PEDAGOGIK JURNAL PENDIDIKAN
P-ISSN : 2528-5793
E-ISSN : 2354-7960

IMPROVING STUDENT LEARNING OUTCOMES THROUGH THE IMPLEMENTATION OF DIFFERENTIATED LEARNING IN A PROBLEM-BASED LEARNING MODEL

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Received: May 2023	**Accepted:** June 2024	**Published:** June 2024
DOI: https://doi.org/10.33650.pjp.v11i1.6146		

Abstract : *The aim of this research is to determine the extent to which students' learning outcomes have improved through the application of differentiated learning in a Problem-Based Learning (PBL) model in the Economics subject. The study employs a action research, consisting of two cycles, beginning with a pre-cycle. Each cycle includes the stages of planning, implementing, observing, and reflecting. The results of the research indicate an improvement in students' affective learning outcomes, with pre-cycle data showing 85% (good category), Cycle I showing 82% (good category), and Cycle II showing 88% (very good category). Psychomotor learning outcomes also showed an increase, starting from 78% in the pre-cycle (good category), rising to 82% in Cycle I (good category), and reaching 86% in Cycle II (very good category). Cognitive learning outcomes demonstrated significant improvement as well, with pre-cycle average scores at 57 (10 students achieving the passing grade, 28%), Cycle I average scores at 77 (26 students achieving the passing grade, 72%), and Cycle II average scores at 86 (31 students achieving the passing grade, 86%). The research demonstrates that the implementation of differentiated learning within a Problem-Based Learning model effectively enhances student learning outcomes in the Economics subject.*

Keywords : *Learning Outcomes; Differentiated Learning; Problem Based-Learning Model.*

Abstrak : *Tujuan penelitian ini adalah untuk menentukan sejauh mana hasil belajar siswa meningkat melalui penerapan pembelajaran berdiferensiasi dalam model Pembelajaran Berbasis Masalah (PBM) pada mata pelajaran Ekonomi. Penelitian ini menggunakan penelitian tindakan yang terdiri dari dua siklus, dimulai dengan prasyarat. Setiap siklus meliputi tahap perencanaan, pelaksanaan, pengamatan, dan refleksi. Hasil penelitian menunjukkan peningkatan hasil belajar afektif siswa, dengan data prasyarat menunjukkan 85% (kategori baik), Siklus I menunjukkan 82% (kategori baik), dan Siklus II menunjukkan 88% (kategori sangat baik). Hasil belajar psikomotorik juga menunjukkan peningkatan, dimulai dari 78% pada prasyarat (kategori baik), naik menjadi 82% pada Siklus I (kategori baik), dan mencapai 86% pada Siklus II (kategori sangat baik). Hasil belajar kognitif menunjukkan peningkatan signifikan juga, dengan skor rata-rata prasyarat sebesar 57 (10 siswa yang mencapai nilai kelulusan, 28%), skor rata-rata Siklus I sebesar 77 (26 siswa yang mencapai nilai kelulusan, 72%), dan skor rata-rata Siklus II sebesar 86 (31 siswa yang mencapai nilai kelulusan, 86%). Penelitian ini menunjukkan bahwa penerapan pembelajaran berdiferensiasi dalam model Pembelajaran Berbasis Masalah secara efektif meningkatkan hasil belajar siswa pada mata pelajaran Ekonomi.*

Kata Kunci : *Hasil Belajar; Pembelajaran Berdiferensiasi; Model Problem-Based Learning.*

INTRODUCTION

Education serves as a fundamental foundation for enhancing the quality of human resources by actively developing students' potentials, training their thinking skills from lower-order to higher-order thinking (Gulistan Ahmed, 2016). Therefore, education is crucial in shaping human quality. In the development of the 21st century, the education provided to students must be flexible, meaning it should adapt to the generation of students, the environment, the times, and technological advancements (Malik, 2018; Sullivan, 2001).

Ki Hadjar Dewantara's thought that "children grow based on their unique natural strengths; it is impossible for educators to turn rice into corn or vice versa" underpins the current curriculum targets in Indonesia (Mukaffan, Mundiri, Wahyuningsih, & Romla, 2023). This principle advocates for learning that provides students with the widest opportunities to develop their potentials, resulting in higher-quality education. The efforts to improve the quality of classroom learning depend on the teacher's role in accurately using approaches, models, methods, media, and learning strategies. These choices must consider the diversity of students, including their readiness to learn, learning interests, and learning profiles.

