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The Effectiveness of Differentiated Learning Approach within PBL Model to Improve Students' Critical Thinking Skills

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ABSTRACT

This study aims to determine the effectiveness of the Differentiated Learning Approach within the Problem-Based Learning (PBL) model in improving students' critical thinking skills in English, particularly on the topic of analytical exposition text among grade XI students of SMA Negeri 2 Tondano. This study employed a quantitative method using a quasi-experimental design of the Non-Equivalent Group Design type. The sample consisted of class XI A as the experimental group and XI B as the control group, each with 20 students selected through random sampling. Data collection techniques included pre-test, post-test, observations, and documentation. Data were analyzed using the t-test to examine the effect off Differentiated Learning approach within PBL to students' Critical Thinking. The results revealed a significant difference between the experimental and control classes. Students in the experimental group who received instruction using the Differentiated Learning Approach within the PBL model showed notable improvement. The average pre-test score in learning achievement increased from from 58.45 to 83.20. The t-test showed a significance value of 0.000 (< 0.05. These findings demonstrate that the Differentiated Learning Approach within the Problem-Based Learning model is effective in enhancing students' critical thinking skills, particularly in learning English analytical exposition texts.

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INTRODUCTION

In an increasingly globalized world, English proficiency is vital for academic, professional, and cross-cultural communication (Sulistiyo et al., 2020; Liando, 2012). In Indonesia, English has become a core subject at all levels of education, with the aim that students will be able to use it competently by the time they graduate (Hampp et

al., 2021; Tarigan, 2008). However, mastering English is not solely about acquiring linguistic forms it also demands higher-order thinking, especially when students are expected to engage with academic texts that require logical analysis and structured reasoning.

In the context of 21st-century education, critical thinking has been widely recognized as one of the most essential competencies for students to develop. It is key to enabling learners to respond to complex challenges in academic, professional, and social settings (Bassham et al., 2011; Cottrell, 2005). Within English as a Foreign Language (EFL) instruction in Indonesia, fostering students' critical thinking skills is increasingly important not only to comprehend English texts meaningfully but also to cultivate independent reasoning, argument construction, and problem-solving (Minakova, 2014; Liando, 2012). Despite its growing importance, critical thinking remains underdeveloped among Indonesian high school students (Setyawan et al., 2023). One major contributing factor is the continued reliance on teacher-centered learning approaches, where students are passive recipients of knowledge. Instruction typically emphasizes memorization rather than analysis and reflection. Students are assessed based on what they can recall rather than how well they can evaluate ideas or generate logical arguments (Brookhart et al., 2010). This approach particularly hinders performance in genres such as analytical exposition texts, which require learners to construct clear and well-supported arguments based on logic and evidence (Afrilyasanti, 2021). Moreover, there are ongoing challenges related to the heterogeneity of learners in the classroom.

Students in a typical Indonesian senior high school vary significantly in their English proficiency, learning styles, and levels of readiness (Liando et al., 2022; Liando & Tatipang, 2022; Liando et al., 2023)

. As Yulia (2021) points out, this diversity can lead to disengagement among both high-achieving students and those who struggle, as instruction is rarely differentiated to meet individual needs. In such environments, many students find it difficult to deeply understand instructional material, leading to reduced academic performance and motivation. This issue is further exacerbated by observations in the field, which reveal that many students struggle to comprehend and produce analytical exposition texts a genre that is central to the English curriculum at the secondary level. The problem is closely tied to traditional instructional practices, which emphasize teacher explanation and repetition rather than active student participation and critical engagement. This conventional model, still dominant in many Indonesian classrooms, limits opportunities for authentic communication, personal expression, and higher-order thinking. Given these intertwined challenges students' low critical thinking skills, diverse learner needs, and outdated pedagogical practices there is a clear need for innovative and inclusive teaching models. In response, this study proposes the integration of two learner-centered pedagogies: Differentiated Learning and Problem-Based Learning (PBL). The Differentiated

Learning approach adapts content, process, and product based on learners' readiness, interest, and learning profiles (Tomlinson, 2013; Mulyawati et al., 2022), while PBL places students in real-world problem-solving scenarios that require critical and collaborative inquiry (Barrows, 2006; Gulibert, 1987). According to Ennis (2011), critical thinking is "thinking that is reasonable and reflective and focused on deciding what to believe or do." It involves analyzing arguments, uncovering assumptions, and drawing rational conclusions—all of which are central to understanding and producing argumentative texts in English. Nevertheless, as Perkins (1995) argues, schools often struggle to implement instructional strategies that truly nurture students' deep thinking capabilities.

