is less effective compared to face-to-face learning among students. Thus, this study aims to identify the effectiveness of online learning using a quantitative method among university students.

Related Works

An easy way to comply with the conference paper Online learning is a new learning among students instead of traditional learning, which is the need for face-to-face interaction. Much research has been conducted to compare online learning and face-to-face learning to determine learning methods' effectiveness. Yam and Rossini [1] performed a study on two groups of education delivery: online and face-to-face learning, and found that 77.6% of the self-selected online learning while only 17.4% preferred face-to-face learning. Neuhauser [2] found that for the online section, Cumulative Grade Points Average (CGPA) for the final grade was 3.5, while for the face-to-face section, their CGPA is 3.35, which is over 4.0 scale respectively. Online learning helps students increase their skills and make their schedule better since students do not need to attend a face-to-face class that requires them to move from one place to one place. Via online learning, students also can do their work either part-time or full-time. Fortune et al. [3] found that 64% of students' samples worked either part-time or full-time. The percentage of working students is higher than unemployed students.

However, the face-to-face class also has its advantage since communication is crucial in learning. Miliszewska [4] found that the respondents preferred face-to-face class because communication between classmates and lecturers became easier. Students can get instant feedback from their lecturers if they have any difficulties. Since this learning method is easier to find the solution to the study problem, it can increase motivation to study among students. Thus, face-to-face was preferred. Online learning consisted of video conferencing and needed an internet connection to join the class. Some of the students have difficulties in joining the class due to lack in the facilities. Also, some students preferred face-to-face learning because online learning is hard because they required them to learn by watching the laptop screen only. Miliszewska [4] found that some students have faced difficulties learning in front of the computer because it was boring and hard. Therefore, online learning and face-to-face learning are needed to investigate and determine the effectiveness of these both learning styles. Many research activities can be done to test it. According to Neuhauser [2], to know the effectiveness of learning by the student's assessment such as chapter tests, lectures, individual assignments, presentations and reviews can be used. Hence, to know if online learning or face-to-face is effective or not, hypotheses need to be tested.

Thus, this study is trying to fill in the gap where the sample is self-selected, which is either the students prefer to take online class or face-to-face learning. Fortune et al. [3] noted that asking more sections of the face-to-face learning group to participate in the next study can solve one of the limitations. While according to Arias et al. [5], the sample size does not allow for anything more than a suggestion that the two approaches in question may lead to different results depending on how one measures student performance. Learning effectiveness cannot be proven only by the exam grade since other factors can show effectiveness. Neuhauser [2] found that grades and learning preferences lack significant differences and have a non-existent correlation. Hence, this study shows that learning ways preference had no impact on final grades. Arias et al. [5] found that the study did not collect information about the student's online class experiences. This information is essential because the future of their information shows the course structure and the number of online courses that the students had.

2. METHODOLOGY

A. *Participants*

An amount of 148 graduate and undergraduate students enrolled in public or private universities all around Malaysia volunteered to engage in the study. 103 were female and 45 were male, 145 participants were aged between 18 to 30 years old and three participants were aged above 30 years old.

B. *Materials*

The online questionnaire adopted from study entitled 'Traditional Versus Online Learning in Institutions of Higher Education: Minority Business Students' Perceptions' by Alsaaty et al. [6]. Questionnaire was consisted of 15 questions devised to obtain information about students' demographics such as age, gender, and study discipline during Movement Control Order (MCO) in 2020. The questionnaire was also aimed to learn about students' experience with online lecture and face-to-face learning methods, skills acquired, difficulties encountered, and their opinions about the two study platforms. Online google form was used to analyze the data.

C. *Procedure*

The data were collected by sharing online google form link https://docs.google.com/forms/d/e/1FAIpQLSd0_avy7DEi_BgXDTsJOA0esfMNAAF9YDijZnZzQ2d2JhNGTQ/viewform?usp=sf_link through social media platform such as WhatsApp to random students. The purpose of the study is described in the survey description. The participants answered the survey and submitted the survey by clicking on the submission button provided from 25 June 2020 until 12 July 2020.

