

IMPROVING BIOSTATISTICS UNDERSTANDING USING THE MIND MAPPING LEARNING MODEL

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Abstract

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This study aims to increase students' understanding of the biostatistics course on T-Test material at STIKes Bhakti Husada Bengkulu by using the Mind Map learning method. This study aimed to determine the increase in students' creative thinking skills using the Mind Mapping method approach. This research method is Pre and Post Experiment. The research population is nursing study program students. The results showed that the use of the mind-mapping approach could improve students' creative thinking abilities. understanding, it appears that students are more able to develop ideas and ideas to solve problems using mind mapping, so it can be concluded that there is an influence of the mind mapping method on increasing comprehension of the t-test material biostatistics course.

Keywords: Mind Map, Biostatistic, Experimen

1. INTRODUCTION

Learning is an accumulation of the concept of teaching (teaching) and the concept of learning (learning) the emphasis is on the combination of the two, namely the growth of student activity (Mandalika & Syahril, 2020), The achievement of learning objectives leads the teacher to apply the right learning model because it can affect students' ability to understand a concept that is being studied (Bustanil et al., 2019), Learning is an effort to influence students so that learning takes place, teaching students through creating conditions and a conducive learning environment, revealing that learning is the ability to be able to organize information is fundamental for learners (Dr. Rusman, 2017). Learning is an attempt to influence students so that learning takes place, teaching students through the creation of conditions and a conducive learning environment, revealing that learning is the ability to be able to organize information is fundamental for learners. Learning strategies are needed to support the realization of all competencies contained in the curriculum, meaning the curriculum contains what should be taught to students, while learning is a way of how what is taught can be mastered by students, a semester credit system (SKS) is prepared to facilitate educational units in pioneering or continuing curriculum management by applying credits as an embodiment of the concept of complete learning, which allows students to learn according to their learning speed (Saharsa et al., 2018). The Biostatistics course is a prerequisite course for STIKes Bhakti Husada students for thesis courses, so students are required to have good competence in this course, the absence of a computer laboratory makes students asked to be creative in understanding the learning of biostatistics courses both in a series of practicums and improve understanding by practicing questions independently. Supporting lecturers are required to be creative in learning to facilitate student learning, the biostatistical learning process is designed to be interactive, fun, and provide space for students to be actively and creatively involved.

Mind Mapping is a learning method that is expected to be able to increase understanding because it stimulates students to be creative and think critically, mind mapping is a way of taking notes that are creative, effective and will literally map our thoughts, mind mapping is the easiest way to put information into the brain and take information out of the brain. Mind mapping uses curved lines, symbols, words and images according to a set of rules that are simple, basic, natural and in accordance with the work of the brain, more visually stimulating than traditional recording methods which tend to be linear and one color (Acesta, 2020). Biostatistical learning without maximizing visual learning media will make it difficult for students to understand the material presented, coupled with the absence of a computer laboratory in the context of practical learning, for that students are given an overview



of the material by maximizing mind mapping which is expected to stimulate students to be more creative and have high curiosity. In teaching and learning activities, only a few students actively participate such as asking questions or submitting opinions, tend to lack active interaction with lecturers and other students. The learning process is carried out individually where each student holds a laptop or computer and does individual practice. The individual learning process is less effective because most students then lose focus on learning and misuse the facilities used to open social media, play games, and do assignments in other subjects. Meanwhile, if learning is carried out where students are asked to discuss with each other, most students tend to be passive and only certain students actively seek solutions to problems, express opinions, exchange ideas, or ask questions to the lecturer. This results in only certain students who truly understand the material provided by the lecturer. Based on this understanding, it can be concluded that Mind Mapping is a way of writing creatively and effectively by using curved lines, symbols, words, and images that are visually stimulating compared to recording methods that tend to be rigid, and one color. Mind Mapping uses the brain's ability to recognize visual images to get maximum results. The solution to overcome the above problems is to apply learning models that are interesting, motivating, can increase student participation and activeness and familiarize students to work together in the learning process. The learning model that fits the needs above is the learning model with assignments so that students become more active. The cooperative learning model prioritizes group collaboration to achieve learning goals. In the process, students are actively involved both when working individually and when working with other students so that it can stimulate students to be more motivated in learning. One type of cooperative learning model that can be applied to overcome the problems mentioned above is the assignment with mind mapping (Mind Map). The Mind Map learning model will offer a pleasant learning atmosphere where students actively read and summarize material according to their creations and understanding. In this learning model, students are invited to practice growing responsibility, healthy competition, learning involvement and especially student activity.