Evidence shows that some students are less interested in and enjoy economics subjects due to inappropriate learning models, uninteresting learning media, and boring teaching methods. This indicates that teachers fail to accommodate student diversity, leading to low student learning outcomes. Based on Midterm Assessment (PTS) data for Class XI IPS 4 at SMAN 11 Bandung, students' learning outcomes remain low, with no students achieving an excellent score (≥ 92), 4 students achieving good scores (81-91), 9 students achieving sufficient scores (75-83), and 23 students scoring below 75. Consequently, the classical completeness percentage for Class XI IPS 4 is still very poor at 36.11%. Many students in Class XI IPS 4 have not achieved completeness, likely due to several factors, such as inappropriate learning strategies, materials that are not accessible to students' comprehension levels, and unengaging media. This means that the learning process conducted by teachers has not accommodated the diversity of students with varying readiness, interests, learning styles, and abilities, resulting in low learning outcomes. According to Sudjana (in Iskandar, 2021), "Learning outcomes are changes in individual behavior encompassing cognitive, affective, and psychomotor aspects, influenced by two main factors: factors within the student and external or environmental factors."

Teachers need to carefully understand student diversity to produce quality learning, as evidenced by improved learning outcomes (Husna, Mundiri, & Agus R, 2023). One way to accommodate student diversity and enhance learning outcomes is through differentiated learning. Differentiated learning is oriented towards students' needs, interests, and profiles, while still aligning with learning objectives. This approach aims to optimize the learning process (Moningka, 2022). The challenges faced by teachers in implementing differentiated learning using the Problem Based Learning (PBL) model include designing diagnostic

assessments, conducting diagnostic assessments, preparing appropriate content, implementing differentiated learning with the PBL model based on students' learning styles, and assigning tasks according to each student's learning style, resulting in low student interest in learning (Sumarni, 2023).

Therefore, the strategy of differentiated learning can be applied within the steps of the Problem Based Learning model. The Problem Based Learning (PBL) model involves students in problem-solving to gain a deep understanding. According to Krzic et al. (2020), "the steps of the Problem Based Learning (PBL) model include phase 1: presenting the problem to the students, phase 2: organizing students for learning, phase 3: supporting group investigation, phase 4: developing and presenting artifacts, and phase 5: analyzing and evaluating the problem-solving process."

When using the PBL model, the presentation of problems must be adjusted to meet students' needs, considering their readiness to learn or their basic abilities. Although students have diverse characteristics, the learning process must foster the 4C characteristics (Critical thinking, Collaboration, Communication, and Creative Thinking) as students engage in problem-solving cases. It is crucial for educators to understand and map out the diversity of students as a consideration in using the Problem Based Learning (PBL) model, integrated with the application of differentiated learning strategies. Therefore, the researcher aims to improve the learning process by developing learning that accommodates the diversity of students, with the goal of enhancing student learning outcomes through the application of differentiated learning within the Problem Based Learning model.

METHOD

The research method used is Classroom Action Research (CAR). This method involves implementing real actions as part of the research activities to solve specific classroom problems (Warso, 2021). The study aims to address issues faced by teachers to find the best solutions. The subjects of this research are 36 students (18 females and 18 males) from Class XI IPS 4 at SMAN 11 Bandung during the even semester of the 2022/2023 academic year. The research is designed in two cycles, starting with a pre-cycle, Cycle I, and Cycle II. The pre-cycle was conducted on Monday, May 4, 2023, Cycle I on Thursday, May 11, 2023, and Cycle II on Thursday, May 25, 2023. According to Kemmis and McTaggart (in Nurhamami, 2022). Thus, this research is a dynamic process that occurs in one or more cycles, each consisting of four phases: planning, action, observation, and reflection

According to Suyadi, the research design to be implemented in each cycle consists of; 1) Planning; Planning is the first step is thorough and careful planning (Suwartiningsih, 2021). In planning of Action Research, there are three basic activities: problem identification, problem formulation, and problem-solving. Each activity includes sub-activities that should be carried out to support the completeness of the planning stage; 2) Implementation. The

implementation involves applying what was planned in the first stage; 3) Observation. Observation is the step involves measuring the extent to which the actions have achieved their goals. The researcher should describe the types of data collected, how they were collected, and the tools or instruments used for data collection (tests, questionnaires/observations, etc.); and 4) Reflection. The reflection involves reviewing what has been done, allowing the researcher to reflect on their experiences clearly, identifying strengths and weaknesses.

These four phases are implemented in research conducted in class XI IPS 4, beginning with planning in the form of lesson plans (RPP), learning media, and research instruments (cognitive test questions and observation sheets). The implementation follows the plans made, observing the learning process using observation sheets, and concluding with a reflection phase to improve the planning for the next cycle.

