An Assessment of Students' Views on the Preparation of a Research Proposal

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Abstract: University courses on writing research proposals are vital for the future employment prospects for students, as they provide them with the knowledge and abilities necessary to develop proposals for their assigned research projects. Research proposal courses train students to think critically and gather relevant information to solve the problems encountered in a particular area of research. It also trains students to be more creative in finding answers and ensuring the success of a project. An appointed panel will review new ideas in a research proposal to guarantee the project's success. In the present study, a survey was conducted on the willingness of students to prepare a research proposal by identifying the obstacles they face when preparing such a proposal. A Google Form questionnaire was distributed to 53 students who have registered for the proposal preparation course. The statistical analysis of the findings was evaluated using Microsoft Excel software. The results of this study suggest that undergraduate students are physically and mentally prepared to write a research proposal in accordance with university guidelines. 69.8% of students chose Mode 1, which involves laboratory work; 17% chose Mode 3, which involves simulation research; and 15.1% chose Mode 2, which involves review research. Students prefer lab interaction, machinery, and equipment over computers for analysing research materials and results, according to research involving students and faculty members.

Keywords: Research proposals, undergraduates, supervision, Physics

Introduction

A research proposal is a written assignment completed by students prior to pursuing a research study. This course is a prerequisite for students who plan to undertake a research project in the upcoming semester. The research proposal first begins with a discussion between students and prospective supervisors. Once there is mutual agreement between all parties and students have a clear comprehension of the research's purpose and direction, the planning and completion of the research proposal can take place. Given that the present cohort of students at this level falls within the age range of 21 to 23 years, it is appropriate to regard them as adults due to their capacity to manage and arrange their time and study resources (Ergün, 2018; Othman et al., 2019; Guest et al., 2021). The target sample of this survey consists of undergraduate students who are currently enrolled in the research proposal course. Each student is accountable for ensuring the effective completion of the research proposal and its adherence to the university's criteria. Research is an investigative activity that is done carefully and continuously to solve problems and discover new things (Sangadji and Sopiah, 2010). Research proposals depend on the effectiveness of time, money, and effort (Nasution, 2009). An excellent research proposal includes a persuasive element to convince the reader that the topic is useful and achievable (Denscombe, 2012). The purpose of a research proposal is to persuade

the research panels of the credibility, achievability, practicability, and reproducibility of the research work (Saunderlin, G., 1994).

Literature Review

A proposal is a study plan followed by research efforts, and it continues according to various steps and stages that must be completed (Behling and Dillard, 1984). The preparation of proposals helps students increase the focus that is important in their studies and find a direction to continue (Paltridge, 1997). Figure. 1 depicts a flow chart of the relationship between the faculty, students, and supervisors in an online learning seminar. At the outset, a course coordinator representative will convene with all students who have enrolled in this course for the latest semester. The coordinator will go over the various research methodologies and how to write a research proposal. The students will then meet with potential supervisors to discuss the study topic. Once the students and supervisors have come to a consensus on the topic, it is necessary for them to create a formal agreement document prior to commencing the writing of the research proposal. Students must attend compulsory online learning seminars during the active semester, where they will be introduced to scientific research and information skills workshops. The present study aims to examine the preparation university students make before writing their proposal papers. It also aims to identify the difficulties and barriers that students might run into when preparing to write their research proposals. The objective is to determine the aspects that could potentially lead to a deterioration in the quality of students' proposal preparation.

