THE EFFECT OF PROBLEM-BASED LEARNING AND DISCOVERY LEARNING MODELS ON STUDENTS' FINANCIAL ACCOUNTING LEARNING OUTCOMES AT PUBLIC VOCATIONAL HIGH SCHOOL 1 KENDARI SOUTHEAST SULAWESI

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Abstracts:

This stdy aimed to investigate how models of problem based learning and discovery learning affected financial accounting leanring results of SMK Negeri 1 Kendari, Southeast Sulawesi Province. Using a post-test only control group design and an experimental strategy as the study technique. With a simple randomized sampling approach, this research included Class XI students majoring in Institutional Financial Accounting (AKL) at SMK Negeri 1 Kendari, resulting in a sample of Class XI1 and XI3 totaling 68 individuals. This research used the Kolmogrov-Smirnov test as the normality test; the homogeneity test was done with the variance test (f-test); the hypothesis test was done with the t-test. Whether H0: $\mu 1 = \mu 2$ indicates that there is no effect of the problem-based learning and discovery learning models on learning outcomes or H1: $\mu 1 > \mu 2$ indicates that the models have an impact on students's learning outcomes related to financial accounting, so guiding the generation of a hypothesis based on the test that will be conducted.

Keywords: *problem based learning, discovery learning, and learning outcomes*

1. Introduction

A nation's development depends much on education because it helps human resources to grow in accordance with Indonesian Law Number 20 of 2003 on the National Education System. By means of education, the Ministry of Education and Culture seeks to maximize the possibilities of its pupils. Measuring achievement in the form of graduation competency standards and basic competency standards helps one ascertain the degree of knowledge of the pupils. Learning

outcomes allow one to see the minimal completeness criteria (KKM) formula, which is the fundamental competence standard formula. Pre-research done at SMK Negeri 1 Kendari revealed that while in fact the field reflects as much as 60% of students who are only able to acquire grades 75 and above, the KKM that should be attained by students in the institution is 85% of students with grades above 75.

Two people describe the need of pupils not in line with what the institution expects. The instructor said that lack of learning autonomy among pupils was the reason behind those who had not scored at least 75 and above. Moreover, the students said that poor conditions—including a general feeling of boredom throughout the course of instruction—exacerbated by the use of an inappropriate teaching strategy—had bad effects on their grades. According to the Ministry of Education and Culture, many learning strategies like project-based learning, problem-based learning, discovery learning, and other pertinent models may be used to improve the active participation of students in the educational process. Masriah et al. (2021) there are several factors that affect student learning outcomes, namely student input, teacher quality, learning resources, lack of diversity in learning models and so on. This is consistent with the Ministry of Education and Culture's recommendations for various learning models, including problem-based and discovery learning models. The learning process is known to generate active students in both learning models, as the problem-based learning model emphasizes authentic inquiry (Manurung, 2021) and the discovery learning model focuses on the process of discovering knowledge in the course of instruction when the instructor functions as a facilitator (Rahayu et al., 2019).

On this basis, it is necessary to conduct research to find out whether there is an Effect of Problem Based Learning and Discovery Learning Models on Students' Financial Accounting Learning Outcomes at Vocational High School (SMK) Negeri 1 Kendari Southeast Sulawesi.

2. Literature Review

2.1. Learning Outcomes

Learning is an act that is done consciously by involving the thinking process, making understanding, and behavior based on good values (Bakhruddin et al., 2021). The active learning process begins with multiplying reactions and experiences in this case including changes in behavior or responses from students as a result of new experiences, having

knowledge after learning, and practicing activities (Djamaluddin & Wardana, 2019b). There are several learning theories based on experts, namely: (a). Cognitive learning theory (Abdurakhman & Rusli, 2015); (b). Learning theory(Nahar, 2016); (c). Constructivism learning theory(Umbara, 2017); (d). Humanistic learning theory (Mujib & Suyadi, 2020).

According to the experts, learning is a process that humans engage in to acquire competencies, skills, and attitudes. This process is characterized by psychological and mental activities that involve active interaction with the environment, resulting in the development of a management of understanding. Student learning outcomes are the skills acquired by means of experiences that significantly influence the learning process. The learning outcomes assessment procedure enables students to monitor their progress in attaining their learning objectives (Bunyamin, 2021). Learning outcomes are not immediately apparent; rather, they are the result of a process that involves the full cooperation of all components of the learning process. This can be ascertained through intellectual, emotional, and spiritual questions (IQ, EQ, and SQ) (Djamaluddin & Wardana, 2019). Learning outcomes can also mean the success of students in the learning process through achieving goals set by educators through cognitive, affective, and psychomotor aspects (Novita et al., 2019).