The data collection techniques used are of two types: tests and non-tests. The test technique, used to measure learning outcomes, involves written tests. The non-test technique includes observation, interviews, and documentation. The data analysis techniques used for student learning outcomes include qualitative and quantitative data analysis. Quantitative data is obtained through cognitive learning outcome tests by calculating the average cognitive learning outcomes and the percentage of student activity. Qualitative data is obtained from observations, analyzed, and presented as percentages, concluding with the drawing of conclusions.

RESULT AND DISCUSSION

Research on improving student learning outcomes through the implementation of differentiated learning in a problem-based learning model produced the following findings;

1. Learning Outcomes in the Pre-Cycle Phase

Based on the cognitive learning outcomes in the pre-cycle phase for 36 students, it was found that the results were still below the Minimum Competency Criterion (KKM) or far from the expected standard, as many students scored below 75. The pre-cycle test results are shown in Table 1.

Table 1: Pre-Cycle Cognitive Learning Outcomes of Students

No	Aspect	Description
1	Number of students taking the test	36 Person
2	Number of students who passed	10 Person (28%)
3	Number of students who did not pass	26 Person (72%)
4	Total Score	2060
5	Highest Score	80
6	Lowest Score	20
7	Average Score	57

Table 4 shows that the highest score achieved by the students was 80, and the lowest score was 20. The average score obtained was 57. The pre-cycle cognitive learning outcomes data can be illustrated in the following diagram;

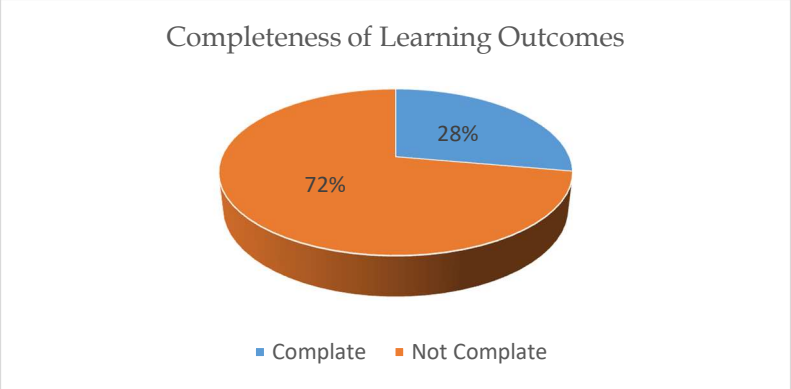

Figure 1: Diagram of Completeness of Pre-Cycle Students' Cognitive Learning Outcomes

Based on the diagram 2, it shows that 10 students passed, representing 28%, while 26 students did not pass, representing 72%. The affective domain learning outcomes in the pre-cycle phase were 82%, categorized as good, while the psychomotor domain learning outcomes in the pre-cycle phase were 78%, also categorized as good. The learning outcomes for Cycle I after the implementation of problem-based learning are illustrated in the graph below;

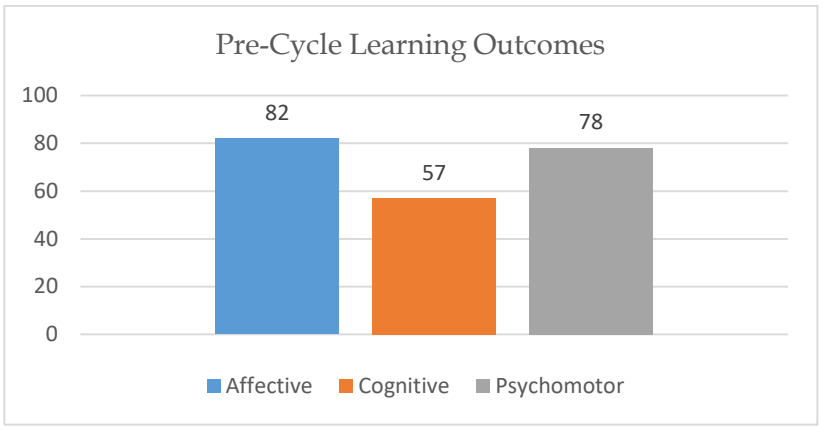

Figure 2: Pre-Cycle Learning Outcomes

Based on the pre-cycle learning outcome data, the low cognitive learning results indicate that many students did not achieve passing scores. This suggests that students may have had difficulty understanding the learning material and lacked interest in learning, implying that the teaching process did not accommodate the diversity of the

students. Therefore, it is necessary to improve the teaching process by implementing differentiated instruction within the problem-based learning model. These instructional improvements were carried out through classroom action research in two stages like Cycle I and Cycle II.