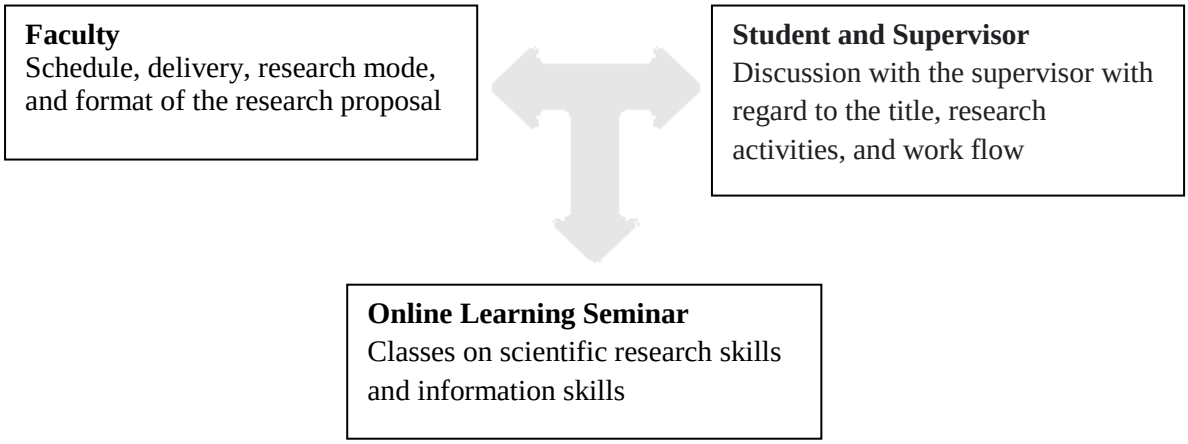

Fig. 1 A schematic illustration of relationship between the faculty, student, and supervisor in an online learning seminar

Methodology

The present study employs a quantitative approach for data gathering, specifically utilising a survey that employs a questionnaire as the primary instrument. The survey respondents consist of students pursuing a bachelor's degree in physics and students pursuing a master's degree in industrial physics. These students are in their fifth semester, and the proposal-writing course is mandatory prior to engaging in research activities. The use of the questionnaire method demonstrated its efficacy in expediting the collection of the necessary information. A survey using a Google Form was distributed to a cohort of 53 students who have enrolled in the research proposal course. The link to the survey form was provided by the course representative to all students enrolled in this course. The research questionnaire is divided into 3 main parts: part A is related to the demographics of the respondents; part B refers to the level of research proposal knowledge; and part C is related to the

effect of webinar use on students. The data and information obtained from the questionnaire were analysed using descriptive statistical methods such as frequency, percentage, and mean. Figure 2 shows the flow chart of the survey methodology in this study. The documentation process is crucial for determining the appropriate questionnaire and objectives during this stage. The Google Form was chosen for the survey design because it is freely accessible and has a wide range of templates in its library, making it easy to develop the form.

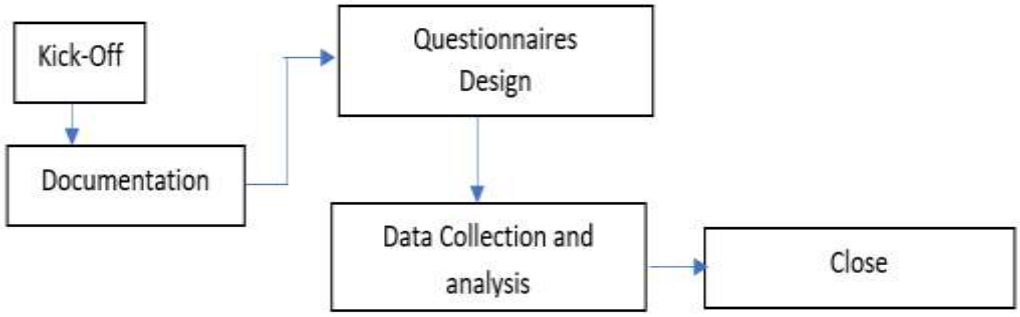

Fig. 2 Flow chart of the survey methodology

Findings and Discussion

A total of 53 students were investigated in the present study. According to the data shown in Fig. 3, 58.5% of students who are 22 years old, 34% of students who are 23 years old, 5.7% of students who are 21 years old, and just 1.9% of students who are 24 years old take the research proposal course.