3. RESULTS

An easy way to comply with the conference paper Online learning The majority of the respondents in this survey were undergraduates (81.8%), female (69.9%) between the age of 18 and 30 years old (98%), currently unemployed (85.8%), and enrolled in public university (93.9%) located in Sabah (38.5%). The data shows that the participants had previously enrolled in at least one online course. It could be said that the viewpoints expressed by the respondents about online vs. face-to-face learning methods were informative, dependable, and valuable.

Based on figure 1, when students were asked about the problem they encountered in the online learning environment, 52% of the respondents surveyed revealed that they spotted the course instruction were satisfactory or easy to understand. In comparison, over 48% of respondents spotted the course instruction lacking or difficult to understand. Also, 56.8% of the respondents surveyed revealed that they spotted the lecture material satisfactory or easy to understand. Over 43.2% of respondents spotted the lecture materials, either difficult or very difficult to understand. 89.1% of the respondents revealed that they have no problem contacting the faculty, while 20.9% of the respondents spotted that they have difficulty contacting the faculty. Next, 45.3% of the respondents revealed that they do not face any internet connection problem, while 54.7% of the respondents revealed a problem with an internet connection. Over 25.7% of the respondents surveyed revealed that they face all of the problems such as lack of course instructions, difficulty contacting the faculty, difficult course materials, and unreliable internet connection. 0.7% of respondents also indicated some uncomfortable learning environment problems, too many assignments, and technical problems.

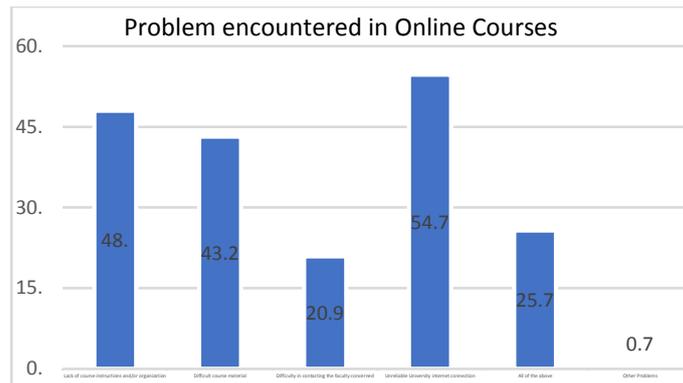


Figure 1: Problems Encountered in Online Learning

One of the questions inquired was devised to determine whether students who are enrolled in online courses and learning the subject matter of the course and if so, what are the skills they might obtain from it. The data in figure 2 shows that the majority (50.6%) of respondents pointed out that they learned a new skill by enrolling in an online learning course. 16.3% pointed out that they did not learn any new skills, while 33.1% pointed out that they were neutral about the matter. The respondents reveal that they learned different technical skills, course-related skills, google meet, and teamwork skills. Based on the feedback, it can be said that the online teaching method provides respondents with the skill that extends beyond the core content that had in courses and programs of study.

