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IMPROVING STUDENTS' LEARNING CONCENTRATION IN ACCOUNTING THROUGH THE INTEGRATION OF JIGSAW AND DIFFERENTIATED INSTRUCTION METHODS IN CLASS Z AKL SMK BATIK 1 SURAKARTA

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Abstract

Learning concentration is a critical factor influencing the success of the educational process. Without optimal concentration, students tend to absorb information poorly, negatively impacting their comprehension and academic achievement. Various factors can affect concentration, such as fatigue or tension due to the difficulty of learning materials. Therefore, an interactive and collaborative approach that meets students' individual needs is essential in accounting education. This research explores the use of a combined approach using the Jigsaw method and Differentiated Instruction to enhance student concentration in learning. This Classroom Action Research (CAR) employed a qualitative approach and was conducted in two cycles. The results showed a 20% improvement in the cognitive domain - rising from 60% in cycle I to 80% in cycle II. Affective and psychomotor indicators also improved by 20% - from 50% in cycle I to 70% in cycle II. These findings indicate that combining the Jigsaw method with Differentiated Instruction can effectively enhance student concentration in accounting learning.

BACKGROUND

According to Santrock (Caesarridha, 2021) learning concentration is the ability to focus attention, closely tied to memory. It plays a vital role in the success of learning outcomes. Without optimal focus, students struggle to comprehend the material, resulting in poor academic performance. Suryanto and Jihad argue that strong concentration enables students to better absorb content (Chyquitita et al., 2018), while Riinawati (2021) notes that lack of focus hinders learning effectiveness. Accounting, being a complex subject, requires effective teaching methods to foster student engagement and focus. Observations reveal that many students have yet to reach the desired level of concentration-evident in their lack of attention, low enthusiasm, and tendencies to talk or fall asleep during lessons.

Several factors contribute to low concentration. Prasanti found that fatigue and challenging material reduce students' focus (Chyquitita et al., 2018), while passive learning models tend to be boring and discourage active engagement (Irham et al., 2018). Thus, accounting instruction must be more interactive and collaborative. Diman and Syah (2023) highlight that the Merdeka Curriculum allows teaching modules to be adapted to learners' needs. Prasetyo and Abduh (2021)

emphasize the value of multi-directional interaction, while Septiana and Kurniawan (2018) stress the importance of student participation. Katawazai (2021) asserts that active involvement enhances students' competence. Observations indicated that the applied methods had not fully improved student concentration. Jigsaw and Differentiated Instruction emerged as promising methods. Jigsaw focuses on collaborative group work, while Differentiated Instruction tailors learning strategies to individual needs.

The Jigsaw method, developed by Aronson in the 1970s, emphasizes cooperation in small heterogeneous groups, individual responsibility, and communication skills (Fridaram et al., 2021). Kahar et al. (2020) state that Jigsaw enables students to independently understand material and teach it to their peers. Roseth et al. (Roseth, 2019) explains that the method begins with dividing students into small groups, assigning each a specific section of the material, followed by discussions in expert groups before returning to their original groups to share understanding.

Differentiated Instruction customizes learning based on student characteristics. Pramudita and Susilo (2024) emphasize that successful learning environments should meet individual student needs. Suwartiningsih (2021) explains that Differentiated Instruction involves modifying content, process, product, and environment according to students' learning styles and understanding levels. It starts with a pre-assessment, followed by varied instructional strategies tailored to individual traits.

Integrating both methods creates a dynamic learning environment. Students collaborate, exchange understanding, and develop social and communication skills. Differentiated Instruction is applied by adjusting guidance and tasks to match student capabilities.

In SMK Batik 1 Surakarta, X AKL students face difficulties in understanding accounting due to its analytical nature. Effective teaching methods are necessary to improve their concentration. This study confirms findings from Fridaram et al. (2021) regarding the effectiveness of combining Jigsaw and Differentiated Instruction in improving student focus in accounting classes.

Improved concentration positively impacts academic outcomes, as suggested by Drouet et al. (2023) and Katawazai (2021). Students not only gain better understanding but also enhance their critical thinking and problem-solving abilities. This study is highly relevant for vocational education, which demands strong technical skills for future careers. The implementation of innovative methods contributes to the overall quality of vocational education and supports national education goals.

This research aims to contribute to the development of more effective accounting teaching strategies, particularly by integrating Jigsaw and Differentiated Instruction. Jigsaw encourages active participation, individual responsibility, and teamwork, while Differentiated Instruction allows teachers to adapt materials and delivery methods to each student's learning style and ability. The combination is believed to foster a more engaging, focused, and personalized learning experience in accounting classes.