2. Cycle I Learning Outcomes

After implementing the Cycle I instruction, the cognitive learning outcomes in the Economics subject, with the application of differentiated instruction within the problem-based learning model, are as follows;

Table 2: Cycle I Cognitive Learning Outcomes of Students

No	Aspect	Description
1	Number of students taking the test	36 Person
2	Number of students who passed	26 Person (72%)
3	Number of students who did not pass	10 Person (28%)
4	Total Score	2780
5	Highest Score	90
6	Lowest Score	40
7	Average Score	77

Table 2 shows that the highest score obtained by the students was 90, and the lowest score was 40. The average score achieved was 77. The cognitive learning outcomes data for Cycle I can be illustrated in the following diagram;

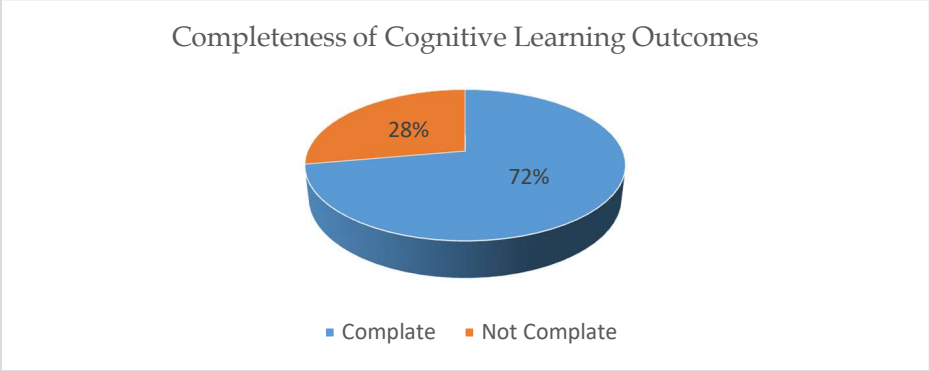

Figure 3: The Completeness Diagram of Cycle I Students' Cognitive Learning Outcomes

Based on the diagram, it shows that 26 students passed, representing 72%, while 10 students did not pass, representing 28%. The affective domain learning outcomes in Cycle I were 84%, categorized as good, while the psychomotor domain learning outcomes in Cycle I were 82%, also categorized as good. The following graph illustrates the pre-cycle learning outcomes after the implementation of differentiated instruction within the problem-based learning model;

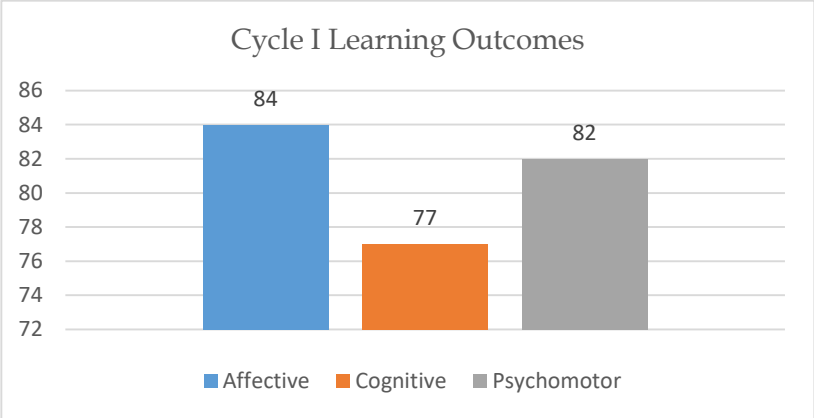

Figure 4: Cycle I Learning Outcomes

3. Cycle II Learning Outcomes

After the implementation of Cycle II instruction, the cognitive learning outcomes in the Economics subject, with the application of differentiated instruction within the problem-based learning model, are as follows;

Table 3: Cycle II Cognitive Learning Outcomes of Students

No	Aspect	Description
1	Number of students taking the test	36 Person
2	Number of students who passed	31 Person (86%)
3	Number of students who did not pass	5 Person (14%)
4	Total Score	3100
5	Highest Score	100
6	Lowest Score	50
7	Average Score	86

Table 3 shows that the highest score obtained by the students was 100, and the lowest score was 50. The average score achieved was 86. The cognitive learning outcomes data for Cycle II can be illustrated in the following diagram;

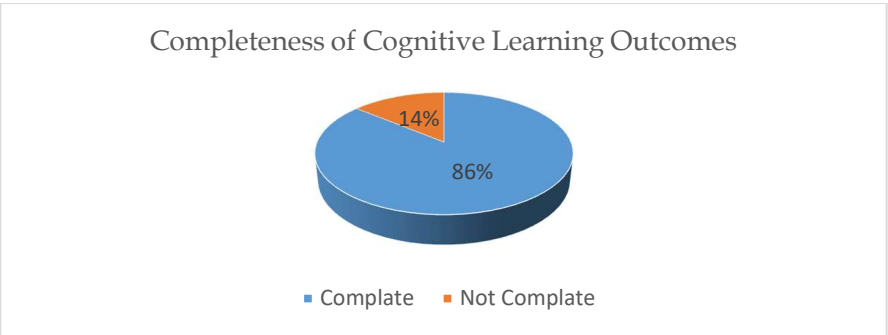

Figure 5: The Completeness Diagram of Cycle II Students' Cognitive Learning Outcomes