2. METHODS

This study was intended to determine the effect of the Mind Mapping model on increasing understanding of the t-test material in the biostatistics course at STIKes Bhakti Husada Bengkulu. Therefore in this study, researchers used the pre-experimental research method with a one group pre-test post-test design. The data source in this study is students' understanding of the t-test material. This understanding is obtained from the score or value obtained from the pre-test given to students before being treated using the Mind Mapping model and the score or value obtained from the post-test given to students after being treated using the Mind Mapping model. The instrument used in this study was a case test for data analysis t-test. The required data is collected. The next step is to carry out tabulation activities. In the scoring step, calculating the score of each answer both on the pre-test and post-test, and tabulating the data into a table. The data analysis technique used is statistical analysis technique. There are two kinds of statistics used to analyze data, namely descriptive statistics and inferential statistics. This stage includes several activities, namely: describing the results of the pre-test and post-test and conducting hypothesis testing by conducting the Paired Samples T Test if the data is normally distributed and the Wilcoxon test if the data is not normally distributed.

3. RESULTS AND DISCUSSION

The categorization of the level of understanding of the t-test material in the biostatistics course is divided into very high, high, medium and low categories. Students who took the biostatistics course in the VII semester of the Nursing Study Program consisted of 38 students, with an average score of understanding the results of the t-test material in the pre-test was 45.42 included in the low level of understanding category. Then after being treated using the Mind Mapping model on the t-test material, the post-test results of the number of students in the Biostatistics course in the VII semester of the Nursing Study Program totaled 38 students with an average score of 83.79. The results of the pre and post average scores illustrate an increase in understanding of the t-test material for the biostatistics course at STIKes Bhakti Husada Bengkulu. To be able to find out more clearly the influence of the



Mind Mapping model on increasing understanding, a hypothesis test was carried out by testing the average difference. The mean difference test (Paired Samples T Test) aims to determine whether there is an average difference between the pre-test and post-test scores. This test uses the help of the SPSS 20.0 application with the Paired Samples T Test. Based on the test results obtained a significance value of 0.000, then H_0 is rejected and H_a is accepted, meaning that there is an increase in understanding of the t-test material in biostatistics courses using the mind mapping learning model.

Learning by applying the mind mapping method greatly influences the ability to think creatively because in the learning process students are very enthusiastic about following it, the results obtained after this learning are very satisfying and the formation of students' creative mindset where students are able to think and find something new, create ideas new, and able to look at a problem from various points of view. This was marked by, among other things, students who previously were unable to make the connection between the different requirements for good water for everyday life, with the development of students' creative thinking abilities so they were able to find out what the relationship between good water conditions for everyday life was like. (Acesta, 2020).

Not many teachers apply methods that can hone students' creative thinking skills, even though future challenges demand that learning must further develop students' creative thinking abilities. One of the learning methods that can hone students' creative thinking skills is the mind mapping method, because this method uses visual reminders by forming patterns and related ideas that are used for learning. This mind map can develop original ideas and trigger memories easily. During the lesson with the concept of water for daily needs students are given a blank sheet of paper to make a mind map. Previously students were shown an example of a mind map then students were given an explanation on how to make a mind map, then students made a mind map regarding water for daily needs here students are required to use indicators of creative thinking ability. Some indicators of the ability to think creatively include proficiency/fluency, flexibility, originality and elaboration (Purwa Nugraha et al., 2016).

Content mastery services combined with mind mapping techniques are intended to be able to influence student learning motivation. The existence of this influence is based on the results before being given mind mapping technique content mastery services with after being given mind mapping technique content mastery services. The provision of content mastery services for mind mapping techniques is carried out in eight meetings with the first meeting and the second meeting being given material on mind mapping, and the next meeting is the practice of making mind mapping. (Amalia, 2017)

4. CONCLUSION

Based on the results of the research and hypothesis testing, it can be concluded that: understanding of the t-test material in the biostatistics course at STIKes Bhakti Husada Bengkulu before being treated using the Mind Mapping model is in the poor category, as evidenced by the pre-test results obtained during the study, namely, the average score of understanding the material is 45.42. While the value of students' understanding after being given treatment using the Mind Mapping model shows quite significant results, namely an increase in understanding, this can be seen from the results of the post-test compared to the results of the pre-test. The average score of the post-test results is 83.79 which is included in the high category. This shows that there is an influence from the use of the Mind Mapping model on the level of student understanding of the t-test material in the biostatistics course, and the average score indicates an increase in understanding before being given treatment or treatment and after being given treatment or treatment. Testing the hypothesis by computer is known to have a significance value of 0.000, then H_0 is rejected and H_a is accepted, meaning that there is an increase in understanding of the t-test material in biostatistics courses using the mind mapping learning model.

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