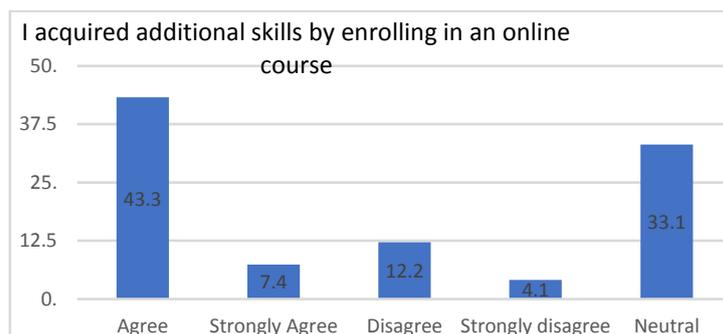


Figure 2a: Skill learned in Online Courses

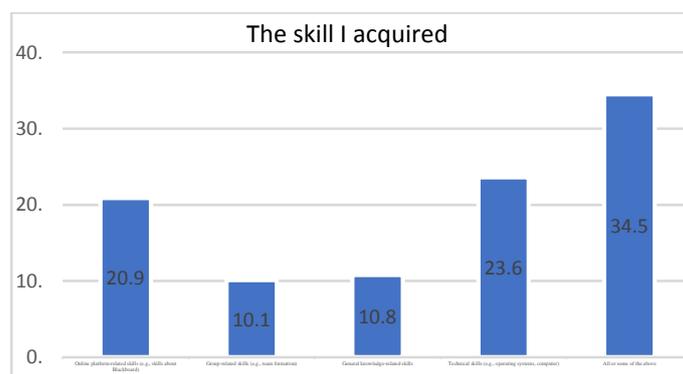


Figure 2b: Skill learned in Online Courses

Do online learning more efficient/ easier than face-to-face learning methods from student perceptions? Table 3 shows the insight of student's perceptions of the issues. Based on the data in figure 3a, 17.6 % of the respondents revealed that they spotted online courses easier to complete than in-class, face-to-face courses, while over 59.4% of the respondents revealed that it is difficult. However, 23% of the students surveyed are neutral on the matter.

Furthermore, 19.6% of the respondents surveyed agreed that enrolling in online courses could help the student perform better than face-to-face classes, while 59.4% of the respondents disagree that it is easier to accomplish better performance in online learning in comparison to face-to-face learning. 23.6% of the students are neutral on the matter.

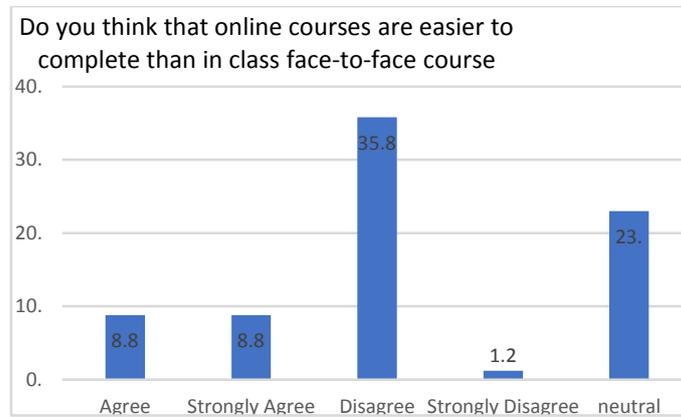


Figure 3a: Effectiveness of Online Learning

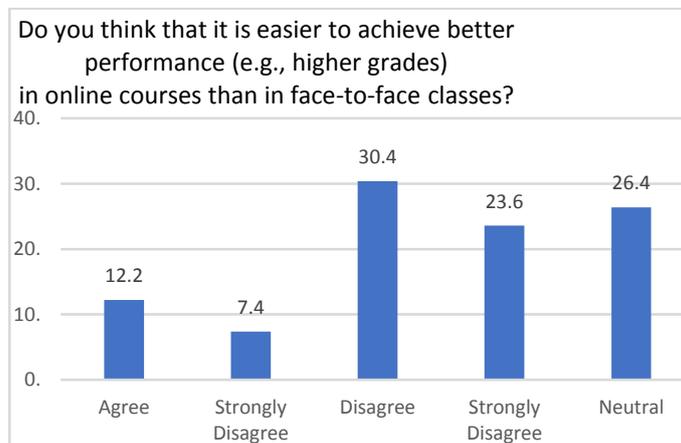


Figure 3b: Effectiveness of Online Learning

Would students proposed universities to provide more online classes? The statistic showed that bulk (44.6%) of the respondents agreed that providing more online courses is highly useful to students. Relatively 23.3% disagreed, while 31.8% were neutral. Figure 4 indicates that 25% of unemployed students would have signed up in more online courses during a semester acquired the courses been available. While 46% of the bulk unemployed students would not sign up in more courses during a semester acquired, they could find more online courses. 28.9% of unemployed students were neutral. Only 15% of employed students (part-time or full-time) would have signed up in more courses during a semester acquired more online courses were available. Meanwhile, 35% would not enroll in more courses. 50% majority of them were neutral about the matter.

