

A Preliminary Study on The Factors Affecting Academic Performance of Foundation Students During Online Learning

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ABSTRACT

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Switching from conventional learning to online learning during COVID-19 pandemic is believed to affect students' academic performance. Therefore, the main objective of this research was to analyze the potential factors affecting students' academic performance during online learning. A sample of 91 foundation students was selected and used for the study using purposive sampling. Four factors were discussed which are lecturer, technology, student and social interaction factor. The data collected using online survey instrument was processed and analyzed using SPSS statistical package. The descriptive findings determined that student factor has significance influence on students' academic performance during online learning. Thus, it can be concluded that students were not ready for an online learning. However, lecturer factor gives a positive impact to the academic performance. The outcome of this research shows that online learning is challenging for the students as they are getting used to conventional learning. However, lecturers are capable to tackle the challenges in the migration of offline to online learning.

Contribution/Originality: This study contributes to facilitate on developing and enhancing an online course in School of Foundation Studies to make it more effective and productive for the learners. We may see a continued increase in the education systems using blended learning or online learning once the COVID-19 issue settled down.

1. Introduction

Starting on 18th March 2020, the federal government of Malaysia had enforced the Movement Control Order (MCO) ([Majlis Keselamatan Negara, 2020](#)) due to the COVID-19 pandemic. This decision has forced many organizations in Malaysia to temporarily close for physical business interaction and to fully utilised the online communication platform technologies. The same goes to the education institution in Malaysia where all educational institutions were instructed to close and to conduct all teaching and learning activities through online platform. The existing pedagogies and practices in the

education system Malaysia making it difficult for the students to adjust to the sudden transition of the teaching and learning process from traditional face to face method to online. Although online learning has expanded rapidly due to its suitability in the last decade (Abe, 2020) and offer flexibility to both students and lecturers (Chirikov et al. 2020), but it is believed to affect students' academic performance. Although students may demonstrate success in face-to-face learning environment, but it is not guarantee to success in an online learning situation (Watkins et al., 2004).

School of Foundation Studies (SFS) in University of Technology Sarawak (UTS), Malaysia offers a one-year foundation program namely Foundation in Science and Foundation in Arts. Foundation programmes offer under SFS consist of two long semesters (14 weeks) and one short semester (7 weeks). Due to the instruction from Higher Education Ministry, SFS has change the teaching and learning process from face-to-face learning to online learning to complete its academic calendar starting from Semester 3, Academic Session 2019/2020. In this stage, 91 final semester foundation students involved. This batch of student had been completing the one-year foundation programme using fully online learning. To conduct a full online learning during due to the sudden COVID-19 pandemic is challenging without facing some obstacles (Al-Kumaim et al., 2021). The obstacles include the administrative issues, academic skills, social interactions, technical skills, learner motivation, time and support for studies, costs and access to the internet and technical problems (Muilenburg & Berge, 2005). Being pioneering institution to entirely adopt online learning within a short period, this research aims to determine the factors that can consequently have an impact and significant on the foundation students' academic performance during online learning.

Therefore, the following research questions need to be addressed:

- i. Does lecturer's factor affect student's academic performance?
- ii. Does technology factor affect student's academic performance?
- iii. Does student's factor affect student's academic performance?
- iv. Does social interaction factor affect student's academic performance?
- v. Which factor that is more perceived in affecting student's academic performance?

2. Literature Review

Based on the reviews from previous studies, several authors have addressed the challenges faced by students that associated with the introduction of online learning. UTS is a new university in Sibu and had been operating for 8 years. Therefore, the COVID-19 pandemic had become a critical time for SFS staff and students to readjust their readiness to tackle the challenges in shifting from face-to-face to online learning. There is evidence that the introduction of electronic learning initiatives has failed because institutions and their constituents were not prepared for the experience (Aydin & Tasci, 2005). Besides, people who are attached to existing face-to-face practices making them difficult to accept the sudden changes.

Teaching is a collaborative process which encompasses interaction by both lecturers and students (Ganyaupfu, 2013). Therefore, lecturer competencies play an important role to ensure the effectiveness of online learning (Kang'ahi et al., 2012). The lecturer competence is considered as a multidimensional construct teaching which encompasses numerous interconnected elements towards transformation of knowledge to students (Akiri & Ugborugbo, 2009). For instance, 88 percent overall variation in student's

academic performance was accounted for by lecturer's subject knowledge, teaching skills, lecturer attendance and lecturer attitude (Muzenda, 2013). During online learning, SFS lecturers have managed to design their virtual classes and deliver their courses that include various tools to enable teaching and learning to be delivered in synchronous and asynchronous modes. All assessment activities including final examination had been changed to continuous assessment to ensure the achievement of course learning outcomes. These includes quiz, progress test and assignments. All these assessments were conducted through online platform such as Edmodo and Google Classroom. Laboratory practical sessions have been replaced with online simulation and laboratory reports had to be submitted online. This situation has appeared as an opportunity for students to consume and lecturers to expand via the flexibility on the delivery and timing of online learning (Kebritchi et al., 2017).