LITERATURE REVIEW

Learning Concentration in Accounting Education

Learning concentration, defined as the ability to sustain focused attention on learning tasks (Santrock in Caesarridha, 2021), is critical for academic success, particularly in complex subjects like accounting. Suryanto and Jihad (in (Chyquitita et al., 2018) emphasize that strong concentration enhances students' ability to absorb and retain material, while Riinawati (2021) warns that distractions lead to ineffective learning. Observations at SMK Batik 1 Surakarta corroborate these findings, revealing low student engagement (e.g., inattentiveness, lethargy) during accounting lessons. Prasanti (in Chyquitita et al., 2018) identifies contributing factors such as fatigue and poorly designed instructional methods, highlighting the need for interactive pedagogies to mitigate these challenges.

Theoretical Foundations of Jigsaw and Differentiated Instruction

1. Jigsaw Method

Developed by (Aronson, 1970), the Jigsaw method fosters cooperative learning through heterogeneous groups, where each member becomes an "expert" on a subtopic before teaching peers (Fridaram et al., 2021). This approach aligns with Social Interdependence Theory (Johnson, 1999) which posits that collaborative structures enhance motivation and accountability. Empirical studies demonstrate its efficacy: (Kahar et al., 2020) found that Jigsaw promotes independent learning and peer teaching, while (Roseth, 2019) observed improved communication skills and deeper material engagement.

2. Differentiated Instruction (DI)

Rooted in Constructivist Theory (Tomlinson, 2014), DI tailors content, process, and assessment to students' readiness, interests, and learning profiles. Suwartiningsih (2021) notes that DI addresses diverse needs through pre-assessments and adaptive strategies, a view supported by Pramudita & Susilo, (2024), who link DI to higher engagement in vocational settings. DI's flexibility is particularly relevant in accounting education, where analytical rigor demands personalized scaffolding (Septiana & Kurniawan, 2018).

Empirical Evidence and Research Gaps

Prior studies validate the synergy of Jigsaw and DI. Fridaram et al. (2021) reported a 25% increase in concentration when combining both methods, attributing this to active participation and customized support. However, gaps persist:

1. Contextual Limitations: Most research focuses on Western or general education settings (e.g., (Roseth, 2019), with scant attention to vocational accounting in Asia (Katawazai, 2021).
2. Implementation Challenges: Drouet et al. (2023) note uneven comprehension in Jigsaw groups, while Prasetyo & Abduh (2021) stress the need for teacher training to optimize DI.
3. Longitudinal Effects: Existing studies (e.g. Nurjanah et al. (2024) are short-term; the sustained impact of these methods remains understudied.

Positioning of the Current Study

This study addresses these gaps by:

1. Testing Jigsaw and DI in Indonesian vocational accounting classrooms, a novel context.
2. Incorporating practical accounting tasks (e.g., ledger preparation) to bridge theory and application.
3. Evaluating both quantitative (quiz scores) and qualitative (engagement metrics) outcomes across cycles.

The integration of these methods is hypothesized to enhance concentration by merging peer collaboration (Jigsaw) with individualized scaffolding (DI), as advocated by (Slavin, 1995) and (Tomlinson, 2014).

METHODS

Methods

This research employed Classroom Action Research (CAR) with a qualitative approach, aimed at enhancing student concentration in accounting lessons through the Jigsaw and Differentiated Instruction methods. The CAR design was based on the Kemmis and McTaggart model, which includes planning, action, observation, and reflection in a cyclical process.

Research Subjects

The research was conducted in class X AKL at SMK Batik 1 Surakarta, involving 38 students. The location was chosen based on initial observations that revealed ineffective teaching methods in improving student concentration.

Instruments

The instruments used were observation sheets focusing on three main aspects:

1. Cognitive: comprehension, readiness, and application of knowledge
2. Affective: attention to the teacher and active participation
3. Psychomotor: physical activity aligned with instruction and engagement in tasks

Procedures

The study consisted of two cycles, each with two sessions:

1. Cycle I implemented the methods to observe initial engagement. Success was measured by active participation, a minimum of 60% of students achieving the learning competency (KKM), and involvement in discussion and accounting tasks.
2. Cycle II refined the approach based on Cycle I reflection. The target increased to 70% active participation and 80% achieving KKM.

Evaluation tools included observations, questionnaires, and interviews.

Reflections from each cycle were used to adjust and improve teaching strategies.

FINDINGS

RESULT

Cycle I Results

The integration of the Jigsaw and Differentiated Instruction models was implemented through several stages. Students were grouped into home teams consisting of four members with varying levels of ability. The material on general ledgers was divided into four parts: T-account ledgers, two-column (Skontro)

ledgers, three-column staffel ledgers, and four-column staffel ledgers. Each group received a different section of the material based on its complexity and the members' capabilities.