Based on the diagram, it shows that 26 students passed, representing 86%, while 10 students did not pass, representing 14%. The affective domain learning outcomes in Cycle II were 88%, categorized as excellent, while the psychomotor domain learning outcomes in Cycle II were 86%, also categorized as excellent. The following graph illustrates the learning outcomes for Cycle II after implementing differentiated instruction within the problem-based learning model.

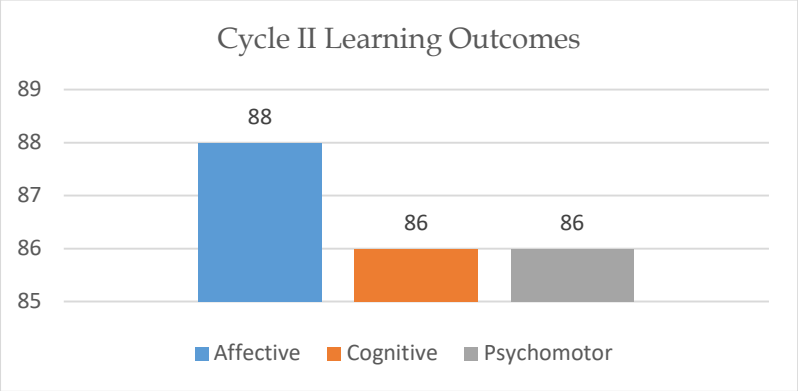

Figure 6: Cycle II Learning Outcomes

The classroom action research was conducted in cycles, each comprising the stages of planning, implementation, observation, and reflection. During the pre-cycle planning stage, lesson plans, learning media, and research instruments (cognitive test questions and observation sheets) were developed using the problem-based learning model in regular instruction. For the planning stages of Cycles I and II, lesson plans, learning media, and research instruments (cognitive test questions and observation sheets) were created, integrating differentiated instruction into the problem-based learning model. Improvements were made in the planning for Cycle II based on the reflections from the implementation in Cycle I.

The differentiated instruction integrated into the problem-based learning model was chosen as a solution to address the issues encountered in class XI IPS 4. The differentiated instruction was designed by considering the diversity of students, viewed from their learning readiness, learning interests, and learning profiles (focused on learning styles) (Joseph et al., 2013; Landrum & McDuffie, 2010). The planning of differentiated instruction must accommodate the diversity of students. In applying the problem-based learning model, each step of the learning activities should align with the aspects of differentiated instruction, including content differentiation, process differentiation, product differentiation, and learning environment differentiation. By implementing differentiated instruction within the problem-based learning model in the lesson plans for Cycles I and II,

we aimed to help students develop their abilities according to their profiles. This approach is expected to enhance student learning outcomes across cognitive, affective, and psychomotor domains. The classroom action research described follows a cyclical process comprising planning, implementation, observation, and reflection stages. This approach aligns with the theoretical framework of action research in education, which emphasizes iterative cycles to systematically improve teaching practices and student outcomes (Kemmis et al., 2014).

The implementation of differentiated instruction within the PBL model in Cycles I and II aimed to help students develop their abilities according to their profiles, enhancing their learning outcomes across cognitive, affective, and psychomotor domains. Cognitive outcomes relate to knowledge acquisition and intellectual skills (Bloom, 1956). Affective outcomes pertain to attitudes, emotions, and values (Masia & Bloom, 1964), while psychomotor outcomes involve physical skills and motor coordination (Wilson, 2016). The integration of differentiated instruction into the PBL model represents a strategic approach to addressing the diverse learning needs of students. By tailoring the educational experience to individual profiles, this method holds promise for improving overall student engagement and achievement across multiple learning domains.

The implementation stage was conducted based on the plans formulated during the planning stage such as Pre-Cycle, Cycle I, and Cycle II implementation. During the pre-cycle implementation using the problem-based learning model, students were initially presented with a problem in the form of an article displayed on PowerPoint slides. Students were grouped heterogeneously, given the same LKPD (Learning Activity Sheet) tasks by the teacher, guided through group discussions, and concluded with group presentations in front of the class. Throughout the pre-cycle learning process, it was observed that students did not fully display their abilities, potential, and interest in learning. This was due to the grouping not aligning with the students' preferences and the information presented not accommodating their diverse needs.