Online learning depends on the technology devices and internet accessibility, without both elements it is difficult for the students and lecturers to implement this teaching method (Adedoyin & Soykan, 2020). This has been confirmed that the accessibility towards internet, software and devices were the important factors for establishing an effective online learning (Rapanta et al., 2020). In Sarawak, almost half of its population lives in rural areas. Thus, students located in rural areas faced the issue of infrastructure and internet accessibility (Andersson, 2008). Poor internet access leads to difficulty for students to attend the online class and participate in the online assessment. Due to poor internet connection, the students will take longer time to download the teaching materials which eventually leads to emotional effects on the students such as boredom and frustration (Anuwar, 2004). This can affect their overall academic performance. It was also recorded that the population in rural area still have issues on computer illiterate (Anuwar, 2004). COVID-19 also affects the family income. Some of the parents lost their job and monthly income. This made them difficult to purchase the internet data due to shortage of money. Some students will have problem with smart device ownership such as computer, laptop or smart phone. Hence, it affects the beginning and execution of online learning among students.

Social factor refers to the limit of interaction among the students. Normally, the students have strong interaction or communication with their classmates to discuss any matters and complete their group assignments. Two-way interaction between the lecturer and students was important for an effective learning process. However, during online learning, the students are physically separate, have no face-to-face interaction and lack of communication between the students and lecturers (Sarvestani et al., 2019). More than 80 percent of students believed that they have lack of interaction with the lecturer and feel isolated during online learning (Abbasi et al., 2020). This may lower the student's motivation to continue with online learning. Motivational concepts contribute to students learning rather than general intelligence (Steinmayr & Spinath, 2009). During online learning, most of the students in SFS prefer to switch off their web cam and less student response to the lecturer during the online class. Lack of face-to-face communication leads to difficulty for lecturers to acknowledge the students' understanding and performance due to no eye contact and difficult to read their body language (Rajhans et al., 2020). Online learning gives students a full control and freedom to complete the semester at their own time from any location with internet access. Therefore, the students need to be more independent as the students need to study with minimum guidance from the lecturer compared to the face-to-face learning.

Findings from the current study revealed that the students were not ready for an online learning experience in the pandemic era. Either students are afraid that they will encounter a lot of challenges by studying online or they think the pandemic era is a period for family deliberations on how to get necessities and not for academics. Other than that, students could already attach to the face-to-face method. Students' unwillingness to adopt the new approach in online learning can result in a failure to implement online learning.

3. Methodology

For this research, a questionnaire is developed. Some items in the factor section have been adapted from [Aboagye et al. \(2020\)](#) and the rest are constructed by researcher. The questionnaire was divided into 6 sections consisting of 36 questions as summarized in the [Table 1](#). The first section comprises questions about general information of the respondent such as gender, age, programme, family income range and residential area. The second section until the fifth section contain questions about independent variables such as lecturer's factor, technology factor, student's factor and social interaction factor. The last section questions are about the dependent variable on academic performance. There are 31 items consists of a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree) apart from the demographic information.

Table 1: Outline of the questionnaire

Section	Subject	Total questions
1	General information	5 items
2	Items contributed by lecturer	5 items
3	Items contributed by technology	6 items
4	Items contributed by student	6 items
5	Items contributed by social interaction	5 items
6	Academic performance	9 items

Each of the items in the questionnaires will be validate using Cronbach's alpha. According to [Hair et al. \(2006\)](#), in determining the reliability of the instrument, a general rule is that the indicators should have a Cronbach's alpha of 0.6 or more. The closer the value to 1 indicates that the instrument is more reliable and shares a high internal consistency.

4. Results

The Cronbach's alpha values obtained in this research range between 0.757 and 0.910. Since the Cronbach's alpha values for all constructs are greater than 0.6, therefore, none of the item is excluded. [Table 2](#) shows that the value of Cronbach's alpha for lecturer's factor, technology factor, student's factor, social interaction factor and academic performance.

Table 2: Reliability analysis ($n = 91$)

Factor	Total questions	Cronbach's Alpha
Lecturer	5 items	0.904
Technology	6 items	0.846
Student	6 items	0.757
Social interaction	5 items	0.886
Academic performance	9 items	0.910

A total of 108 students registered to the foundation programme for May Intake 2020/2021. These group of students completed their foundation programme by using fully online learning. However, only 91 students participated in this survey, yielding a response rate of 84.26%. There were 45.1% of male and 54.9% of female involved in this survey. Most of them fall between ages of 18 to 23 years old. Out of 100%, 56% of the students registered in Foundation in Arts programme and 44% registered in Foundation in Science programme. Majority of the students came from M40 family background which is 50.5%, 48.4% came from B40 family background and 1.1% came from T20 family background. Most of the students are staying in town area which is 83.5%, 14.3% staying in sub-urban area and 2.2% staying in rural area.

Based on Table 3, both male and female students believed that student factor as the main factor that affect the academic performance during online learning. To achieve a good academic result during online learning, the students believed that they must attend the lesson regularly and pay proper attention in order to understand the lesson. The students need to have a basic knowledge in IT skills to increase their motivation to learn in the new environment. At the same time, both male and female students agreed that lecturer factor has contributed to the achievement of students during online learning. The results showed that lecturers in SFS able to design and provide a comprehensive and efficient course and assessment that are incorporating course goals and learning objectives that can be used during online learning.

