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Student Attitude and Readiness Towards Virtual Learning for Practical Classes of Building Construction Program

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Abstract: This study aims to identify attitudes, readiness and identify attitudes and readiness based on students' gender differences in virtual practical learning. The study involved 117 students ranging from Cohort 9 to Cohort 13 students. A pilot study was conducted on 30 students to determine the validity and reliability of the research instruments and the results of the pilot study, the alpha Cronbach test value in section B (0.859) and section C (0.875) were at a high level and could be used for actual study. This study is in the form of survey using quantitative approach through instrument questionnaire. Average mean score value for student attitude is at moderate level towards virtual practical learning. Meanwhile, the mean score average for student readiness is at a high level. From a different point of view, there are significant differences in attitudes based on student gender while for readiness there is no significant difference based on student gender aspect. This study suggests that the faculty and lecturers are sensitive to the factors that influence the attitude and readiness of students of the Building Construction program and to try to improve the problems that are the drivers of practical learning issues in virtual.

Keywords: Attitude, Readiness, Virtual Learning, Practical Class

1. Introduction

Nowadays, there are many learning methods that have been innovated and introduced to educators and students. The learning methods that can be used by students are through radio, mobile phone, television, computer, and internet. Virtual learning is a virtual class that allows teachers and students to communicate with each other and share class information, learning materials, and assignments (Saiful et. al., 2014). Students can download all information about their assignments or reading materials supplied by the teacher through the designated website. With the wide spread of mobile technology, from mobile phones and tablets that support to social media communication systems and teaching makes virtual teaching more effective (Azlina et. al., 2017). Thus, based on previous research findings, it is proven that virtual learning is effective.

1.1 Objective of Study

Each study has its own purpose to make the process of achieving the goal more systematic and organized. Therefore, the main objectives of conducting this study are:

i)   To identify the level of attitude of students towards virtual practical classes for students of building construction programs at FPTV

ii)   To identify the level of students' readiness for virtual practical classes for building construction program students at FPTV

iii)   To identify the attitudes and readiness of students to the difference in gender of building construction programs at FPTV

1.2 Research Background

Virtual learning is familiar in the world of education. This is because conventional methods of teaching and learning are not able to meet and achieve the level of education that has reached the 21st century. Since March 18, 2020, Malaysia has implemented the Movement Control Order for three months and within that time, there is no face-to-face teaching and learning is allowed. This has been causing the teaching and learning processes must be done virtually for a long period of time. For theoretical classes it does not have a great impact on lecturers or students but when it involves practical classes, all projects, or assignments that students must perform will be delayed. When virtual learning for practical classes occurs continuously, lecturers have to change product development to another method for example students have to produce simulation videos based on the pre-defined learning objectives.

This is evident in the Zaqiah (2020) which states that virtual learning platforms nowadays play more role as repository for learning materials in the form of power point slides, PDF format notes and quiz questions and tutorials. In terms of student attitude, what we know there are various challenges if they do virtual learning and additional learning occurs in their homes. This is evident when accordingto Zawiah (2020), students are also seen to have not been able to fully adapt in virtual classes. Virtual learning is different situation between in the classroom. However, if teachers use interesting teaching techniques and styles, students will be starting to show interest in their learning process. Virtual learning will also not make some students disciplined because they learned according to their time (Nor Musfirah, 2021). This is because, when virtual learning occurs, it will not make a student to get up early.Therefore, as for online classes in the morning they may miss out the class and causing students to missout on understanding the topics taught by lecturers.

In terms of student readiness for practical classes, students' time will be more flexible for them to explore the videos that have been provided by the teacher. According to Noraiysah (2018), students can also choose their time, content, and their own learning way. Referring to this study, if students lack understanding in theoretical learning, they can review through videos that have been uploaded by teachers on the website. In addition, in vocational education, the concept of virtual learning is now widely used for teaching and learning. However, because the nature of teaching in vocational field requires training and experimentation, they require laboratory facilities to provide effective skills and direct experience becomes difficult to implement (Potkonjak, 2016).

1.3 Problem Statement

Based on the background of the problems that have been discussed, there are several issues and problems that students face if this virtual learning continues for a longer period. This is because, not all students are able to give full commitment to virtual learning. First, the students may face time constraints for example they will be burdened and chased by the deadlines set by the teacher.

In addition, students should also always be prepared to do virtual learning for practical classes. Current face-to-face practical learning is not the same as virtual practical learning. Practical learning is knowledge acquired by students and applied through hands-on activities which in turn trigger minds- on

thinking. When learning takes place virtually, then students will do practical work using simulation videos only based on resources obtained from the Internet. Students will acquire and get ideas through the findings from the Internet. The Internet has now become the easiest and most popular method for students to use to find various information related to education, especially about learning such as finding additional reference notes, past year questions, sharing views and asking opinions about an assignment or exercise through social spaces on the Internet.

