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The Challenges of Remote E-Assessments During Covid-19 Outbreaks Among Undergraduate Engineering Programs

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ABSTRACTS

This study aims to identify the challenges faced by undergraduate students with remote e-assessments during Covid-19 outbreaks. The study was guided by the following specific objectives: to identify the level of students' challenges to remote e-assessments in four major areas which are internet connectivity, academic integrity, disturbance in-home learning, and overflow of assignments, to identify significant differences between student's location and family income category with four major areas of challenges to remote e-assessments. To achieve the objectives, students from one of the undergraduate programs at University Teknologi Malaysia have been chosen as the sample size. This study was designed to follow a single approach which is quantitative methods by means questionnaire surveys were distributed among the students and the data gathered was analyzed using SPSS software. The results from the analysis indicated that students facing the highest level of challenges to remote e-assessments during Covid-19 outbreaks are the overflow of assignments. The result from the study also showed that there is a significant difference between students' family income and four major challenges to remote e-assessments. The recommendations are that organizations, especially at the university level should try to give great emphasis on e-assessments activities to develop those smooth practices to a great extent since the practice may eventually replace the traditional examination.

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1. INTRODUCTION

Assessment is a key factor in enhancing the overall quality of teaching and learning in higher education. What and how students learn depends to a major extent on how they think they will be assessed (Kamal, 2020). E-assessment improved the evaluation of the outcomes of learners and allowed them to receive immediate and direct feedback (Alruwais, 2018). It is crucial to build a framework to assess students, which takes into account the educational goals and helps students to improve their skills which will be useful for society long-term. There are massive challenges in assessing students remotely during the Covid-19 phase. According to Adedoyin (2020), there are four major challenges related to the e-assessments; internet connectivity, academic integrity, disturbance in-home learning, and overflow of assignments. Similarly, Arora (2020) reported network issues, a lack of training, a lack of awareness, a lack of interest, less attendance, a lack of personal touch, and a lack of interaction as major challenges faced by teachers in the online teaching-learning process. Moreover, Kaup (2020) stated challenges related to technology, training, and student engagement in sustaining academics during the Covid-19 pandemic.

COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems, and the world of work. The economic and social disruption caused by the pandemic is devastating. Millions of people are at risk of falling into extreme poverty, while the number of undernourished people is increasing each day. Practically, Malaysia suffered an RM63 bn loss since the MCO came into force on 18 March 2020. Thus, the Covid-19 has caused significant challenges to the world including the tertiary education sector. Online learning has brought significant challenges to students. Four major challenges affect tertiary education which is closed down institutions, the teaching and learning process, students' and students' assessments. Shifting to online learning also poses assessment hurdles. Although a lot of assignments can be completed at home, examinations contribute a sizable component of the overall assessment. Normally, tests are usually done in setting rooms or halls. However, it is impossible to gather hundreds of students to sit together for their exams due to the risk of Covid-19. According to Elzainy (2020), converting the final exams to coursework has increased mental stress among lecturers and students in Malaysia. It is undeniable that online learning is considered the best solution to ensure continuity in learning in the era of what has been coined the "new norm". However, there are some drawbacks such as lack of human contact such as sensing students' incomprehension via facial expressions, cracking small jokes to enlighten mood, student engagement, and interaction which can be done more effectively in traditional face-to-face learning. This change has caused massive disruption in the teaching and learning process and directly affected the assessment processes as well. If this new norm is prolonged, lecturers and students will have mental and physical exhaustion. This could be a disadvantage in the future learning process for Malaysia.

2. METHODS

Following consideration of the study's objective, research questions, and literature reviews on current issues, internal and external factors influencing the challenges of remote e-assessments during Covid-19 outbreaks, it is best to use a single method of data collection which is the qualitative method. The survey questions were designed which are adapted and adopted from existing research related to education in Covid-19. It is a self-administered survey conducted within the time stands via google forms. The sample size is from those individuals who are students from Bachelor of Mechanical Engineering Precision, UTM for session 2020/2021. For the stated session, there are 220 students registered for the programs

but the sample size only included 160 students for the study. The sampling is determined by Krejci and Morgan. A questionnaire to examine students' challenges of remote e-assessments during Covid-19 outbreaks is designed and consists of 40 statements from across the four themes which are infrastructure connectivity, academic integrity, at-home distractions, and overflow of assignments. Data will be collected on a five-point Likert scale ranging from one (strongly disagree) to five (strongly agree) to measure participants' perceptions of each question. All the gathered data are analyzed using SPSS. The conceptual framework for the study is in **Figure 1**.