The cognitive domain comprises six components: knowledge (knowledge), comprehension (comprehension), application (application), analysis (analysis), synthesis (syntesis), and evaluation (evaluation) (Julianingsih et al., 2022). According to (Aunurrahman, 2016), there are several factors that influence learning outcomes, namely teacher factors, student factors, social environment, and school curriculum. Learning outcomes, according to the experts' justification, are cognitive skills that students pick up throughout the course of instruction. These abilities are the result of the realization of all the efforts that have been made during the learning process and can be measured using a learning outcomes test. The scores that students receive after completing the learning outcomes test indicate the high and low learning outcomes.

2.2. Accounting Concepts

According to Ariasmini (2018), accounting science is considered systemized knowledge, which is knowledge that is taught in stages and provides specialized training. Accounting, according to the American Accounting Association (AAA), is the process of

identifying, measuring, and reporting economic information to enable information users to make clear judgments and decisions (Yatti & Rifa'i, 2019).

Recording, classifying, summarizing, and reporting comprise accounting. Furthermore, accounting is a distinctive field in that it encompasses not only theoretical concepts but also material that necessitates reasoning to resolve. Transaction analysis is a prerequisite for students, as evidenced by the journaling process. The subsequent analysis procedure will be affected if an error is made in this process (Novalinda et al., 2017).

2.3. Problem Based Learning

The first presentation of a challenge to students marks a problem-based learning model's defining feature: a student-centered information search process follows later.The first presentation of a challenge to students marks a problem-based learning model's characteristic: a student-centered information search process follows later on (Suprihatiningrum, 2013). In which the learning process employs problems to encourage students to think critically, develop problem-solving skills, and acquire knowledge and concepts in the field of learning (Setiyowati et al., 2020).

In addition, problem-based learning as a whole presents a situation using authentic and meaningful problems and makes it easy for students to explore and inquire (Rahman & Rahman, 2019). The problem-based learning model is a learning model that employs authentic problems to enhance the thinking and learning skills of students during the learning process and utilizes teamwork to comprehend learning concepts, as inferred from the opinions of experts. Under problem-based learning, students are given a challenge meant to hone their critical thinking and problem-solving skills (Husnidar et al., 2014). Therefore, in the Problem Based Learning (PBL) learning process students can be given or find real problems themselves and be able to solve these problems (Khotimah et al., 2017).

The characteristics of the problem-based learning model is (1) Submission of queries or problems, (2) Emphasis on interdisciplinary connections of authentic investigation, (3) Production and display of products, and (4) Collaboration are (Rahman et al., 2019).. According to Tung (2015), the problem-based learning model is characterized by the following: (1) the problem is the starting point, (2) the problem is relevant to the real world of students, (3) the lesson is tied to the problem rather than a specific discipline, (4) students

are accountable for their own learning, (5) small learning groups, and (6) students are required to demonstrate their work. Furthermore, Afandi et al. (2013) mentioned the advantages of problem-based learning, namely a) Realistic with students' lives; b) Concepts are tailored to students' needs; c) Increase the nature of inquiry in students; d) Strong concept retention; and e). Improve the ability in problem solving. Meanwhile, the disadvantages of problem-based learning are as follows: a). The complexity of learning preparation such as tools, problems, concepts; b). It is difficult to find relevant problems; c). Miss-conceptions often occur; and d). The time required is quite a lot in the investigation. The problem-based learning model comprises several stages in the learning process, including: a). Orientation to the problem; b). Student organization in learning; c). Guidance of individual and group experiences; d). Development and presentation of work; and e). Analysis and evaluation of the problem-solving process (Nurdyansyah & Fahyuni, 2016).