Therefore, the researcher would like to see the level of attitude and readiness of students towards virtual practical classes and attitude and readiness towards gender differences of students for the Faculty of Technical and Vocational Education Building Construction Program.

1.4 Limitations of Study

The limit time for this study is 14 weeks which every process already distributes according to a specific time. Every process is already planned at the beginning through the Gantt Chart. But there are some constraints while doing the research to get the best result and finished the study because of Malaysia is under Movement Control Order (MCO) because of Covid-19. This study is only limited to Building Construction students in the Faculty of Technical and Vocational Education.

2. Methodology

The research design used in this study is a quantitative study using survey method by using a questionnaire. It was conducted on a sample of a study identified to obtain the necessary data. A pilot study was conducted on 30 students to determine the validity and reliability of the research instruments and the results of the pilot study, the alpha Cronbach test value in section B (0.859) which is to identify attitudes based on students' gender differences in virtual practical learning and in section C (0.875) to identify readiness based on students' gender differences in virtual practical learning were at a high level and could be used for actual study. Statistical Package for Social Science (SPSS) version 23.0 be used to analyze the data. This software is used to facilitate the work of data analysis is carried out and translate the data into a more detailed and structured form of information.

2.1 Flowchart of This Study

Refer to figure 1, the flowchart of the study is intended as a guide to the researcher to produce an organized and more systematic study. At the initial stage of the study, before the researcher selects and determines the appropriate research title, a literacy survey will be conducted first to find out and identify current problems or issues that occur. The literacy survey is conducted to clarify any issues that will be raised in a study. In terms of research methodology, a design was designed to facilitate the researcher. Next, after the research instrument, the questionnaire, was developed, a pilot study was conducted to determine the validity and reliability of each item in the questionnaire. If the results of the Cronbach's Alpha analysis that have been obtained have a value of more than 0.6, a questionnaire was distributed to the respondents of the study that has been determined by the researcher. Meanwhile, if the Cronbach's Alpha value is less than 0.6, the questionnaire needs to be improved.
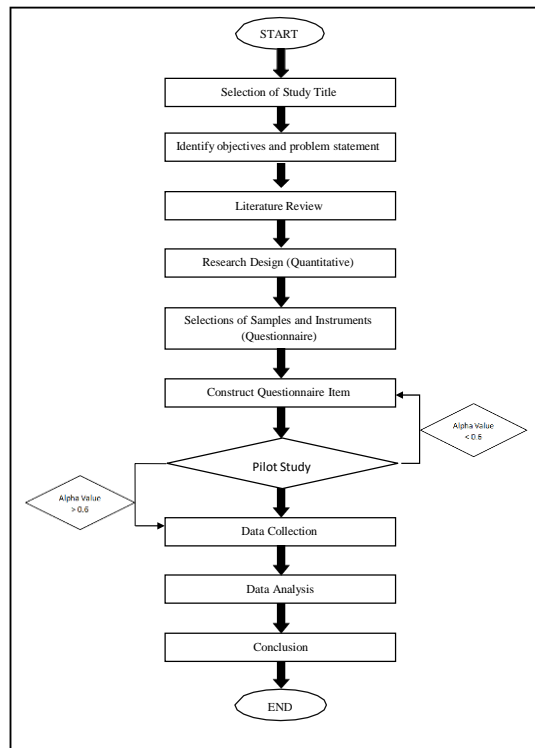
Figure 1: Flowchart in Research

2.2 Research Instrument

Questionnaire is an instrument for collecting information from respondents and data collection consisting of a series of questions and other motivations (Abawi, 2013). There are three sections in the questionnaire, which are sections A, B, and C. Section A consists of student demographic information. Section B consists of questions about the attitudes of students in virtual learning for practical classes. Section C covers students' readiness to learn virtually for practical classes. For section B and C, the researcher was using five-point Likert scale. Table 1 shows the five-point Likert scale.

Table 1: Five-Point Likert Scale

Scale	Ratings
1	Strongly Disagree
2	Disagree
3	Less Agreed
4	Agree
5	Strongly Agree

3. **Results and Discussion**

Respondents that involved in this study were student from first year until final year students, major in Building Construction programs, University Tun Hussein Onn Malaysia. There are 117 students that had been involved in this study.

3.1 Analysis of Respondents' Demographic Data

The researcher only analyzes the data of gender in demographic data because based on research question, the researcher wants to find out the difference between student's gender based on virtual learning for practical classes.

Table 2: Frequency and percentage of respondents by gender

Gender	Frequency	Percentage (%)
Male	40	34.2
Female	77	65.8

Based on the table 2, result showed the number of male students is 40 (34.2%) and the number of female students is 77 (65.8%).

