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The Online Tutorials Evaluation in Education Statistics Course at Pokjar Kendal Indonesia

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Abstract

The implementation of online tutorials introduces difficulties in the learning process. Along with studying lecture material, students must also master technology. On this basis, an evaluation of the Education Statistics course is necessary. This evaluation focuses on implementing online tutorials and the factors that impede their implementation. This study aims to determine the quality of online tutorials available for the Education Statistics course. The research subjects are students from the Universitas Terbuka at Pokjar Kaliwungu and Kendal. This study is categorized as a qualitative descriptive study. Observation sheets, questionnaires, and interviews were used to collect data. The findings indicated that: 1) 47.1 percent of students use learning resources in the form of books, 47.1 % use learning videos, 70.6 % use websites, and 38.2 % use other sources; 2) most students (61.8 %) struggle with hypothesis testing material, while 64.7 % struggle with linear regression analysis material; and 3) the difficulty of the material is because the material is difficult to understand by 35.3%; high difficulty by 50%; students have never been 35.3%; high material complexity by 29.4% and other 5.9%. Based on the findings of these studies, it can be concluded that there are still a significant number of students who struggle with the material covered in Education Statistics. The analysis suggests that: 1) lecturers should focus on hypothesis testing and linear regression analysis material in the tutorial to help students overcome difficulties; and 2) lecturers emphasize the application of statistics in research.

Keywords: online tutorial, evaluation, education statistics

INTRODUCTION

Universitas Terbuka (UT) is one of Indonesia's universities that uses an open and distance learning system. UT began using distance learning before the pandemic. To ensure that learning activities at UT are optimal, well-run, and of high quality, they are aided by a facilitator, specifically a tutor (Purnomo, Pramudibyanto & Lestariningsih, 2017). The tutor's role is highly strategic, as it is the primary focus of tutorial activities. A tutorial is a learning assistance service provided to students to assist them in achieving the best possible learning outcomes (Sugiran et al., 2016). Therefore, tutors must act as effective facilitators throughout the tutorial process (Purnomo et al., 2018). It is especially true when the tutor is assigned to tutor students in subjects with a high difficulty level, such as the Education Statistics course.

Education Statistics is required for primary school teacher education study program and Early Childhood Teacher Education Study Program students. This course covers the fundamentals of statistics and its application to the field of education.

Education statistics can be applied in several ways. First, they educate children in elementary school about statistics. Second, they use statistics for final project research (Purnomo et al., 2018). However, according to the tutorial's observations, many students still struggle with this material. Therefore, students who do not pass the Education Statistics course must be counted each semester. This fact is a note intended for lecturers and students alike.

Individual differences between students are readily apparent in the university learning environment regarding time, duration of learning, selected learning content, and interaction patterns (Zhang et al., 2020). The emergence of issues in online tutorials is a result of students who are unfamiliar with the distance learning system and are unwilling to change (Kwon et al., 2021), insufficient learning integration (Genkova & Schreiber, 2021), and a lack of tutor support (Margot & Kettler, 2019). Students are accustomed to receiving guidance from a tutor in the classroom, as they did while in school. This results in UT students being unable to adhere to the independent learning system, which results in many difficulties (Sahusilawane & Hiariey, 2014).

It necessitates an evaluation in the Research Statistics course. This evaluation will be used as input for tutors and students to ensure that the tutorial is conducted effectively. Some students learn best through observation and listening, others through reading, and others through learning practice (Movchun et al., 2021). Therefore, this evaluation serves a critical function, particularly in enhancing the quality and effectiveness of a program (Sugiran, Pardamean Daulay, 2015) (Sugiran et al., 2016). The purpose of this study is to evaluate tutorials in the Education Statistics course from various perspectives, including those of tutors, students, course materials, and online tutorial systems.

METHOD

The method of investigation is descriptive qualitative research. The research subjects were students from the Kendal district working group, who were chosen by students from the Kendal district and the Kaliwungu sub-district, with 34 students. A questionnaire and in-depth interviews were used as the research instrument. A Google Form was used to complete the questionnaire. Triangulation was used to collect data in this study, including questionnaires, observations, and in-depth interviews. Data analysis is an inductive process that involves deriving conclusions from detailed examinations of small case studies to create a larger picture (Sukestiyarno, 2020). Data analysis entails data reduction, presentation of the data, and conclusion drawing. Eight students were chosen for in-depth interviews based on the results of the questionnaire analysis. The researchers conducted interview activities using interview guidelines. The interview guide used is based on the questionnaire guidelines filled out by students. The questionnaire instrument for students has been tested for validity and reliability. The results of the questionnaire test in a valid and reliable questionnaire. The questionnaire and interview responses were analyzed, and the results were described and visualized in graphics.