Students assigned the same section formed expert groups to discuss the material in depth. Within these groups, they explored the content and prepared their findings to be shared with their home teams. The teacher provided assistance to groups that encountered difficulties. After the expert discussions, students returned to their home groups to explain the material to the others. Each group then prepared a presentation, followed by a question-and-answer session. The teacher evaluated the students' understanding through a quiz and conducted a class-wide summary of the material.

Observations showed that 60% of students were able to answer the quiz questions and summarize the material well, while 40% still struggled. Around 60% of students were prepared and ready to learn from the beginning of the lesson, while the remaining 40% were either talking, outside the classroom, or had not prepared their learning tools. Only 50% of students were fully focused when listening to the teacher's instructions, while the rest frequently asked for explanations to be repeated. Likewise, 50% of students actively participated in discussions, whereas the others tended to remain passive. Overall, student concentration improved from a pre-intervention range of 20%–40% to 50%–60%, although it still fell short of the 70%–80% target.

Several challenges were encountered during Cycle I. From the teacher's side, instructions were sometimes not clearly heard by students seated at the back. Time management was also suboptimal due to the need to tailor guidance to students' individual needs. Discussion dynamics were not balanced, especially regarding differences in group members' understanding. From the students' side, some still lacked focus, appeared sleepy, or engaged in side conversations. Many relied on peers who had a stronger grasp of the material. Additionally, some students lacked the confidence to ask questions unless approached directly by the teacher.

Improvement strategies for the next cycle included enhancing the teacher's time management skills, creating more balanced groups, and fostering a more conducive classroom atmosphere through ice-breaking activities and rewards for active students.

Cycle II Results

Improvements were made in Cycle II to enhance the effectiveness of learning. Key adjustments included better time management and the formation of more heterogeneous groups. The same material was retained, but with a greater emphasis on practical exercises in preparing general ledgers.

Students were grouped into their home teams before the lesson began, with more diverse compositions to ensure even distribution of understanding. The teacher divided a case study on ledger preparation into four parts. Students with the same tasks formed expert groups for discussion. Afterward, they returned to their home teams to share the results. Group presentations followed, accompanied by question-and-answer sessions. The teacher incorporated ice-breaking activities to maintain students' enthusiasm and energy.

To evaluate learning, the teacher administered a quiz to measure students' understanding. Observations indicated improved learning activity compared to Cycle I. A total of 80% of students answered the quiz questions correctly, while 20% still faced challenges due to a lack of confidence. The number of students prepared from the beginning of the lesson rose to 80%, while 20% remained less focused. Attention to the teacher's instructions increased to 70%, though 30% still required repeated explanations.

Student participation in discussions also rose to 70%, even though 30% remained passive in expert groups. The number of students paying attention to the teacher-through eye contact, note-taking, or nodding-rose to 70%, with 30% still showing a lack of focus. On-time task completion reached 70%, while the rest required additional time.

The teacher made improvements by delivering clearer instructions and managing classroom time more efficiently. Pre-determined group formations helped balance understanding across the class. From the students' perspective, there was an increase in both concentration and participation. Students became more active in discussions, asked more questions, and took greater responsibility for their assignments.

A comparison of Cycle I and Cycle II showed a 20% improvement across the cognitive, affective, and psychomotor domains. This progress confirms that the Jigsaw and Differentiated Instruction methods are effective in enhancing students' concentration in accounting lessons. However, continued evaluation and refinement are still needed for optimal results. Based on the data analysis, a clear increase in students' concentration was observed after implementing the teaching interventions in Cycles I and II. This improvement is further illustrated in the following chart, which compares students' concentration levels before and after the intervention:

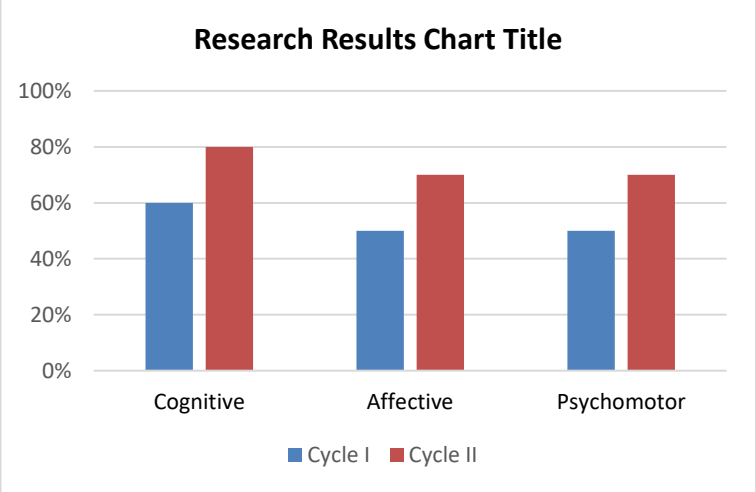

Figure 1. Research Results Chart

According to Figure 1. Research Results Chart, student concentration improved by 20% across all indicators—cognitive, affective, and psychomotor. This result demonstrates that combining the Jigsaw method and Differentiated Instruction is effective in enhancing learning concentration, particularly in vocational accounting education. In addition to quantitative gains, student

evaluations reflected positive behavioral changes: students became more focused during group discussions, more enthusiastic about completing tasks, and more diligent in understanding the material.