Table 3: Results of Mean Analysis based on demographics

	Factors			
	Lecturer	Technology	Student	Social interaction
Male	3.707	3.824	4.098	4.000
Female	3.733	3.960	4.212	3.883
B40	3.667	3.868	4.045	3.822
(< RM4849)				
M40	3.757	3.922	4.261	4.044
(RM4850- RM10959)				
T20	4.200	4.500	4.000	4.200
(>RM10960)				
Town	3.746	3.929	4.192	3.954
Sub-urban	3.589	3.769	4.015	3.821
Rural area	3.600	3.667	3.900	4.000

The students from B40 and M40 groups stated that student factor as the main factor that affect the academic performance. This was contradicted with researcher's assumption earlier that technology factor may affect the academic performance for these two groups of family income. As mentioned by previous studies, during COVID-19 some parents lost their job and monthly income. Thus, spending money on learning equipment such as laptops and internet package are a burden for the B40 and M40 groups. According to Hawati and Jarud (2020), the low-income family with financial issues should save the money for daily food. However, the government launched *Bantuan Prihatin Rakyat* (BPR) payments to eligible households and individuals that were going to receive RM500. Parents that contributed to Employees' Provident Fund (EPF) under the age of 55 were able to withdraw a maximum of RM 5000 under i-Citra and a maximum of RM

6000 under i-Lestari. Besides, the higher learning institution students also received RM 200 each during the COVID-19 pandemic. The effort from the telecommunication companies provided free internet data and the government allocated RM 400 million to upgrade the broadband network (Ain Umaira et al., 2020). The free 1GB daily data provided by the telecommunication companies can help to reduce the students burden to participate in the online learning. All these financial aids provided by the government and telecommunication companies had reduced the burden of parents and students. Therefore, the students from B40 and M40 stated that they did not have major problem in term of technology aspect.

Table 3 showed that both students from town and sub-urban area agreed that student factor affect their academic performance. It was due to the students easy to feel distracted during the online learning process as there were other types of entertainment such as mobile phones games that will distract their attention. However, for students who are staying in the rural area, they did not expose to much entertainment or temptation. Therefore, they able to focus and pay attention during the online learning. The students from the rural area stated that the social interaction factor can be one of the factors that affected their academic performance. The students might feel that they were not able to participate actively during the online class or assignment discussion due to low self-confidence. The teaching and learning in SFS were fully conducted in English, therefore, the students who were staying in the rural areas may have problem to communicate in English effectively with their lecturers and classmates.

From Table 4, it is obvious that student factor with mean 4.164 is the important factor that affected academic performance of a student during the online learning followed by social interaction factor, technology factor and lecturer factor. To determine the student's academic performance during online learning, the mean and standard deviation of 10 items measured shown in Table 5.

Table 4: Results of Mean Analysis for all factors

Factor	Mean	Standard deviation
Lecturer	3.722	0.594
Technology	3.899	0.719
Student	4.164	0.639
Social interaction	3.936	0.755

Table 5: Academic performance

Items measuring overall academic performance of students	Mean	Standard deviation
I can do all my assignments productively.	4.109	0.849
I can organize my time to do everything the lecturers ask me to do.	4.054	0.835
I have acquired more knowledge.	4.030	0.795
I have improved my communication skills.	3.791	0.863
My teamwork skills have improved.	4.088	0.837
I have improved my creativity.	3.923	0.819
I feel that the learning content is sufficient to replace face-to-face class.	3.451	0.934
I feel that the virtual assessment such as assignments and tests is sufficient to replace face-to-face class.	3.604	1.021

I am satisfied with the results that I have obtained by taking virtual classes.	3.912	0.902
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The results showed that the mean of more than 4.00 out of possible 5.00 were from item 1, 2, 3 and 5. The items showed that the students were not ready for online learning and the environment was not conducive for them. The students easily get distracted when they were at home. Therefore, the students were having difficulty to produce a good quality of assignment. Since the students were not able to meet their classmates physically, therefore their teamwork skills were not improved. During the online learning, not all students switch on their camera and less interaction happened between lecturers and students. Hence, the students were having a difficult time to understand the lesson delivered by lecturers. Some students were working as a part-timer during online learning which made them not have enough time to complete the task assigned by lecturers.

5. Conclusion

In conclusion, online learning provides some benefits to the students in term of flexibility and cost reduction in education. However, there are a lot of challenges that should have been addressed. One of the factors is student factor. To students, online learning is something new and students were not prepared to study online, leads to demotivation and unwillingness to learn. In addition, the results indicated that lecturer's capability is the least important factor. Even though it is a sudden transition from conventional learning to online learning, lecturers can prepare the suitable teaching and learning materials that can be used for online learning. They have spent their time to design the materials and at the same time to maintain the quality of the teaching and learning materials. Besides, the students also mentioned in the teaching evaluation assessment that they received a good assistant from lecturers and lecturers can explain the lessons well to them like how the physical class should be conducted.

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Conflict of Interests

The authors declare no conflict of Interest.

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