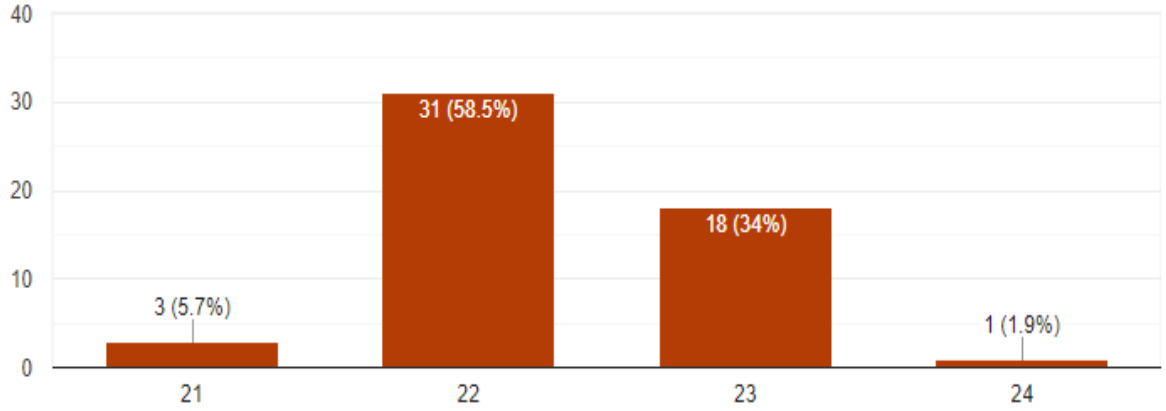

Fig. 3 Age of students

Figure 4 illustrates that 69.8% of students have chosen Mode 1, which involves engaging in laboratory tasks. Subsequently, 17% of students opt for Mode 3, which entails simulation research. The remaining 15.1% of students have chosen Mode 2, which involves reviewing research. The faculty promotes mode 1, or laboratory work, as the preferable option for students since it provides them with greater exposure to research-related skills and enables them to practise other modes in a variety of ways. The faculty may utilise the disposal of unneeded chemicals and consumables as a reason to motivate students to use these materials now rather than letting them go to waste or expire. It was discovered that students prefer being in the lab and interacting with other students and faculty members to sitting in front of a computer. The use of machinery to analyse research materials or results, as well as the use of equipment, chemicals, or research materials, was shown to be preferred by students. Additionally, not all students want to spend their days on computers. There are some

possible reasons why students prefer laboratory work over computer-based methods. The hands-on experience of conducting studies allows students to interact with materials and equipment in the laboratory, which will improve their knowledge retention and understanding of concepts. Conducting experimental activities can directly link theoretical knowledge with practical applications. When in the laboratory, students usually interact with other students by sharing ideas and opinions, which facilitates group collaboration skills. Students can also apply creativity when adapting to the various parameters available in their study. Students will exclusively obtain direct results, and this helps them make immediate decisions and corrections if needed.