Therefore, this study aims to develop and evaluate the effectiveness of an integrated instructional model combining Differentiated Learning and Problem-Based Learning in improving students' critical thinking skills specifically in the context of teaching analytical exposition texts to Indonesian senior high school students. It is expected that this approach will create a more meaningful, adaptive, and cognitively engaging learning environment that empowers all learners to think critically and communicate effectively in English.

REVIEW OF LITERATURE

Differentiated Learning

The differentiated learning approach, also known as differentiated instruction, was introduced by Carol Ann Tomlinson as a teaching strategy designed to address the diverse learning needs of students. This approach involves adapting the content, process, and product of learning based on students' individual characteristics such as readiness, interest, and learning profiles, thereby making instruction more inclusive and effective (Tomlinson & Imbeau, 2010). Its central goal is to create equity in education by offering every student an opportunity to succeed, without reinforcing negative distinctions between high- and low-achieving learners. Key elements of this approach include students' readiness reflecting their prior knowledge and skill levels; their interests which sustain motivation and engagement; and their learning profiles how they prefer to receive and express information. These profiles are significantly influenced by students' dominant learning styles: auditory, visual, and kinesthetic. For example, auditory learners benefit from listening and speaking activities, visual learners grasp information best through images and diagrams, and kinesthetic learners prefer hands-on experiences and movement-based tasks (Santangelo & Tomlinson, 2012; Komang et al., 2021). Instruction is thus differentiated to align with these preferences, increasing student engagement and comprehension. Implementation typically follows a structured sequence pre-activities, main activities, and post-activities designed to engage all types of learners. The advantages of differentiated instruction include enhanced student motivation, engagement,

performance, and greater teacher reflection and creativity in lesson planning. However, challenges persist, such as the readiness of teachers and schools, increased planning time, classroom management complexity, and concerns from parents regarding perceived fairness (Komang et al., 2021). Despite these challenges, differentiated learning remains a powerful pedagogical approach for promoting student-centered and equitable education.

Problem Based Learning Model

Problem-Based Learning (PBL) is an instructional approach that emphasizes active, student-centered learning through the investigation of real-world and complex problems. Originally developed by Barrows (2006), PBL positions problems not as endpoints, but as starting points for learning. This method encourages learners to construct knowledge by engaging with relevant and often interdisciplinary issues. Gulibert (1987) and Duch (as cited in Sir Wilfrid, 2001) emphasize that PBL fosters collaborative inquiry, where students work in teams to explore problems, develop hypotheses, and apply what they learn to formulate viable solutions. It also nurtures essential academic skills, such as critical thinking, problem-solving, and the ability to locate and use resources effectively. Key characteristics of PBL include the presentation of meaningful and socially relevant problems that spark student inquiry, the integration of content across disciplines, and authentic investigations where students analyze, hypothesize, and explore practical solutions. PBL also emphasizes student collaboration and culminates in the production and presentation of tangible outputs such as reports, presentations, or models that reflect their problem-solving journey (Ibrahim & Nur, 2002).

The PBL process typically unfolds in stages. Ibrahim and Nur (2002) outline five instructional phases: orienting students to the problem, organizing learning activities, guiding investigations, developing presentations, and evaluating the process. Complementing this, Sanjaya (2008) expands the process into more detailed stages, including formulating problems, analyzing them, hypothesizing, collecting data, testing hypotheses, and making recommendations emphasizing the structured inquiry that defines PBL. PBL offers several pedagogical benefits. It deepens students' conceptual understanding, enhances engagement, develops independent learning skills, and allows students to apply their knowledge in practical contexts. Moreover, it promotes personal growth and responsibility by placing students at the center of the learning process (Barrows et al., 2006; Sanjaya, 2008). However, this approach is not without challenges. Students with low confidence or interest may struggle to participate fully. The model also requires considerable preparation time and may be less effective if students do not grasp the learning objectives behind the problem (Gulibert et al., 1987). Overall, Problem-Based Learning is a dynamic approach that aligns well with 21st-century learning goals by integrating knowledge acquisition with the development of essential life skills. Its focus on real-life relevance and

collaborative inquiry makes it particularly valuable in promoting deeper learning outcomes.

Integrated Differentiated learning approach with Problem Based Learning

To enhance student-centered learning and active engagement, this study adopts an integrated approach that combines Differentiated Learning with the Problem-Based Learning (PBL) model. PBL emphasizes collaborative problem-solving through real-world, complex issues, while the Differentiated Learning approach tailor instruction to students' individual readiness, interests, and learning profiles (Tomlinson, 2014). The integration of these two pedagogical frameworks aims to create an inclusive learning environment that respects learner diversity while promoting critical thinking and collaboration. The integration is operationalized through a five-stage syntax, adapting each phase of the PBL model to incorporate differentiation in terms of content, process, and product. The table below (adapted from Asyhari & Yuliani, 2023) outlines this synthesis:

a) Orientation to the Problem.