RESULT

Four points were used as a starting point to evaluate this online tutorial, including the following: 1) students frequently consult references, 2) educational resources for students 3) the materials studied by students, and 4) factors contributing to students' difficulties with the Education Statistics course material. Based on these four points, a conclusion will be drawn regarding the tutorial's evaluation. To begin, students are asked, "What sources do you use in your Education Statistics tutorial?" The questionnaire's results are depicted in Figure 1.

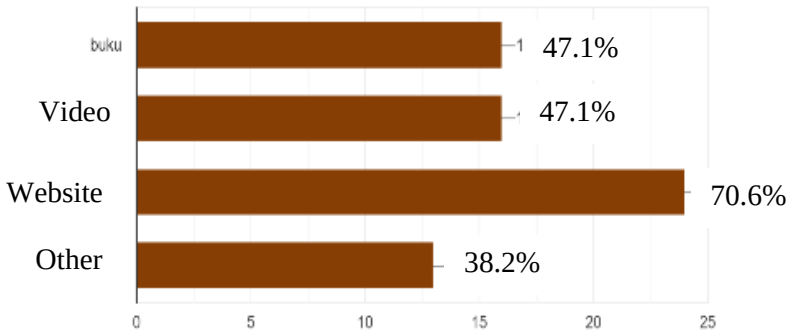

Figure 1. Students' Tutorial References

Based on the Figure 1, it can be concluded that the most frequently used reference is the website. The second question contains more specific inquiries about educational resources. The second question is, "How do you prefer to learn in tutorials?" The responses to these questions are depicted in Figure 2.

According to Figure 2, students spend most of their study time on ppt material from tutors or peers. Then modules, learning videos, and internet-based materials were used.

The following question concerns the degree of difficulty of the material covered in the Education Statistics course. Students are asked the following questions: "What do you believe is the most difficult material in the Education Statistics course?" The questionnaire's results can be summarized as Figure 3. There are nine materials in the course; based on the results of Figure 3, it can be concluded that many students struggle with linear regression analysis, hypothesis testing, and other curves and their applications. For additional information, see Figure 3.

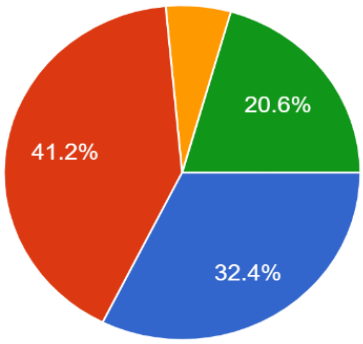

Figure 2. Learning Resources Used by Students in Tutorials

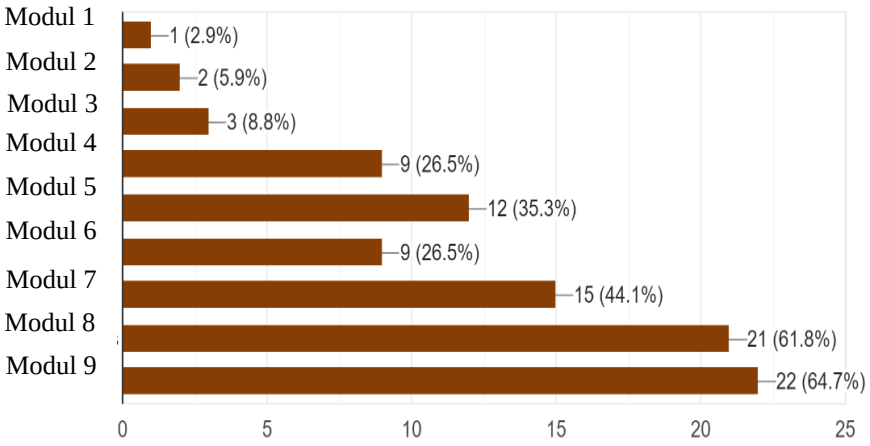

Figure 3. Education Statistics Complex Course Material

An in-depth interview with students regarding their difficulties, such as the homogeneity test, was conducted. Students have mastered the concept of homogeneity testing. Still, they make errors when making decisions—mistakes in selecting and utilizing hypotheses due to students' continued confusion regarding the t or z test. The following question examined why students struggled with the material. The results are shown in Figure 4.