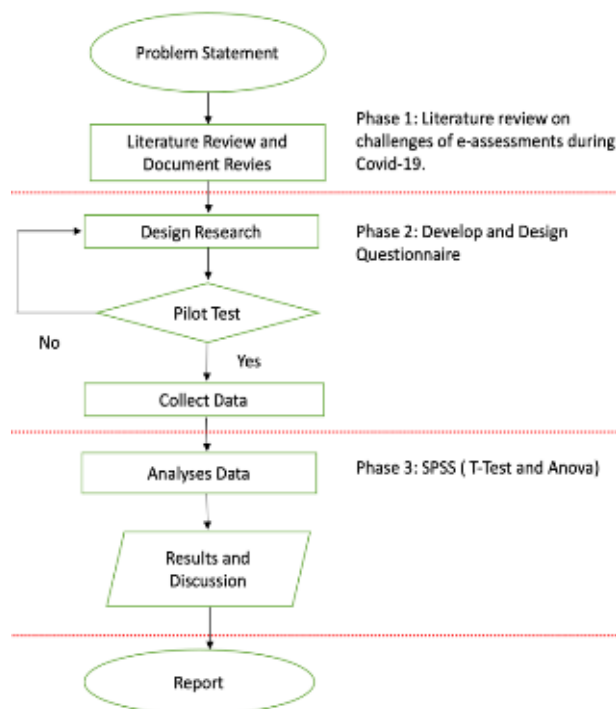


Figure 1. The flow of operating frameworks used to achieve a defined goal.

The validity of the data must be evaluated in the following ways: (i) The first of which is the problem statement, works of literature, and documents review; (ii) The second step consists of developing and designing questionnaires; (iii) The last stage entails analysis, results, and discussion of the data.

3. RESULTS AND DISCUSSION

The result is based on the quantitative analysis: (i) Overflow of assignments is the highest level of challenge to remote e-assessments indicated by the study. The overall mean score is 4.10 which showed that respondents agree with the statements and challenges. The respondents agreed that they have had study-life balance issues ever since online assessments begins. The amount of the assignments given was increased compared to before the pandemic. One of the factors of the issues because most of the lecturers change in-lab assessments to the assignments; (ii) Across all themes, it concludes that there is no significant difference in score between location and challenges to remote e-assessments during Covid-19 outbreaks. From the data-driven, the majority of the respondents are from urban areas. Hence, it is the reason why the results reflected that way. The analysis result might be different if the students' locations are equal to rural and urban areas. However, even though there is no significant difference in scores between location and all major challenges, the students are still having difficulties, especially with internet connectivity even in the urban area. As such, it can be concluded that internet infrastructure in Malaysia needs to be

improved at least on the same par as other leading countries with better internet connections; and (iii) Descriptive analysis for the score of student's income category and four major themes depicted there is significantly different the score. As indicated from the result, overall respondents were from B40 families. On that important note, students have some challenges regarding a sufficient data pack to utilize. Even though the government has provided some free quotas to students, it appears that the allocation is insufficient. Some of the respondents used to experience no internet access due to bill payments. Besides, most of them are needed to share their devices with other family members to perform online learning or e-assessments. Hence, this is one of the reasons why students have struggled in their academics since the advent of online learning. With limited infrastructure, our generation's future is on jeopardized if the government or any other relevant organization does not develop a proper plan. Even though the government is now slowly resuming the physical class, no one could be sure that there are no more such situations that will ever happen in the future.

4. CONCLUSION

The study aimed to identify the level of challenges and significant different scores between location and family's income across four themes of challenges to remote e-assessments during Covid-19 outbreaks. Their experience was explored in terms of infrastructure connectivity, academic integrity, disturbance in-home learning, and overflow of assignments. To plan and execute better online assessments in the future, it is necessary for the government and particularly, university management to have a piece of good knowledge and information about the functioning plans and specific models for online learning and e-assessment. The findings of this research which explore the views and experiences of students from the UTM can be used for management decisions related to investment for plans.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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