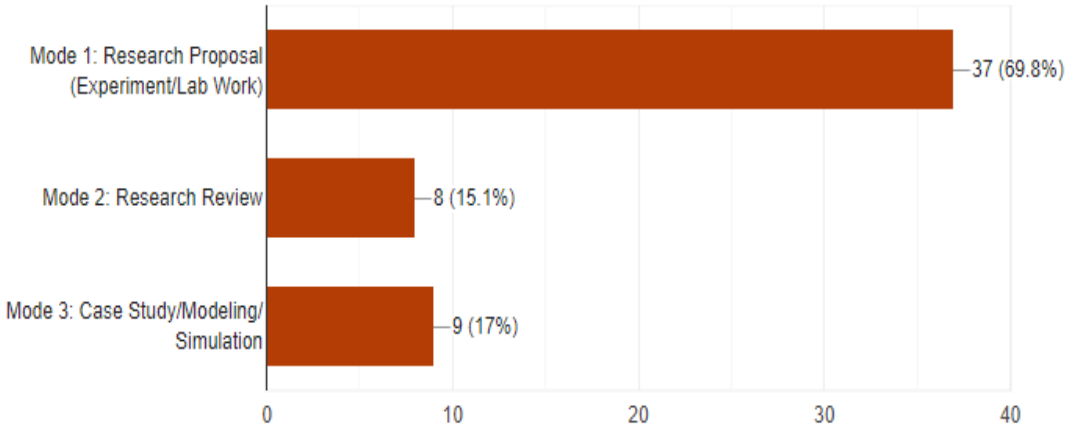

Fig. 4 Selection of research proposal mode

Figure 5 illustrates the proportion of students that express interest in submitting a proposal for their final year project. Given that the final project proposal is a compulsory component of the degree programme, 60% of students exhibit a strong desire to complete it. Out of the total student sample, 30% display a high level of dedication towards developing the final project proposal, whereas the remaining 9% exhibit only a moderate level of commitment. A mere 2% of students find the project title uninspiring. Students are provided a research proposal title by the lecturers of the department of physics and materials, Faculty of Applied Sciences, UiTM Shah Alam. Those who are uninterested in the title of their project may face certain consequences that could influence their commitment to the project. Students' motivation will diminish if the acquired titles fail to align with their future professional aspirations and plans. This leads to their inability to fully comprehend the inherent significance of the research project. Students may become disinterested in undertaking a project if the project titles are repetitive or obsolete because they prefer the latest projects that challenge their abilities, as opposed to projects that appear rather simplistic and devoid of value. Students also see a deprivation of their autonomy to select and develop their own projects according to their personal interests.

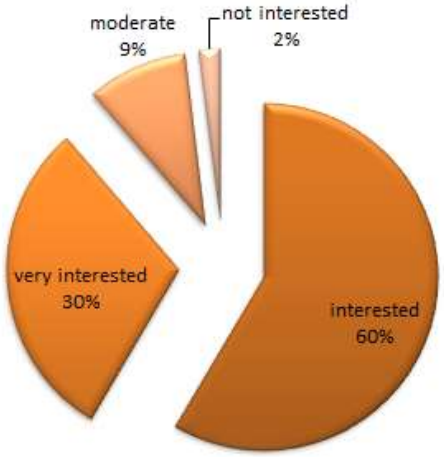

Fig. 5 The percentage of students who are interested in a particular final-year title

Figure 6 shows the percentage of students' basic knowledge of their final-year topics. Approximately 62% of students had a comprehensive understanding pertaining to their final project. Among the student sample, 17% claim to possess a commendable grasp of the essential concepts behind their forthcoming final year project, but an additional 17% admit to possessing only moderate or average familiarity with their final year subject matter. Finally, a mere 4% of students admitted to being inept in formulating their research proposal topics. Several research proposal themes are directly linked to the disciplines covered in the degree course subjects. Consequently, most students face no issues in selecting a project title, and they are also already familiar with their topic lecturer. The majority of students who easily select a project title face certain implications. Those who encounter no difficulty in selecting a research title are those who find the available titles compatible with the courses offered in their degree study programme. This facilitates the execution of research projects for students, as the necessary research equipment and resources are provided according to the degree programme. Students are required to promptly complete their research proposal on time.