In Cycle I, differentiated instruction was applied within the problem-based learning model. The session began with students being presented with problems through videos and articles, accessible via a barcode scan (content differentiation). Students were grouped based on their learning styles (visual, auditory, and kinesthetic), and assistance was provided to those facing learning difficulties (process differentiation) (Turki, 2014). Students were given the freedom to create their presentation products (product differentiation), and class agreements were made collaboratively between the teacher and students (learning

environment differentiation). During Cycle I, it was noted that students were able to learn according to their learning styles, showed increased activity, and there was an improvement in their cognitive development. However, the products created by the students lacked differentiation, as most opted to create PowerPoint presentations.

Cycle II served as an improvement from Cycle I, continuing to apply differentiated instruction within the problem-based learning model. Similar to Cycle I, students were presented with problems through videos and articles, accessed via barcode scans, and additionally, student representatives were asked to role-play (content differentiation). Students were grouped based on their readiness and interest in learning, with additional support provided to those experiencing difficulties (process differentiation) (Tomlinson et al., 2003). Students had the freedom to create their presentation products with guidance from the teacher (product differentiation), and class agreements were reinforced, including arranging seating for maximum comfort (learning environment differentiation). The learning process during Cycle II showed notable improvements from Cycle I. The learning environment was more enjoyable and meaningful, and there was a significant development in the students' potential.

The application of differentiated instruction within the problem-based learning model in Cycles I and II was a strategic response to the diverse learning needs observed in class XI IPS 4. By addressing students' varying readiness levels, learning interests, and profiles, this approach aimed to create a more inclusive and effective learning environment. Implementing differentiated instruction within the problem-based learning model proved effective in addressing the diverse needs of students in class XI IPS 4. This approach not only enhanced students' cognitive development but also made the learning process more engaging and meaningful. The iterative cycles of planning, implementation, observation, and reflection facilitated a responsive and adaptive teaching strategy that contributed to the overall improvement in student learning outcomes.

During the observation stage, the activities of students were monitored throughout the learning process using research instruments (cognitive tests and observation sheets) to measure the success of student learning outcomes. The graphs below depict the learning outcomes for class XI IPS 4 across different cycles following the implementation of differentiated instruction within the problem-based learning model. Based on the comparative graphs, there is a noticeable improvement in the students' affective learning outcomes. In the pre-cycle stage, the affective learning outcome was 82% (categorized as good). This increased by 2% to 84% (still categorized as good) in Cycle I, and further increased to 88% (categorized as excellent) in Cycle II. This indicates a progressive

enhancement in students' affective learning outcomes following the implementation of differentiated instruction within the problem-based learning model. The affective learning outcomes include indicators such as politeness, discipline, responsibility, and proactivity.

Similarly, the comparison of psychomotor learning outcomes shows an increase from 78% (categorized as good) in the pre-cycle stage to 82% (categorized as good) in Cycle I, and further to 86% (categorized as excellent) in Cycle II. This improvement signifies that the differentiated instruction within the problem-based learning model positively impacted the students' psychomotor skills. The indicators for psychomotor learning outcomes include creativity in presentation products, language use, articulation, self-confidence, and the ability to defend and respond to questions or objections. The cognitive learning outcomes, as illustrated in the graphs, show a significant increase in the average scores. In the pre-cycle stage, the average score was 57. This improved to an average score of 77 in Cycle I and further increased to an average score of 86 in Cycle II. This indicates a continuous improvement in students' cognitive learning outcomes following the implementation of differentiated instruction within the problem-based learning model. The cognitive learning outcomes are further detailed in the table below, which shows the mastery of learning outcomes both individually and classically.

Table 4: Comparison of Students' Cognitive Learning Mastery

Description	Complete Students		Students do not complete		Average
	Frequency	%	Frequency	%	
Precycle	10	28%	26	72%	57
Cycle 1	26	72%	10	28%	77
Cycle 2	31	86%	5	14%	86

The table 4 shows that in the pre-cycle stage, 10 students (28%) achieved mastery, while 26 students (72%) did not. In Cycle I, the number of students who achieved mastery increased to 26 (72%), with 10 students (28%) not achieving mastery. In Cycle II, the number of students achieving mastery further increased to 31 (86%), with only 5 students (14%) not achieving mastery. This data demonstrates a significant improvement in students' cognitive learning outcomes, with more students meeting the minimum competency criterion (KKM) score of 75 in class XI IPS 4 following the implementation of differentiated instruction within the problem-based learning model.

