



Visualisation of Undergraduate Architectural Research Activities through MYDISSERTPLANNER

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Abstract

This research is a continuous process that requires virtuous planning and monitoring of the activities. A formal planning application is inadequate to assist them in managing all research activities to ensure the task will complete within the time frame given. The aim is to visualise the undergraduate research activities through the use of mobile applications, namely MYDISSERTPLANNER. The result shows that most students have problems completing the research within the timeframe. Therefore, the development of MYDISSERTPLANNER through smartphone apps is seen to give benefit and bring innovative features to students and academicians in ensuring the quality of research accomplished.

Keywords: Undergraduate students, Mobile Application, MYDISSERTPLANNER, Research Activities

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1.0 Introduction

The use of digital technology such as mobile applications in higher education has attracted much interest in recent years. The emergence of mobile application apps offers academicians a new platform to engage and monitor students, including research activities. According to Zoe et al. (2018), mobile learning represented a ubiquitous, wireless, highly portable technology and is endowed with multimedia capabilities bringing a new dimension to curriculum delivery. In most higher education institutions, research activities are a prerequisite for completing the graduate study process. Research is vital since it contributes to awareness and products being created, which can help to improve current issues related to the area of study. For undergraduate students, they must research relevant issues to their courses which are commonly known as dissertations. In reality, higher education has developed several courses like these as one of the curricula to enhance students' research skills. Analysis needs a high level of expertise, experience and analytical thinking to achieve the best results. Katkin (2003) emphasised that improving research skills is constantly considered a "core concept" in undergraduate programmes. Previous studies have stressed the importance of study and supervision to embed study skills among undergraduates (Kuh, 2008, Shanahan et al., 2015, Feldon et al., 2015; Garg & Passey, 2018).

1.1 Problem Statement

Nevertheless, the problem is about the effectiveness of students in managing their research activities even though they have supervisors throughout the process due to a lack of skill and knowledge in managing the research activities. This problem arises among the students

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and when the lecturer supervises a large number of students. Currently, in most higher education institutions, managing research activities involves three parties: students, supervisors and the Coordinator of the dissertation. Students and supervisors need to interact and communicate in the monitoring process, commonly by using log books to record all the activities and discussions carried out. However, there are many weaknesses to this method, such as the difficulty of the supervisor in monitoring students' progress and students not alert to the date and milestones that need to be accomplished. Manathunga (2007) mentioned a lack of a standardised framework for undergraduate students to help them prepare for their study journey and improper time management. This aligns with Affero (2011), indicate this will leads to inadequate planning for future activities leading to delays in the delivery of a study. This phenomenon is not an isolated case but has been perceived in other universities in the United Kingdom (Bouki 2007). Hence, there is little applied research into how these tools are being used to support teaching and learning, with few descriptions of how mobile computing devices and social media are used by university students (Gikas & Grant, 2013).

According to Uzomaka and Olayiwola (2012), only 60% of students complete their research journey within the stipulated time. There is a deficiency in the literature regarding the supervision of research activities. The most common method of supervision and monitoring research activities is in which one student will engage with one supervisor and interact face-to-face. Nevertheless, Karabatzaki et al. (2003) noted that this model could not accommodate current global changes. The Digital Information Management system model was introduced by Champ (1983) which aimed at helping researchers, students, support staff and supervisors perform research-related activities online. While Champ developed the Research Supervision system model (1982), it provided a comprehensive set of practices for tracking students activities and milestones.

Technology nowadays has encouraged both the students and supervisor to keep in touch, manage their activities, operate effectively despite the significant barriers (Abu Bakar et al. 2001). The Multi-Model for pedagogical E-Supervision (MMPE-S) was developed by Chiacha and Usmanu, which contains three components; for users (students, staff and supervisor), primary factors and E-supervision. The E-monitoring application between students, staff and supervisor will ensure the effectiveness of students' progress and supervision tasks.

