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The Impact of the Contextual Teaching and Learning (CTL) Model on Student Learning Outcomes in Learning Banking Basics

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Abstract
This research aims to test the impact of the Contextual Teaching and Learning (CTL) model on student learning outcomes in basic banking courses at SMK Negeri 5 Madiun. This research was carried out in two cycles using a Classroom Action Research (PTK) design, involving 33 students from the accounting department. Data was collected through pre-tests, post-tests, student and teacher reflections, and classroom observations. The research results showed a significant increase in student learning outcomes from the first cycle, with an average final test score: of 58.33 to the second cycle and, an average final test score: of 93.93. Most students reported positive experiences with the CTL model, with increased engagement and understanding of the material. This research concludes that the CTL model effectively improves learning outcomes and student engagement, making it a valuable teaching strategy in vocational education. Research findings show that CTL can be the main approach to improving learning in vocational environments, especially in accounting and banking learning**.**
Keywords: Contextual Teaching and Learning (CTL), Student Learning Outcomes

Introduction

Vocational education in Indonesia, especially vocational high schools (SMK) in accounting, faces significant challenges in preparing students for the rapidly growing job market. Integrating 21st-century skills such as adaptability, collaboration, critical thinking, and digital literacy is becoming increasingly important in vocational education curricula (Pokhrel, 2024). However, the current system is often unable to keep up with the dynamic demands of the workforce, resulting in a mismatch between graduate skills and industry needs. In recent years, there has been a push for stronger partnerships between educational institutions and industry to ensure curriculum alignment with labor market requirements (Pokhrel, 2024). This collaboration is essential to creating a more relevant and dynamic educational experience. In addition, efforts are underway to reform the vocational education system, including revising curricula to include more elective courses and topics such as digital business and artificial intelligence.

The accounting profession faces unique challenges in vocational education. There is an increasing need to adapt to changing technology, incorporating advances such as the Internet of Things and integrated reporting into the curriculum (fe.ugm.ac.id, 2020). Traditional teaching methods often fail to effectively engage students or motivate them to pursue a career in accounting. This is proven in the case of SMKN 5 Madiun City, where observations show that more than 80% of class 10 accounting students have no interest in entering the accounting major, with many students showing disinterest during the lesson. The perception that the accounting profession has the potential to become obsolete due to technological automation poses a significant challenge in attracting students to take accounting programs (fe.ugm.ac.id, 2020). This perception, coupled with traditional teaching methods that may not adequately prepare students for the realities of the modern world of work, contributes to the low levels of motivation and engagement observed among students.

Previous research shows that innovative teaching methods can significantly increase student engagement and performance in vocational education. Research (Samsudin, Raharjo, & Widiasih, 2023) shows that

students who modern teaching models influence show better learning creativity and achieve more comprehensive learning outcomes compared to those in traditional learning environments. The use of technology in the classroom, such as game-based learning and interactive simulations, has been proven to make learning more interesting and accessible (Dimitrios, Labros, Nikolaos, Maria, & Athanasios, 2013) Contextual-based learning (CTL) has emerged as a promising approach to address these challenges. Contextual Teaching and Learning (CTL) is an educational method that connects the material taught with real-world situations, increasing student understanding and retention (Azis, 2017).

Research that has been conducted shows that CTL can significantly improve learning outcomes in a vocational education environment. Research by Qudsyi, Wijaya, & Widiasmara (2018) shows that CTL strategies can improve learning outcomes, by showing an increase in learning outcomes from 61.75% to 82.5% over two learning cycles. Apart from that, research results from (Singaraja, Genap, & Pelajaran, 2020); (Aji Tsaqofi Avisiena, Siswandari, 2021); (Pakpahan, 2022) shows that the implementation of contextual teaching and learning (CTL) learning models can improve learning outcomes.

At SMK Negeri 5 Madiun , the accounting program faces significant challenges in terms of learning outcomes and student engagement. Observation results show that more than 80% of class 10 students do not want to major in accounting. During lessons, some students were seen sleeping and using mobile phones, indicating a lack of interest in current teaching methods. Interviews with students revealed that the conventional lecture-based teaching method used by teachers was considered boring. This lack of engagement is reflected in student learning outcomes, with more than 60% of students falling below the Minimum Competency Criteria These findings are in line with broader research showing that traditional teaching methods in accounting education often fail to adequately prepare students for the dynamic and practical demands of the profession (Rehab U. Trabulsi, 2018).