2.4. Discovery Learning

Teachers are obligated to establish a more innovative environment that enables students to actively investigate and acquire knowledge through discovery learning (Cintia et al., 2018). Nurhayati & Wahyuni (2020) defined discovery learning as a form of education that enables students to more actively construct their knowledge through exploration, resulting in knowledge that is unique to their learning style. Additionally, (Sani, 2014) elucidates that discovery learning is a process of inquiry that necessitates instructors to be more innovative in the development of learning scenarios that encourage students to actively engage in the learning process and uncover their own knowledge. The discovery learning model is a learning model that enables students to be more active in the formation of their knowledge through exploration, thereby ensuring that the knowledge they acquire is their own discovery, in accordance with their individual learning style, as indicated by the aforementioned explanation from the experts. Students must be innovative in their approach to learning in order to investigate their knowledge.

The discovery learning paradigm is characterized by the following: (1) student-centeredness, (2) problem-solving and exploration to develop, connect, and generalize or expand knowledge, and (3) the implementation of activities to combine pre-existing and new knowledge (Kristin, 2016). The characteristics of the discovery learning model, as suggested

by Saefuddin & Berdiati (2014), include (1) the exploration and resolution of problems to generate, apply, and generalize knowledge, (2) student-centered learning, and (3) learning activities that integrate new and existing knowledge. In addition to the attributes of the discovery learning model, the learning model also includes objectives, including the cultivation of intellectual abilities, creative thinking, and the capacity to resolve scientific inquiries (Sohilait, 2021). Hosnan (2016) describes the goals of the discovery learning model, which include fostering learning skills by visualization in some cases, allowing students to more readily apply new knowledge, formulating question-and-answer strategies to acquire information, developing effective working methods, and grasping the ideas and principles of the material being studied. Additionally, the model aims to engage students in the learning process.

The discovery learning model has advantages and disadvantages, namely: (1). The advantages of this learning model are a) in delivering discovery learning materials, direct activities and experiences are used, b) discovery learning is more realistic and has meaning, c) discovery learning is a problem solving model, d) discovery learning provides many opportunities for students to be directly involved in learning activities. (2). The weaknesses of the discovery learning model a) with regard to time, b) for young students, c) cultural factors and habits (Ilahi, 2012). According to Ratumanan & Rosmiati (2019) the steps of the discovery learning model are as follows: (1) stimulation, (2) problem identification, (3) data collection, (4) data processing, (5) verification, and (6) generalization.

3. Research Methods

The implementation of this research was at SMK 1 Kendari. Where this research uses quantitative methods. The purpose of this study was to determine the effect of problem-based learning and discovery learning models on students' financial accounting learning outcomes at the State Vocational High School (SMK) 1 Kendari Southeast Sulawesi. The method used in this research is an experiment where this method is included in the quantitative method using the post test only control group design. The population in this study was the number of students, namely 185 students where by using the simple random method, the selected classes in this study were class XI1 and XI3 Department of Financial and Institutional Accounting (AKL) with a total of 68 students. The data collection technique in this study is to use an objective form test in the form of

multiple choice which is used to measure student learning outcomes after being given learning using a problem-based learning model and a discovery learning model. For data analysis using the analysis requirements test which includes normality test using Kolomogrow Smirnov and homogeneity test using Variance test (F test) and hypothesis testing techniques using t-test.

4. Result and Discussion

After research on the Impact of Problem-Based Learning and Discovery Learning Models on Student Learning Outcomes at State Vocational High School (SMK) Negeri 1 Kendari Southeast Sulawesi was completed, data was described, hypotheses were tested, and the research results were discussed. The study specifically sought to ascertain if, for students in the XI AKL1 and AKL3 courses of SMK Negeri 1 Kendari, problem-based learning models and discovery learning models differ in terms of student learning results. For every one of the two research participants, the results of the study were evaluated using a final multiple-choice exam of twenty questions and five response options (a, b, c, d, and e).

According to the data description, the average learning results of financial accounting and institutions of students taught using the Problem-Based Learning approach are at least 78 in the experimental class. This is so because, with an average learning score of 90, 94% of students received grades 79 to 100; 6% of students were unable to meet the KKM because of their learning results being below 78. Furthermore matching the school's KKM value of 78 was the classical average of the learning outcomes of students taught using the Discovery Learning learning paradigm in the control class. With an average learning outcome of 83, the findings revealed that only 74% of students got scores of 80 to 95. 26% of pupils, meanwhile, failed the KKM as their learning results remained below 78, with scores ranging from 70 to 77. The results of the hypothesis testing demonstrate that there is a very significant difference between the average learning outcomes taught utilizing the discovery learning model and the problem-based learning model. A bigger tcount value and ttable value (4.294> 1.697) at α0.05 and db = 33 support this as well as a significant value or probability (sig) less than α 0.05 (0.000 < 0.05).