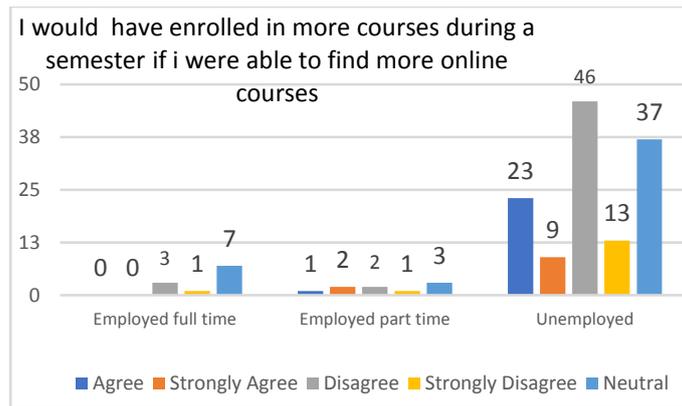


Figure 4: Employment * I would have enrolled in more courses if I were able to find more online courses

In figure 5, the further study said that there are contrasts between male and female viewpoints. The data show that 28.9% of the males agreed that online courses are more accessible to complete than face-to-face courses, whereas only 23.3% of them agreed. The survey revealed that 59.5% of both genders disagreed with the statement that online courses are more comfortable to complete.

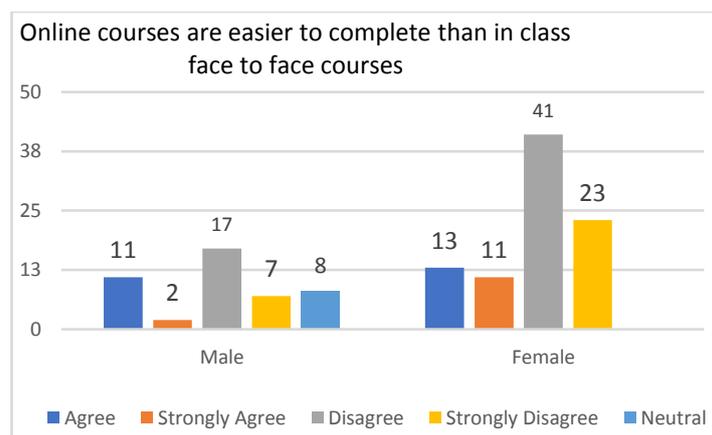


Figure 5: Gender * Online courses are easier to complete than in class, face-to-face courses

Figure 6 illustrates the contrasts in viewpoints in terms of gender. The data showed that 73.9% of male respondents regard online learning is not as effective as face-to-face courses, while 71.6% of female respondents regard that online learning is not as effective as face-to-face learning. On the other hand, 8.7% of male respondents regard online learning is superior to face-to-face learning contrasted to 13.7% of female respondents.

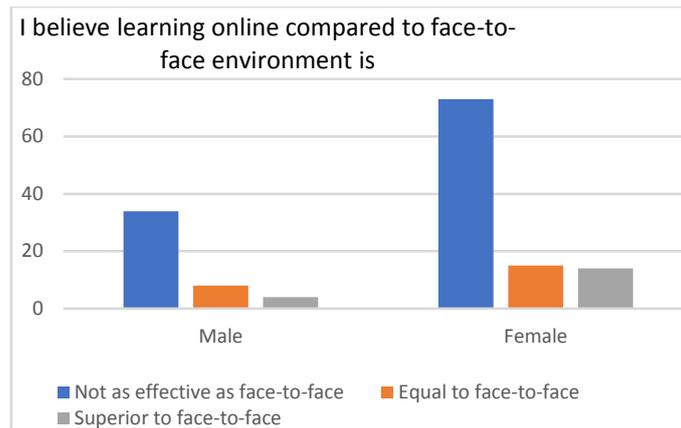


Figure 6: Gender* I believe learning online compared to face to face environment is