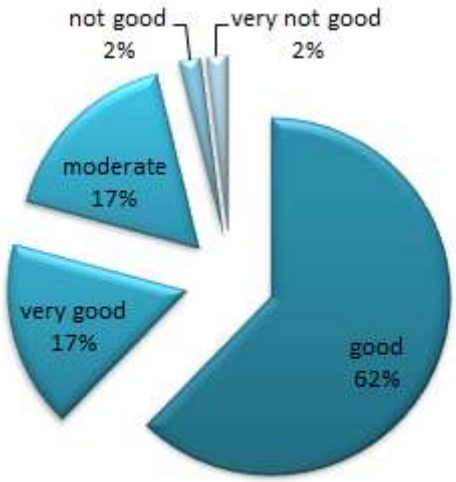

Fig. 6 Basic knowledge of the final year topics

The frequency of interactions or discussions with the supervisor (SV) during the course of a semester is depicted in Fig. 6. 44.2% of students indicated that they have engaged in three or more meetings with their supervisor. Meanwhile, a quarter of students have six to seven meetings with their supervisor. 21.2% of students subsequently engaged in 8–10 meetings with their supervisor. Merely 5.8% of the students engaged in over 10 meetings with their supervisor. Furthermore, it was shown that a mere 5.8% of students had the opportunity to engage in one or two sessions with their supervisor.

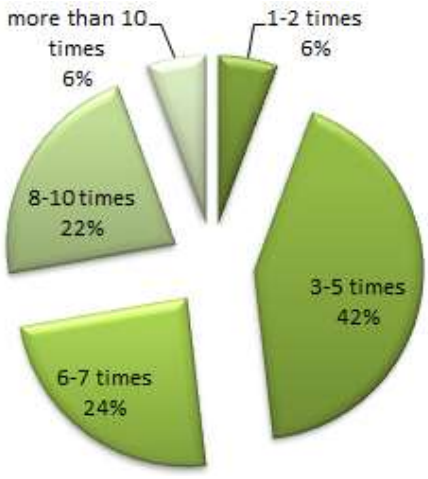

Fig. 7 Meeting frequency with supervisor throughout a semester

Figure 8 illustrates that 51.9% of students expressed agreement regarding the usefulness of the webinar in the creation of their research proposal report. Students' teaching and learning will become more efficient, enjoyable, and valuable if webinars are used as an alternate source of disseminating information and teaching new skills (Pedroso, 2021). The term "webinar" is generated from the combination of the words "web and seminar," indicating that a seminar is conducted over the internet (Verma & Singh, 2010). The exceptional webinar software serves as a platform for individuals to communicate and collaborate across many geographical locations over the World Wide Web (WWW).

Fig. 8 Did the WEBINAR assist you in formulating a proposal?

The webinar aims to assist students in developing an optimal research proposal by providing them with diverse examples and methodologies tailored to their own research approach. The organised webinar is designed to provide guidance and strategies for creating an exceptional research proposal paper in accordance with the faculty's requirements. The webinar also guides students on the utilisation of tools and specialised software that can facilitate the creation of a well-crafted research proposal. Approximately 17.3% of students unequivocally agree that they derive advantages from this webinar; 28.8% of students consider this webinar to be routine; and 1.9% hold the belief that it is suitable for self-learning at home. In addition, students face the problems of time constraints when searching for articles and the obligations imposed by assignments from other courses. Students encounter time constraints to seek relevant journal articles, maybe attributable to the intensity of their academic and lecture schedules, as well as the extracurricular commitments of associations or residential colleges during evenings or weekends. Moreover, the ambiguity around the project's title and the limited timeframe for consulting with supervisors may pose difficulties for students. Due to the varying methodologies employed by supervisors, certain students may exhibit a diminished level of expertise in the research proposal structure. Generating a proposal throughout these stages might be arduous due to insufficient ideas and uncertainty about the specific content required for each stage.

Conclusion

In summary, the survey was successfully conducted on the 53 students who have registered for the research proposal course. The findings revealed that the students are physically and intellectually prepared to submit a research proposal in accordance with the university criteria. According to a study including students and faculty members, students prefer lab contact, machinery, and equipment to computers for analysing research materials and results. In addition, about 51.9% of students reported that the research proposal webinar helped them complete their proposal report. Meanwhile, 17.3% of students are certain that they will benefit from this webinar. Nonetheless, 28.8% of students agree that this webinar is routine, and 1.9% of students believe that it is only suitable as a self-learning tool at home.

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