Thus, an effective research monitoring system is required to ease communications among all parties involved. A survey has been conducted to gather information on obstacles occurring during the supervision and monitoring of research activities. Based on this survey, a Mobile application, namely MYDISSERTPLANNER, was produced, which incorporates the guidelines for planning and monitoring research activities. The detailed approach and steps of these mobile application apps will clearly explain this paper and the initial prototype that has been visualising.

2.0 Literature Review

2.1 Existing Mobile Applications of Research Activities

The core of mobile learning is about accessing information and knowledge anywhere as the students can carry it everywhere with them and regard it as friendly and personal (Gikas and Michael, 2013). Mobile communication is slowly gaining space in institutional education around the globe. Applications (apps) and mobile learnings are recent in an education system that reassesses how the trend of learning takes place through a smartphone (Hans and Harsha, 2018). Thus, a review and analysis of the current application were achieved via a download application on the <https://play.google.com/store/apps> website. Keywords such as 'PhD Planner' 'Master Planner' 'Dissertation Planner' 'Research Planner' 'Thesis Planner' were used to search the Google Play Store for similar applications. A total of 10 applications has been acknowledged. This research found five applications related to study planner topics after observed ten vital rules to stimulate a system designer while designing mobile learning. According to Viberg (2015), as cited by Hans and Harsha (2018), the rules are choice of technology, roles, cost, equipment management, collaborative services or application and security issue, support for teachers, system usability and administrative. Hence, in this paper, five applications related to the dissertation subject were described and discussed discreetly.

Table 1. Five Current Applications related to Study Planner

An example of a column heading	Description
PhD Planner	This application was planned to get PhD thesis completed as organising organise. The resource covers current and future projects, achievements, surveys, conferences, seminars, and vacations. With just two users, the star rating is 5.
My Study Life - School Planner	My Study Life is a fitting planner for students and teachers designed for research task management. It helps users store the timetables, assignments, and exams of classes that combine academic life activities. With 46,047 users, the rating is 4.3 Stars.
Smart Study Plan	The Smart Study Plan is a robust training plan designed to ensure successful research. All courses should be added to this application, and a study plan will be generated by the application and will remind the student when and what to study. With 319 users, the star rating is 4.5.
Studies Planner	This application helps students to arrange an easy timetable for the subject and keep track of the research. Students should be able to store exam scores and keep track of their grades. With 121 users, the application is ranked 4.0 stars.
Study Manager: Smart Student	The study manager will assist students in arranging details about the course, notes, tasks, quizzes, homework, classes and exams. Users can pick ringer mode to mark the task as complete or not complete. With 310 users, the application is rated 3.7 stars.

(Source: Authors)

Four out of five current schedulers depend on coordinating school research life, such as lectures, assignments and tasks. Just one specification explicitly describes the work process associated with PhD assignments and events. It is discovered that there is no existing study planner specifically created to manage the activities of undergraduate students. In addition, the undergraduate student has little expertise in conducting the study assignment and writing the thesis as prescribed by the university.

3.0 Research Methodology

This research has generally has adopted three phases. First, critically review past literature in order to analyse current mobile research applications. It was done to scrutinise the issue related to smartphone apps used by students at the university. As Justus (2009) mentioned, problem formation begins with the determination of the questions that will guide the literature review. These questions should be influenced significantly by the goal and focus of the review. Second, a preliminary survey was done in Universiti Teknologi MARA (UiTM) to determine the main issue faced by the undergraduate students. A selection of around one hundred and sixty (160) students in the undergraduate program is identified. For collecting samples, stratified random sampling was used. Third, the final research strategy is to visualise the MYDISSERTPLANNER to make it easier for undergraduate students to plan and monitor their research activities.

4.0 Findings

4.1 Preliminary Survey

UiTM respondents consist of 78 per cent female and 22 per cent male undergraduate students from year two and year 3. Mainly, there are four critical difficulties faced by the students in completing their dissertation. The first is regarding the method of writing a dissertation is challenging to handle. Second, the steps to be taken in advancing research are uncertain. Third, the manual for the dissertation is difficult to understand and fourth was that the actual study timetable is uncertain. Therefore, those respondents were asked to rate these issues.