Considering these challenges, it is clear that there is a need for intervention to improve the learning outcomes of students majoring in accounting at SMK Negeri 5 Madiun , especially in learning the basics of banking. This research aims to determine the effect of applying the Contextual Teaching Learning (CTL) model on student learning outcomes in learning the basics of banking. The importance of this research lies in its potential to provide empirical evidence about the effectiveness of CTL in improving student learning outcomes in vocational accounting education. By addressing the specific challenges faced by SMK Negeri 5 Madiun , this research can contribute to a broader understanding of effective teaching strategies in vocational education and has the potential to inform curriculum development and teaching practices in similar contexts across Indonesia.

Method

This research uses the Classroom Action Research method with a one-group pretest-posttest design. The research aims to improve student learning outcomes by providing action in two cycles using the Contextual Teaching and Learning (CTL) learning model. Each cycle consists of four main stages, called: planning, implementing actions, observing, and reflecting (Yanuarto et al., 2021).

This research design involves one group of students as subjects. Before the action is given, an initial test (pretest) is carried out to determine the initial conditions of student learning outcomes. After the actions in each cycle, an evaluation is carried out in the form of a final test (posttest) to measure the impact of the actions that have been given. The research focused on learning Banking Basics and was carried out in two cycles. Each cycle lasts for one meeting which includes four hours of study. The implementation of each cycle is designed based on the results of reflection from the previous cycle, to improve learning outcomes sustainably through the application of the CTL learning model (Yanuarto et al., 2021). The following is a diagram of the classroom action research design.

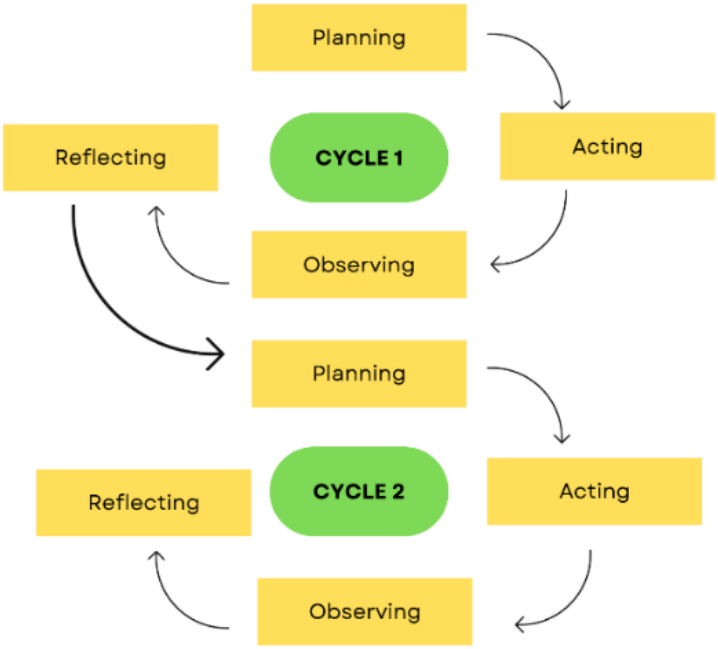

Figure 1 Classroom Action Research Design

The research was carried out at SMK Negeri 5 Madiun City, in the accounting and finance study program located on Jl. Merak, Nambangan Kidul, Kec. Manguharjo, Madiun City, East Java. The subjects of this research were students in class X AK 2 of SMK Negeri 5 Madiun City, totaling 33 students consisting of 10 male students and 23 female students. The research was carried out in the odd semester of the 2024/2025 academic year, namely in November 2024.

The instruments used in this research are as follows: learning tools consist of teaching modules, teaching materials, and multiple choice questions which are accessed via the Quizizz website after first testing their validity. The questions used include a pre-test, to measure students' initial knowledge before learning, and a post-test, to assess students' understanding after learning. Apart from that, teacher activity observation sheets, learning reflection questionnaires for students, and reflection sheets for teachers are also used.