Based on the results of the analysis of the two means difference test with the t test between the average financial accounting learning outcomes of students taught using the Problem Based Learning learning model and the average financial accounting learning outcomes of the Discovery Learning learning model, the significance value is smaller than α 0.05 (p = 0.000. The findings of

this test show that students taught using the Discovery Learning learning model and those taught using the Problem Based Learning learning model have different results regarding the financial accounting learning outcomes. Students' average financial accounting learning outcomes vary significantly between the two learning models when taught utilizing the Problem Based Learning and Discovery Learning approaches. Students that use the Problem Based Learning learning approach had average financial accounting learning results greater than those of the class taught using the Discovery Learning learning model, at 82.79. This is shown by comparing the average learning results of financial accounting taught using a problem-based learning model which is 90 and the average of courses taught with a discovery learning model which is 82.79.

The test findings show that the financial accounting teachers of SMK Negeri 1 Kendari have to use the Problem-Based Learning approach if they want to improve the learning results in their field. The Problem-Based Learning method emphasizes the resolution of issues or instances that occur in all companies and organizations.Using the Problem-Based Learning approach, students are expected to tackle issues straight forward rather of learning theories or ideas. By means of the Problem-Based Learning learning model, which is in line with the features of financial accounting material addressing the real issues of a company's financial transactions, students are driven to create solutions to the problems the teacher has studied.

The Probleam Discovery Learning model produces somewhat lower results than the Probleam Based Learning approach. This is so because the Discovery Learning model stresses the ability of students to make wireless observations or observations in order to extract information from the material or situations offered by the instructor, both individually and in groups. Focusing on the content the instructor assigns during the application of exploration learning presents challenges for the students. The difficulty is that every student has different ability to learn from the items or challenges they come across. Students are not used to learning under the Discovery Learning approach, another problem. While the discovery learning model presents more unfinished material that requires students' capacity to research or investigate to find a new concept or knowledge, the Probleam Based Learning model is quite suitable for learning financial accounting and institutions since financial accounting lessons and institutions present more data or information related to real cases in companies or institutions to be analyzed. Under the Discovery Learning paradigm, students' capacity to do research in pursuit of something significant to enhance their knowledge and abilities is essential. Using the two mean difference test (t test), the results of hypothesis testing

reveal a noteworthy average difference in learning outcomes between students taught with the Probleam Based Learning model and those taught with the Discovery Learning model whereby the significance value is smaller than the α value of 0.05 (0.000 <0.05).

5. Conclusions And Suggestions

Using problem-based learning models will help to enhance the learning outcomes in financial accounting courses in class XI AKL3 SMK negeri 1, according to the findings of study analysis and hypothesis testing. Using a discovery learning model, the average learning outcomes of students in class XI AKL1 reveal that they climb to 82.79; using a problem-based learning model shows average 90. The average learning outcomes taught using the problem-based learning model and the average learning outcomes taught using the discovery learning model vary noticeably according the findings of hypothesis testing. A higher tcount value and ttable value (4.294 > 1.697) at α 0.05 and a significant value or probability (sig) less than α 0.05 (0.000 < 0.05) reflect this. Strong evidence indicates from the test results of class XI of the Department of Accounting and Finance Institutions at SMK Negeri 1 Kendari that implementation of problem-based learning and discovery learning models has a considerable impact on student learning outcomes in financial accounting courses. This implies that professors of courses in financial accounting should use the Discovery Learning and Problem Based Learning strategies in the classroom to raise the results of student learning.

Based on the revealed research results, the researcher makes several recommendations, mostly the principal should assist the seamless learning process by means of seminars and learning strategies guided by professionals where teachers have the opportunity to create creative learning models to boost student motivation and creativity. Under these circumstances, especially with reference to discovery learning models, teachers might improve their capacity to use learning techniques. Moreover, by combining current ideas with fresh knowledge and truths in daily life and considering the degree of students' capacities in selecting and implementing learning models and changing the availability of time so that students may concentrate on cognitive knowledge and the development of positive attitudes in learning. The Kendari City Education Office also has to

provide training on certain learning techniques for teachers. To provide more objective and representative research results, other individuals may conduct similar studies with better approach.

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