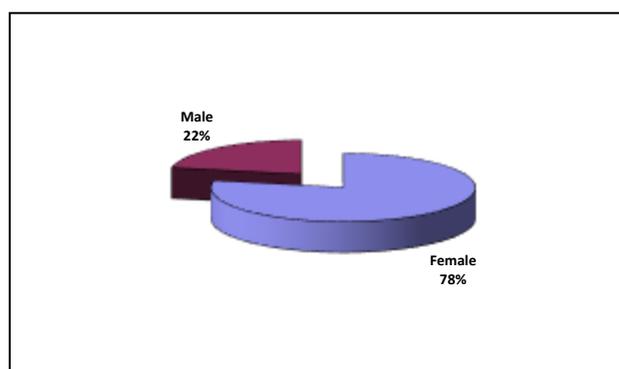


Fig. 1: Distribution of Genders
(Source: Authors)

Table 2. Problems Faced by the Undergraduate Students in Completing Dissertation

The problem faced by undergraduate students	Ranking (N=160)
Difficult to manage the process of preparing a dissertation	1
Uncertain of the steps to be taken in progressing research	2
Uncertain on the actual research timeline	3
Difficult to understand the dissertation manual	4

(Source: Authors)

5.0 Discussion

5.1 The Propose of MYDISSERTPLANNER

MYDISSERTPLANNER is a mobile application planner design to assist undergraduate students in planning their research activities towards successful submission of their dissertation in order to fulfil university requirements in obtaining a Bachelor Degree.

5.2 Resolution of MYDISSERTPLANNER

Resolution of MYDISSERTPLANNER is a tool via a mobile application to assist undergraduate students, supervisors, and research coordinators in monitoring research progress. This tool is developed in line with Education 5.0 and youngster interest in information technology by using a smartphone. The application allows the Research Coordinator to plan and monitor research activities in a different semester. At the same time, the students will receive a response on the important dates through a notification alert (pop-up reminder).

This application can also assist undergraduates' students in downloading all related forms and being more alert on every research activity timeline. This convenience spoke to the actual mobility of the device as opposed to using a larger device like a laptop computer. The students' recognition of the ease of mobility and the ability to access information via the mobile device firmly supported the definition of mobile learning operationalised for this study (Gikas & Grant, 2013). Therefore, students will be alert and can efficiently manage their research activities. This process can enhance the quality of dissertations. The tool will provide a better understanding of the research process as a whole.

As Gikas & Grant (2013) mentioned, mobile devices provide learners opportunities to collaborate, discuss content with classmates and instructors, and create new meaning and understanding. Therefore, MYDISSERTPLANNER has scrutinised four main benefits in relation to research for undergraduate students, including the supervisors and the research coordinators. First, MYDISSERTPLANNER can be a one-stop integrated information centre on undergraduates' research activities for students, supervisors and the research coordinator. The second is to provide a systematic medium of conveying information by the Research Coordinator in charge of research activities. Third, offer new insight and excitement for supervisors in managing undergraduate students research activities through the smartphone. Lastly, MYDISSERTPLANNER will assist undergraduate students in planning research activities.

5.3 The Visualize of MYDISSERTPLANNER

Fig. 2 visualise MYDISSERTPLANNER, where the students will use their smartphones. The students need to download the MYDISSERTPLANNER application to their phones. Students can choose the related information about their research. The main information is studies, supervisor roles, student roles, dissertation structure, download related forms, plagiarism and collusion, and calendar activities.