Further study was performed to research students' viewpoints about what they learned in an online teaching setting contrasted to a comparable face-to-face setting. Figure 7 shows that 16.5% of the students from public universities agreed that they learned more in an online teaching setting than in a similar face-to-face classroom setting. In comparison, only 44.4% of private university students agreed.

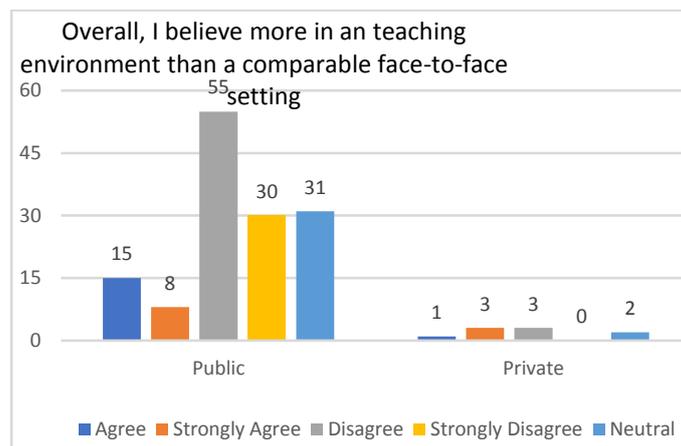


Figure 7: Education among respondents

4. FINDINGS AND DISCUSSION

Implicit with the discovery of traditional face-to-face and online learning platforms, online learning standards are just the same as those in class. There are no differences in educational effectiveness for distance learners, with effectiveness defined as assessing student performance [7]. This study shows the impact of online delivery on students, and suggests that online learning compared to traditional learning, had a significant positive to traditional face-to-face learning. These results indicate that some students felt that online learning is more challenging than traditional learning. This is due to the capability among less-advantaged populations [8]. For instance, the student with low grade will have a lower motivation to learn independently and live without going online. For online learning to be effective, independent learning and time management skills are crucial to developing by the students' [9][10][11][12]. However, online learning is also a good thing that benefits from both institutional and student perspective in some cases. This is a good strategy for course flexibility and access to higher education [13]. In addition, blended learning, also known as online and facing learning, is an alternative way that can help students since blended learning is not focusing on only one learning platform.

Students can choose what they like and feel much more motivated to learn, leading to effectiveness [14].

5. CONCLUSION

Education in Malaysia is a high priority in this progressive era, as schools and colleges expanded significantly, including online learning. In the year 2020, a global outbreak of Coronavirus had forced the whole world to stay at home and could not go to school or do face-to-face learning. Instead, the online platform is used as the main way for a student to learn from home without meeting the instructor. Research on comparing online and traditional face-to-face learning effectiveness is compelling but has significant limitations. Results show that they are agreed on acquiring skills through online learning, but at the same times faced with issues on facilities such as connectivity. Also, the measurement on effectiveness based on performance and easy learning, resulted disagreement due to preference in traditional face-to-face learning. This shows the readiness among the students on online learning still in low condition in Malaysia. Future research should address how places and connectivity can affect the effectiveness of traditional face-to-face and online learning. Also, examine and propose better online platform that suitable for individual's needs to do online learning (e.g., facility and connectivity). With demonstrated reliability and validity, the majority of research has used standardized measures. For example, comfort within the classroom environment and using the technology. However, needs and reliability are distinct, and each group offers potential advantages and limitations. Thus far, the objective and results of this study are promising, with findings suggesting that the student in Malaysia's University said that traditional learning is more effective.

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