Qualitative analysis was carried out to evaluate interactions between students and teachers during the learning process using the Contextual Teaching and Learning (CTL) model. This includes observations of student activity, teacher teaching strategies, and how learning can connect material with students' real-life contexts. Quantitative analysis was carried out by testing the pretest and posttest results in each cycle using the Gain Test (N-Gain) calculation. This method uses a formula designed by Hake to measure improvements in learning outcomes (Sukarelawan, Indratno, & Ayu, 2024). The analysis process was carried out with the help of SPSS version 25 software.

$$\text{N-gain} = (\text{Score Pretest-Score Posttest})/(100\text{-Score Pretest})$$

With the following N-gain value criteria:

Table 1 N-Gain Value Criteria

Nilai N-gain	Category
N-gain > 0,70	High
0,30 ≤ N-gain ≤ 0,70	Medium
N- Gain < 0,30	Low

Results and Discussion

This research was carried out by implementing two learning cycles. In the first cycle, the implementation of the Contextual Teaching and Learning (CTL) learning model went quite smoothly, although several obstacles reduced effectiveness. Observation results show that students are enthusiastic and enthusiastic during learning. However, when working on pre-test questions via the Quizizz site, a number of students had difficulty accessing it due to problems with the school's WiFi network, so the learning felt rushed and not well organized. Apart from that, some students are also reluctant to do practical interest calculations and journaling exercises because they do not understand the concept of normal account balance properly.

Based on the results of the learning reflection questionnaire filled out by students, around 67% of students revealed that they liked the learning model applied, felt they could be actively involved during the learning process, and felt that the model was suitable to help them understand the basics of banking better. However, almost 50% of students found it difficult to understand the material taught in cycle I, especially on the topics of calculating interest and journals. Students admitted that they did not understand the basic concepts related to calculating interest and preparing journals, which caused difficulties in completing the exercises and questions given. The results of the pretest and posttest of the first cycle before and after learning the basics of banking using the contextual teaching and learning model are shown in the table as follows.

Table 2 Student Learning Results in Cycle 1

No	Category	Pretest Score	Posttest Score	N-gain Value
1	Lowest Score	30	35	0,2428
2	Highest Score	70	90	(Low Criteria)
3	Mean	43,78	58,33	
4.	Completeness level	0%	12,12%	

The results of the pretest and posttest in the first cycle showed an increase in student learning outcomes after implementing the Contextual Teaching and Learning learning model in the Basics of Banking subject. The student's lowest score increased from 30 on the pretest to 35 on the posttest. Meanwhile, the highest score increased from 70 on the pretest to 90 on the posttest. The average student score also increased from 43.78 to 58.33, reflecting improvements in learning outcomes. However, the level of completion of students who reach the Minimum Completeness Criteria (KKM) of 75 is still relatively low, namely only 12.12% on the posttest compared to 0% on the pretest. Based on N-Gain calculations, the increase in student learning outcomes is 0.2428, which is in the low category. This shows that the effectiveness of learning still needs to be improved so that more students can achieve the expected level of completion.

In the second cycle, learning using the Contextual Teaching and Learning (CTL) model ran smoothly and effectively, with almost no problems during its implementation. Observation results show that students are actively involved in learning, and working on pretest and posttest questions via Quizizz can be accessed well. Time management also works effectively. Based on the reflection questionnaire filled out by students, more than 80% of students expressed that they liked this learning activity, felt actively involved, and felt that the material taught was easy to understand. Almost 97% of students stated that the learning method applied was very suitable for understanding the material. However, there are still around 20% of students who find it difficult to learn. The results of the pretest and posttest of the first cycle before and after learning banking basics using the contextual teaching and learning model are shown in the table as follows.

Table 3 Student Learning Results in Cycle 2

No	Category	Pretest Score	Posttest Score	N-gain Value
1	Lowest Score	45	65	0,7913
2	Highest Score	90	100	(High Criteria)
3	Mean	68,93	93,93	
4.	Completeness level	27,27%	93,93%	

The pretest and post-test results in the second cycle showed a significant increase in student learning outcomes after implementing the Contextual Teaching and Learning model in the Basics of Banking subject. The student's lowest score increased from 45 on the pretest to 65 on the posttest. The highest score also increased, from 90 on the pretest to 100 on the posttest. The average student score rose significantly, from 68.93 on the pretest to 93.93 on the posttest, reflecting excellent improvements in learning outcomes. The level of student completion also increased drastically, from 27.27% in the pretest to 93.93% in the posttest, which shows that the majority of students have reached the Minimum Completeness Criteria of 75. Based on the N-Gain calculation, the increase in student learning outcomes in the second cycle was 0.7913, which is classified as high. Overall, the increase in student learning outcomes in the second cycle was very significant, with learning effectiveness much higher than in the first cycle.