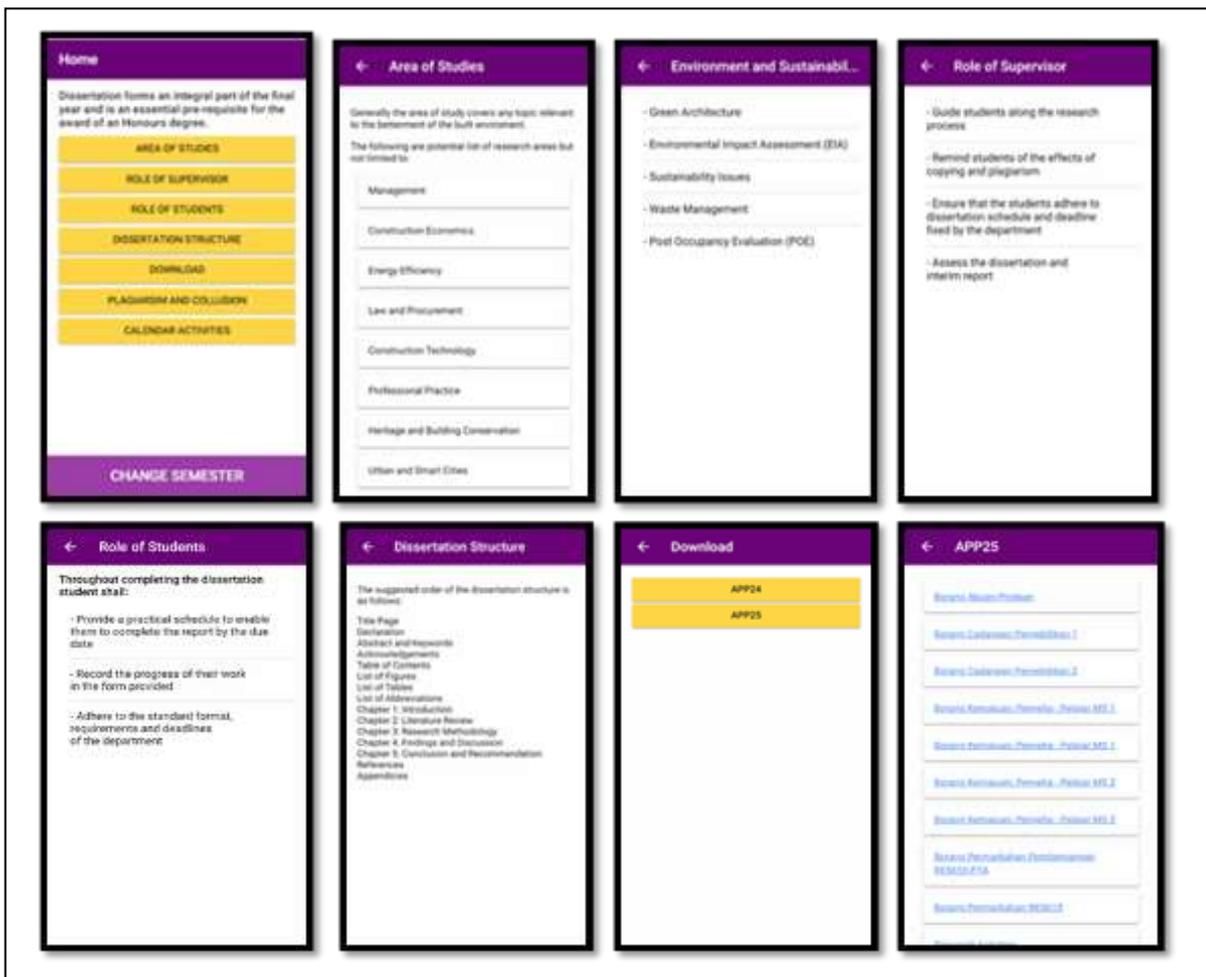


Fig. 2. Visualisation of MYDISSERTPLANNER
(Source:Authors)

6.0 Conclusion

MYDISSERTPLANNER is an easily accessible web program from any smartphone device. The use of smartphone event systems has many benefits. First and foremost, any single detail that the students need to attend will be readily available. It is indeed a centralised set of knowledge to keep track of the tasks and instructions they need to reach the deadline. Develop the communication structure through technology has improved data flow, and it has resulted in ease of use, scope and quality of open knowledge on writing a dissertation for architectural undergraduate students of UiTM MYDISSERTPLANNER 's production are intended to be a challenging

resource for university undergraduate students as well as helping graduates graduate on time (GOT). GOT standards are becoming a standard at most universities across the globe, as it lowered university operational costs

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