Student feedback also indicated that the use of varied instructional methods made learning more engaging and less monotonous. These findings align with Fridaram et al. (2021), who reported that classical guidance using the Jigsaw cooperative learning method significantly enhances student concentration.

The application of this combined method in accounting classes proved to be more enjoyable and interactive, which increased students' motivation and focus. As concentration levels rise, it is expected that academic performance will also improve. This supports Riinawati's (2021), conclusion that poor concentration tends to result in suboptimal learning outcomes.

Furthermore, this method provides students with a greater sense of responsibility for their individual tasks. The teacher granted students the freedom to present material and offered support to those facing difficulties. As a result, students became more focused on their assignments. In group activities, members paid attention, discussed, and actively asked questions during peer presentations. These behaviors indicate that the indicators of concentration were met, as students were able to engage in learning in a more structured and effective manner.

DISCUSSION

This study was a classroom action research aimed at improving students' learning concentration in accounting through the integration of the Jigsaw method and Differentiated Instruction. The results revealed a significant improvement in students' concentration, covering cognitive, affective, and psychomotor domains. This improvement reflects the effectiveness of applying interactive and collaborative teaching methods in enhancing focus and student engagement in accounting learning.

The consistency of these findings is supported by Cooperative Learning theory, which emphasizes the importance of social interaction and collaboration among students in the knowledge-building process (Slavin, 1995). The Jigsaw method, as a model of Cooperative Learning, has proven effective in increasing student motivation, participation, and academic performance, as it requires each student to become an "expert" in a particular part of the material and teach it to their peers. A study by Drouet et al. (2023) found that the Jigsaw method facilitates better social interaction among students, positively influencing their motivation and understanding of academic concepts. Similarly, research by Nurjanah et al. (2024) emphasized that combining the Jigsaw model with a game-based approach can enhance student concentration.

In addition, the strategic application of Differentiated Instruction also contributed significantly to improving concentration. According to (Tomlinson, 2014), Differentiated Instruction is a pedagogical approach that adapts content, process, product, and learning environment based on students' readiness, interests, and profiles. In the context of complex subjects like accounting, this adaptation enables students to learn at their own pace and in their preferred learning style, leading to greater focus and active participation. Subban (2006)

stated that consistent implementation of Differentiated Instruction can increase engagement and concentration, particularly in heterogeneous classrooms.

The increased concentration observed in this study also aligns with Setiani's (2014) findings, which state that learning concentration directly influences academic achievement. Students with higher concentration levels are more capable of absorbing information effectively and applying it to solve academic problems. Indicators of this improvement included increased participation in discussions, greater task readiness, and enhanced ability to understand and explain the material.

Despite these positive outcomes, certain challenges need to be addressed for further development. One major issue is the varying ability levels among students, which led to some relying heavily on more capable peers. Drouet et al. (2023) noted that while the Jigsaw method is effective in enhancing social interaction and conceptual understanding, additional strategies are required to ensure equal comprehension among all students.

Overall, this study provides empirical evidence that the integration of the Jigsaw and Differentiated Instruction methods contributes positively to improving students' concentration in accounting learning. The success of this approach stems from increased active interaction among students, the opportunity to re-teach materials to peers, and the customization of teaching strategies to meet individual learning needs. Moreover, this method aligns with the principles of student-centered learning, which emphasize active student involvement in the learning process (John D. Bransford, 2000). Therefore, it is recommended that this method be more widely implemented in accounting education at vocational high schools to enhance the quality of learning and students' academic performance.

CONCLUSION

The collaboration between the Jigsaw method and Differentiated Instruction in this study was carried out over two learning cycles, each consisting of three instructional hours or three 45-minute sessions. Overall, the implementation of these methods proved to be effective in enhancing students' learning concentration in accounting. Students became more focused during both individual and group activities. Improvements were observed across all concentration indicators from Cycle I to Cycle II. The cognitive indicator increased by 20%, from 60% in Cycle I to 80% in Cycle II, while the affective and psychomotor indicators each rose by 20%, from 50% to 70%. Although there was a noticeable improvement in learning concentration, it is still recommended that teachers continue to evaluate and refine their instructional strategies to further maximize student concentration and ultimately improve academic performance.

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