Based on the results of the pretest and posttest in the first and second cycles, show a significant increase in student learning outcomes. In the first cycle, although there was improvement, learning outcomes were still relatively low, with the majority of students not having reached the Minimum Completeness Criteria. However, in the second cycle, the implementation of the Contextual Teaching and Learning model had a positive impact, with a significant increase in scores, both in the average score, the highest score, and the level of student completion. Most students have reached the KKM, and the high N-Gain value (0.7913) indicates better learning effectiveness in the second cycle. Therefore, it can be concluded that the application of the Contextual Teaching and Learning model provides better results in improving student learning outcomes in the Basics of Banking subject.

This research is also consistent with studies conducted by (Zainul, 2023), which shows that the application of the CTL model improves learning outcomes in accounting subjects. Similar findings are also supported by research (Solichin, 2017) which shows an increase in student learning outcomes after implementing the CTL model in learning banking basics. The similarity of the results of this research with previous findings shows that the CTL learning model is indeed effective in improving student learning outcomes, especially in learning the basics of banking.

This research is in line with previous research which states that the principles of Contextual Teaching and Learning (CTL) are well suited to the needs of business and economics education, where an understanding of real-world practical applications plays a crucial role. The focus on linking theoretical concepts to practical situations is highly relevant, especially for subjects such as banking and finance, which are widely adopted in various international education systems(Rosário & Raimundo, 2024). In addition, research evaluating the effectiveness of Contextual Teaching and Learning (CTL) on students' comprehension abilities analyzed 21 effect sizes and found an overall effect size of 0.868. These results indicate that the application of CTL can significantly improve student learning outcomes when compared to conventional teaching methods (Tamur, Jehadus, Nendi, Mandur, & Murni, 2020). Additionally, by linking learning to real-world contexts, Contextual Teaching and Learning (CTL) encourages greater engagement and motivation among students, which in turn improves their learning outcomes. This approach makes the material more relevant so that students are more active in the learning process and gain a deeper understanding (Ummah, 2019).

Although the results of increased student learning appear significant, it is possible that other factors also play a role. The increase could be due in large part to the Hawthorne effect, in which students perform better because they realize they are being watched. In addition, improvement could also be related to students' adaptation to calculations and journaling over time. The results of this research have significant implications for learning practice, especially in subjects related to basic concepts in accounting and banking. The

application of the Contextual Teaching and Learning (CTL) learning model has proven effective in improving student learning outcomes, as was also found in research by (Haryanto, 2018), which shows that this model increases students' understanding in real-world contexts.

These findings can be used as a reference by teachers and educational practitioners to implement learning models that are student-focused and relevant to their context. This can help students understand basic concepts better and increase their motivation and involvement in learning, as explained by (Rahardjo, 2021), who emphasizes the importance of a context-based approach in increasing student participation.

However, this study also has several limitations that need to be considered. First, each cycle in this research was only carried out in one meeting, which could limit students' opportunities to understand the material in depth, given the limited time. Second, there were technical problems in the first cycle that might have influenced the pretest results, an issue also found in research by (Suhartono, 2020), who suggested better technical management in experiment-based research.

For further research, it is recommended that the duration of each cycle be extended and involve more than one meeting so that students have sufficient time to understand the material in depth. In addition, thorough technical preparation before conducting research is very necessary, including identifying and anticipating potential technical problems. This step will reduce the risk of disruption, especially in the initial research cycle, and ensure the data collection process runs smoothly, as suggested by (Yuniarti, 2019) in her research on the importance of technical preparation in educational studies.

Conclusion

This research shows that the application of the Contextual Teaching and Learning (CTL) model has a significant influence on improving student learning outcomes in learning the basics of banking at SMK Negeri 5 Madiun. Research results showing an increase in student learning outcomes from the first cycle to the second cycle prove that the CTL method is able to increase student involvement, make it easier to understand the material and improve overall learning outcomes. This research also shows that implementing a model that focuses on real contexts and actively involves students can help overcome the challenges faced by students at SMK Negeri 5 Madiun, as well as contribute to a broader understanding of effective teaching at the vocational education level.

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