The observation and data analysis indicate that implementing differentiated instruction within the problem-based learning model significantly enhances students' learning outcomes across affective, psychomotor, and cognitive domains (Mukaffan et al.,

2023). The iterative cycles of planning, implementation, observation, and reflection allowed for continuous improvements and adjustments to meet the diverse needs of students effectively (Chassels & Melville, 2009). This approach not only improved cognitive scores but also positively impacted students' behavior, engagement, and practical skills. The results underscore the importance of creating an inclusive and supportive learning environment tailored to the unique needs of each student.

During the reflection stage, the strengths and weaknesses of the planning and implementation phases in this classroom action research were evaluated. This stage aimed to identify areas for improvement to enhance the teaching and learning process. The pre-cycle phase had several strengths, including the involvement of students in real-world problems, group discussions, and presentations integrated with technology. However, there were notable weaknesses, such as the exclusive use of PowerPoint slides with articles, which did not accommodate diverse learning styles. Additionally, there was a lack of creativity in student-produced outputs, underutilization of student potential, low student interest in learning, and inconsistent groupings that did not align with students' preferences (Hasanah, 2023). These weaknesses served as the foundation for planning improvements in subsequent cycles, focusing on differentiated instruction within the problem-based learning model to enhance student learning outcomes.

In Cycle I, the implementation of differentiated instruction led to increased student interest in learning, better alignment with individual learning styles, the development of critical thinking skills, and improved cognitive development. Despite these successes, the cycle revealed a lack of creativity in student-produced outputs, with most students creating similar PowerPoint presentations, and inadequate accommodation for kinesthetic learners. These insights were used to refine the instructional approach in Cycle II.

Cycle II saw further improvements, with a more enjoyable learning process as evidenced by increased student enthusiasm, a safe and comfortable learning environment, enhanced student understanding, higher student engagement, and the development of creativity and potential. However, a notable weakness was the limited time available for group presentations. This constraint will be addressed in future iterations by better managing time allocations. The classroom action research demonstrates the effectiveness of differentiated instruction within the problem-based learning model in improving student learning outcomes as figure 7.

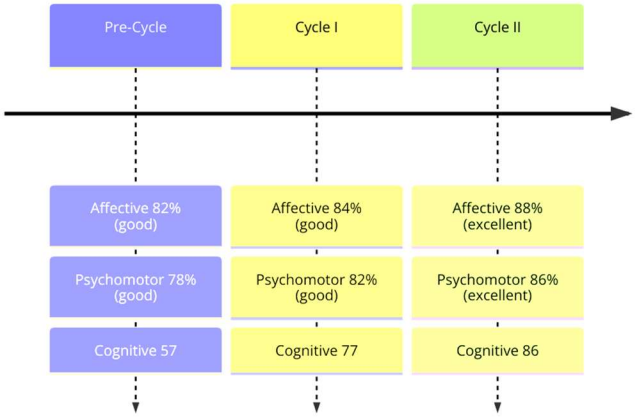

Figure 7: The Progress in Affective, Psychomotor, and Cognitive Domains

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This classroom action research confirms that implementing differentiated instruction within the problem-based learning model can significantly enhance student learning outcomes. The study shows improvements in cognitive, affective, and psychomotor domains, demonstrating the model's effectiveness in addressing diverse student needs. Differentiation in content, learning processes, products, and learning environments created a more inclusive and engaging learning experience (Cochran, 2021). The classroom action research confirms that implementing differentiated instruction within the problem-based learning model can significantly enhance student learning outcomes. The study shows improvements in cognitive, affective, and psychomotor domains, demonstrating the model's effectiveness in addressing diverse student needs. Differentiation in content, learning processes, products, and learning environments created a more inclusive and engaging learning experience (Celik, 2019; Kanevsky, 2011; Mulyawati., et al, 2022).

This classroom action research followed a structured cyclical process comprising planning, implementation, observation, and reflection stages. During the pre-cycle implementation using the problem-based learning model, students were initially presented with a problem in the form of an article displayed on PowerPoint slides. Students were grouped heterogeneously, given the same LKPD (Learning Activity Sheet) tasks by the teacher, guided through group discussions, and concluded with group presentations in front of the class. However, the pre-cycle revealed that students did not fully display their abilities, potential, and interest in learning. This was primarily due to the grouping not aligning with students' preferences and the information presented not accommodating their diverse needs.

The findings of this study align with existing research on the effectiveness of differentiated instruction and problem-based learning models in enhancing student learning outcomes. For instance, Tomlinson (2003) highlights the importance of differentiated instruction in addressing diverse learning needs, improving student engagement, and fostering academic growth. Similarly, research by Barrows and Tamblyn (1980) supports the use of problem-based learning to enhance critical thinking, problem-solving skills, and self-directed learning. Furthermore, studies such as those by Vygotsky (1978) on the Zone of Proximal Development emphasize the importance of providing tailored support to students based on their readiness and learning profiles (Lundgren, 2023; Eun, 2019). This approach aligns with the process differentiation implemented in this study, where students received targeted assistance based on their individual needs.