3.2 Analysis of Student Attitude Towards Virtual Practical Learning

A total of 10 questions were developed to evaluate students' attitude towards virtual practical learning. Table 3 presents the results of this section.

Table 3: Students' attitude towards virtual practical learning

No	Item	Mean Score	Standard Deviation	Level
B1	I feel confident that I can do some practical work during virtual learning.	3.47	1.119	Medium
B2	I am more independent to learn practical tasks such as simulating instead of workshop projects provided by lecturers without relying entirely on them.	3.15	1.119	Medium
B3	I can collaborate on practical assignments with classmates.	4.14	1.113	High
B4	I am confident of getting referrals through the internet to complete practical tasks.	3.86	1.041	High
B5	I like to use a designated app to download hands-on learning notes.	3.87	1.063	High
B6	I like the interesting display of virtual learning applications for example display via YouTube, slides on Google Drive and simulation videos provided by lecturers.	3.95	1.007	High
B7	I prefer to do virtual practical classes with friends.	2.80	1.693	Medium
B8	I am comfortable using virtual learning mediums when doing practical tasks.	3.15	1.234	Medium

B9	I accomplished assignments quickly even in virtual practical classes.	3.43	1.093	Medium
B10	I am more confident that virtual learning for practical classes can improve the quality of my learning.	2.84	1.224	Medium

According to the table 3, the highest mean value for item B3 is related to student collaboration in practical tasks with classmates with a mean value of 4.14 and the standard deviation is 1.113. While item B6 has the second highest mean of 3.95 and the standard deviation is 1.007. It is related to the display of interesting virtual learning applications as simulated video provided by lecturers.

3.3 Analysis of Students' Readiness Towards Virtual Practical Learning

A total of 10 items were developed to evaluate students' readiness for virtual practical learning. Table 4 presents the data obtained for this section.

Table 4: Students' readiness for virtual practical learning

No	Item	Mean Score	Standard Deviation	Level
C1	I make sure all practical learning needs are. prepared before class begins.	3.91	0.857	High
C2	I am more actively doing practical classroom learning virtually.	2.49	1.400	Medium
C3	I can follow virtual practical teaching and learning methods based on simulated use and have to do prototypes as a substitute to product development.	3.68	0.981	High
C4	I can perform practical tasks with my colleagues according to the division of tasks set by the lecturers.	3.84	0.956	High
C5	I am confident that I am proficient in using applications set by lecturers before virtual practical learning is done.	3.76	1.056	High
C6	I was able to complete practical work in groups within the given time.	4.04	0.932	High
C7	Virtual learning can produce more innovative students to find ideas for completing an assignment.	3.09	1.141	Medium
C8	I was able to download practical learning materials over the Internet for classroom use.	4.00	0.947	High

C9	I was able to adapt to the virtual practical learning environment.	3.73	1.047	High
C10	I can follow the instructions given by the lecturer during virtual practical learning.	3.92	0.993	High

Based on the summary of the results of the analysis of students' readiness for virtual practical learning as shown in Table 4, the responses had showed high level for the overall result. The highest mean value is item C6 which is the mean value of 4.04, and the standard deviation value is 0.932. While the lowest mean value is item C2, 2.49 and the standard deviation is 1.400.

3.4 Analysis of Attitude Level Based on Student Gender Differences Against Virtual Practical Classes

This section looks at significant differences between students' attitudes based on gender differences in virtual practical learning. This section is to answer the following hypothesis. Table 5 presents the results of this section.

Table 5: Student attitudes based on gender differences in virtual practical learning

Variable	No.	Mean Score	Standard Deviation	T-value	Sig (2-tailed)
Male	40	3.07	0.679	-2.405	0.016
Female	77	3.40	0.709		

Ho: There was no a significant difference between students' attitudes based on gender differences in virtual practical learning

H1: There was a significant difference between students' attitudes based on gender differences invirtual practical learning

Based on table 3.4, it was found that the t-value for the difference between students' attitudes based on gender differences on virtual practical learning was t = -2.405 and the overall significant level value p = 0.016. This significant level is smaller than 0.05 (p < 0.05). The null hypothesis (Ho) is rejected because there is a significant difference between students' attitudes based on gender differences towards virtual practical learning. The mean score of male students (mean = 3.07) was smaller than female students (mean = 3.40). Means that the attitude levels of male and female students slightly different but still significant.

3.5 Analysis of Students' Readiness Level Based on Students' Gender Differences on Virtual Learning for Practical Classes

This section looks at significant differences between readiness based on students' gender differences in virtual learning for practical classes. This section is to answer the following hypothesis. Table 6 presents the results of the findings for this section.