According to the questionnaire results, many students struggle in the Education Statistics course because the material is more difficult to understand. Students have never studied the material before, and the material studied has high complexity.

DISCUSSION

Students must be able to learn independently and use technology as a learning resource due to the implementation of online tutorials. The findings indicated that students accessed more website content. It is because the website offers numerous benefits (Purnomo, Suparman, & Kadarwati, 2020; Purnomo et al., 2021), including a comprehensive range of materials, easy access to learning resources, and greater flexibility in terms of space and time (Afgani et al., 2008; Ulfah, 2012; Susanti & Suripah, 2021).

Based on the interview results, students prefer essays or power points presented by other students or tutors. It is because PowerPoint is more concise in its presentation and comprehensive in its content. Using PowerPoint, students can more easily grasp the existing material. In comparison to books/modules with more complete but less straightforward content. It is why, when compared to modules, students prefer PowerPoint. However, many students choose the module because it is comprehensive and can be studied independently. Sure, students make use of pre-existing instructional videos. However, students struggle to comprehend the material when looking at power points and modules. Students will understand more quickly if they use instructional videos.

The results of the evaluation of the material indicate that many students struggle with relevant statistical material. According to the research, students work with linear regression analysis, hypothesis testing, and other application curves. The three materials are intended for use in statistical applications in research. According to the interview results, the difficulty is due to the material's high difficulty level. The material is more challenging to comprehend. The students have never studied the material before, and the material investigated is highly complex. Student interviews corroborate it. The statistical data presented above have never been discovered and implemented in schools. Indeed, most students are primary school and early childhood teachers. Thus, the material mastered in school is statistical

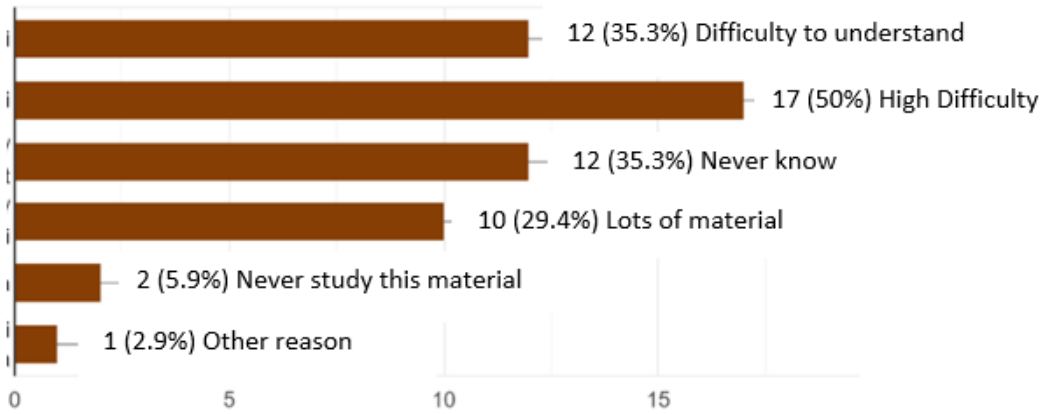

Figure 4. Student's Problems with an Education Statistics Course

CONCLUSION

The study's findings indicate that: 1) 47.1 percent of students utilize student learning resources in the form of books, 47.1 percent utilize student learning resources in the form of learning videos, 70.6 percent utilize student learning resources in the form of websites, and 38.2 percent utilize other sources; 2) most students (61.8 percent) struggle with hypothesis testing material, while 64.7 percent struggle with linear regression analysis material; 3) the difficulty of the material is due to the following factors: 35.3 percent of students have never heard of the material, 29.4 percent believe there is a lot of material, and 5.9 percent have never studied the material. Recommendations based on research findings are: 1) lecturers should concentrate on linear regression analysis, hypothesis testing, other curves, and their applications and 2) lecturers must provide students with comprehensive learning resources. Based on the primary research findings, it is possible to develop learning media and apply a learning model to the Education Statistics course in future research. Learning media can take the form of e-modules that contain text, PowerPoint presentations, and instructional videos. This type of learning can take the form of project-based learning, problem-based learning, or a combination of the two.

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