The implications of this study are significant for educators seeking to enhance student learning outcomes through differentiated instruction within a problem-based learning framework. The iterative cycles of planning, implementation, observation, and reflection allowed for continuous improvements and adjustments to meet the diverse needs of students effectively. The study demonstrates that the cognitive learning outcomes showed a substantial increase from an average score of 57 in the pre-cycle to 77 in Cycle I and 86 in Cycle II. This indicates that students' understanding and mastery of the learning material improved significantly with the implementation of differentiated instruction.

The affective learning outcomes improved from 82% in the pre-cycle to 84% in Cycle I and 88% in Cycle II. Psychomotor outcomes similarly increased from 78% in the pre-cycle to 82% in Cycle I and 86% in Cycle II. These improvements suggest that differentiated instruction positively impacted students' attitudes, behaviors, and practical skills. Differentiation in content, learning processes, products, and learning environments created a more inclusive and engaging learning experience. Students were able to learn in ways that suited their individual needs and preferences, which enhanced their overall engagement and motivation. By accommodating the varying readiness levels, interests, and learning profiles of students, the differentiated instruction within the problem-based learning model effectively addressed the diverse needs of students. This approach not only improved cognitive scores but also positively impacted students' behavior, engagement, and practical skills. The classroom action research confirms that implementing differentiated instruction within the problem-based learning model can significantly enhance student learning outcomes. The study shows improvements in cognitive, affective, and psychomotor domains, demonstrating the model's effectiveness in addressing diverse student needs. Differentiation in content, learning processes, products, and learning environments created a more inclusive and engaging learning experience. These findings highlight the importance

of creating an inclusive and supportive learning environment tailored to the unique needs of each student, ultimately contributing to their academic and personal development.

CONCLUSION

Based on the results of the research and discussion in this Action Research, it can be concluded that there is an improvement in students' learning outcomes through the application of differentiated instruction in the problem-based learning model in the economics subject for class XI Social Sciences 4 at SMA Negeri 11 Bandung during the even semester of the 2022/2023 academic year. The improvement in students' learning outcomes is observed from the implementation results of pre-cycle, cycle I, and cycle II with a total of 36 students in class XI Social Sciences 4, and the school's minimum competency criteria (MCC) set at 75.

The data on affective learning outcomes show an increase in each cycle, starting from the pre-cycle at 82% (good category), cycle I at 84% (good category), and cycle II at 88% (very good category). The data on psychomotor learning outcomes also show an increase in each cycle, starting from the pre-cycle at 78% (good category), cycle I at 82% (good category), and cycle II at 86% (very good category). The data on cognitive learning outcomes show an increase in each cycle, starting from the pre-cycle with an average score of 57 (10 students meeting the criteria (28%)), cycle I with an average score of 77 (26 students meeting the criteria (72%)), and cycle II with an average score of 86 (31 students meeting the criteria (86%)).

This research significantly contributes to educational methods, particularly in teaching high school economics, by demonstrating that the application of differentiated instruction within the problem-based learning (PBL) model effectively enhances student learning outcomes. The findings highlight that accommodating student diversity through differentiation of content, process, product, and learning environment not only improves cognitive, affective, and psychomotor skills but also fosters a more inclusive, engaging, and effective learning environment. This approach underscores the importance of student-centered strategies, providing valuable insights for educators and researchers to further explore and implement in various educational contexts.

Despite the positive results, this research has several limitations that should be considered. The study's scale is limited, involving only one class of 36 students, which may not be generalizable to a larger population without further research with a more extensive and diverse sample. Additionally, the focus on the economics subject means that the findings might differ when applied to other subjects. The study's duration was one semester, necessitating long-term research to evaluate the sustained impact of differentiated instruction within the PBL model. Future research should expand the study's scale, explore the effectiveness of this approach in other subjects such as mathematics, science, or

languages, conduct longitudinal studies to assess long-term impacts, and analyze the factors that support or hinder the success of differentiated instruction in PBL. Addressing these areas will help future researchers develop more effective and inclusive learning strategies, enhancing student outcomes and preparing them for future challenges.

ACKNOWLEDGMENT

We extend our deepest gratitude and appreciation to all those who have contributed to the completion of this research on the improving student learning outcomes through the implementation of differentiated learning in a problem-based learning model. First and foremost, we express our heartfelt thanks to our supervisors and mentors at the Indonesia University of Education, Bandung, East Java, Indonesia, for their invaluable guidance, support, and encouragement throughout the research process. Their expertise, insights, and constructive feedback have been instrumental in shaping this study.

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