Table 6: Student readiness based on gender differences in virtual practical learning

Variable	No.	Mean Score	Standard Variation	T-value	Sig (2-tailed)
Male	40	3.90	0.513	0.846	0.400

Female	77	3.78	0.781

Ho: There is no significant difference between student readiness based on gender differences in virtual practical learning

H1: There is a significant difference between student readiness based on gender differences in virtual practical learning

Based on table 6, it was found that the t-value for the difference between students' readiness based on gender differences on virtual practical learning was t = 0.846 and the overall significant level value p = 0.400. This significant level is greater than 0.05 (p > 0.05). The null hypothesis (Ho) cannot be rejected that there was no significant difference between students' readiness based on gender differences in virtual practical learning. The mean score of male student readiness (mean = 3.90) is greater than female student (mean = 3.78). This means that the readiness levels of male and female students are the same.

3.5 Discussions

Based on the analysis that has been done, the results from the study have shown that students have a less active attitude during virtual practical learning because they have the lowest mean score but still in a moderate position. This can be seen that students are unable to show a good attitude towards practical learning virtually due to several factors and lecturers or teachers may be able to change the way of teaching to make it more interesting. According to the study Hazlina Halim et al. (2017), suggested that lecturers should use various teaching methods in class to attract and motivate students to stay focused in practical learning classes. Next, related to the attitudes of students that involve cooperation in performing the assignments given by the lecturer. The results of descriptive analysis show that students are at the level of the highest mean score value and it shows that students are able to give full commitment while doing group assignments in virtual. This can be evidenced by virtual learning using smartphones further expanding access to information and collaborative skills through opportunities to collaborate and find solutions that are creative and critical in nature (Lee et. Al., 2016). This study is also supported by Syed and Melor (2019), group work is also one of the approaches to promote cooperative and collaborative learning among students. According to Zawiah (2020) as well, this group of students has not been able to fully adapt to virtual learning because the atmosphere is different from normal classes.

Meanwhile, for the second question is about students' readiness is two items that have a low mean score which is related to students' confidence in performing practical tasks and students cannot follow simulation-based teaching and learning. Based on the findings of the analysis conducted by Hoda (2017), this study has revealed that, virtual learning has been able to increase the competitiveness and confidence of students to complete each assignment for practical purposes. In addition, students are also less confident in doing practical assignments during virtual practical learning because there are students who tend to use traditional methods that is face-to-face because it is still relevant (Razali et. Al., 2016) as well as concerns about computer use (Awofala, Akinoso & Fatade 2017). However, there are a few students who prefer to do traditional learning compared to technology-assisted learning. Learning is traditionally better because teachers exist in front of them, and students need teacher guidance (Akugizibwe & Ahn, 2020). Teacher guidance is needed before an activity is carried out (Nurul Shida et. Al., 2019). Students want to know the feedback in more detail in case of mistakes and get guidance directly from the teacher.

Based on the analysis of the study conducted by the results from the analysis made using T-test, there is significant difference between the attitudes of male and female students towards virtual learning for practical classes. This is supported based on the results of Irma et. al., (2021) attitudes of male and female students are the same, which is to be positive even though the percentage shows a slight

difference between male and female students. The level of significance shown in the analysis table of the findings of the study proves that the value is smaller than 0.05 that is the level of significance for

students' attitudes is 0.016. As for the mean score value, the mean score value of male students is lower than female students. This indicates that the students exhibit a moderate attitude towards this virtual practical learning. Teachers need to improve in terms of the use of teaching materials that create motivation, which can engage students and at the same time can produce a better attitude. For example, teachers can use virtual simulations to develop behaviors and organize classes toreinforce students 'ability stereotypes to improve their abilities. This requires the ability of students to understand what needs to be practiced (Umi, 2020).

Besides that, for the fourth study question, a reviewer wanted to identify the level of readiness of students based on gender differences in virtual practical learning. The standard deviation value for the whole availability item indicates that there is no significant difference between male and female students in virtual practical learning. This is because the standard deviation value obtained from the T-Test clearly indicates the standard deviation value exceeds 0.5 and that indicates the null hypothesis accepted. The mean score value from the results of the study also showed that both male and female students had a high mean score value. This means that male and female students do not have significantdifferences in terms of readiness. This is clearly supported by the findings of a study from Norasyikin Osman and Mohd Isa Hamzah (2016) who have also reported that there is no difference in the readinessof students to follow virtual learning based on gender. Students show a high readiness forvirtual practical learning.

4. Conclusion

Overall, each of the objectives of the study stated in this study is achieved by the findings of the study that have been described. Based on the findings of this study found that the students of the Building Construction program are still able to demonstrate a moderate attitude in undergoing virtual learning for practical classes and are still at an alarming level. In addition, the students' readiness for the Building Construction program can also be demonstrated through the study findings that have beenstudied by researchers and found that students are still at the ready level to face this virtual practical learning process. The third objective in this study can be achieved because there is a significant difference between the differences in attitude and readiness of students towards practical learning basedon gender.

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