In this initial phase, the teacher introduces an authentic, real-world problem, while also identifying students' learning profiles considering readiness levels, interests, and preferred learning modalities (visual, auditory, kinesthetic). This ensures that the challenge is both accessible and engaging for all learners.

b) Organizing Students for Learning

Grouping is conducted based on student profiles. Learners are grouped flexibly according to their learning styles or interests and provided with task options that align with their strengths. This fosters autonomy and strategic planning in collaborative settings.

c) Guiding Individual and Group Investigation

The investigation stage emphasizes access to diverse learning resources and strategies. Teachers facilitate inquiry using a multimodal approach, offering materials and support that match visual, auditory, or kinesthetic preferences. This personalization enhances understanding and engagement.

d) Developing and Presenting Work

Students demonstrate their understanding through differentiated outputs ranging from posters and essays to videos and presentations allowing them to express their knowledge in formats that suit their learning styles and strengths. This flexibility supports deeper cognitive processing and meaningful learning.

e) Analyzing and Evaluating the Problem- solving Process

Assessment integrates formative and summative methods and accounts for the differentiated nature of both the process and the final products. Reflection activities are designed to highlight individual growth within collaborative work, promoting metacognition and continuous improvement.

This integrative approach provides a dynamic learning environment where students are not only solving problems but doing so in ways that align with how they learn best. It encourages inclusivity, motivation, and autonomy, while also enhancing academic achievement and collaboration.

Critical Thinking

Critical thinking gained prominence during the Renaissance in the 15th and 16th centuries, a period when European thinkers began to challenge traditional authorities in religion, law, art, and human nature. Pioneers such as Francis Bacon, René Descartes, and Thomas More laid the intellectual foundations of modern scientific reasoning and reflective thinking. They emphasized the importance of collecting evidence, conducting rational analysis, and critically evaluating ideas through structured arguments. In a modern educational context, Cottrell (2005) describes critical thinking as a mental activity that involves the effective use of the mind. According to Bassham, Irwin, Nardone, and Wallace (2011), critical thinking comprises a set of cognitive skills and intellectual traits used to identify, analyze, and evaluate arguments. This includes overcoming personal biases, forming well-reasoned conclusions, and making informed decisions about what to believe and how to act.

Critical thinking is not only a tool for problem-solving but also a foundation for critical writing, emphasizing the importance of analysis, evaluation, and drawing logical conclusions from various sources. Thus, it becomes a vital skill in achieving academic success and developing higher-order reasoning. As Minakova (2014) explains, critical thinking involves identifying problems, analyzing the situation, selecting appropriate actions, and evaluating results. In this study, to assess students' critical thinking abilities, this study adopts a rubric developed by Ennis (2011), which encompasses five core aspects: (1) Providing Simple Explanations, which includes the ability to identify and formulate questions and analyze arguments; (2) Building Basic Skills, focusing on evaluating the credibility of sources and observational accuracy; (3) Drawing Conclusions, involving deductive and inductive reasoning to form logical judgments; (4) Providing Further Explanations, which entails defining terms clearly and recognizing assumptions; and (5) Strategies and Tactics, which include decision-making and interacting logically and persuasively with others.

RESEARCH METHOD

This study uses a quantitative quasi-experimental design with a non-equivalent control group pretest-posttest approach to examine the effect of the Differentiated Learning Approach integrated within the Problem Based Learning (PBL) model on students' critical thinking skills. The sample consists of 40 eleventh-grade students from SMA N 2 Tondano for the 2024/2025 academic year, divided equally into an

experimental group receiving the differentiated PBL treatment and a control group taught through conventional methods. Data were collected using critical thinking tests, learning style questionnaires, and observation sheets for both learning implementation and critical thinking behaviors. The experimental group underwent stages of PBL adapted to their learning styles, while the control group experienced traditional instruction. Data analysis involved descriptive statistics and inferential tests, including normality, homogeneity, and independent t-tests, to determine the significance of the treatment's impact on critical thinking skills, with hypothesis testing conducted using IBM SPSS 30.

FINDINGS AND DISCUSSION

Findings

21st century education demands learning that focuses not only on content mastery, but also on the development of high-level thinking skills such as critical thinking skills. These skills are key in shaping learners who are able to face complex challenges in the real world. However, in practice, the learning system in the classroom is still often uniform and conventional, not taking into account the differences in individual students' characteristics, needs, and potential. This situation is a significant obstacle in fostering students' critical thinking skills optimally. Therefore, a learning strategy is needed that is not only interactive and meaningful, but also adaptive to the diversity of students. The Differentiated Learning Approach is one of the promising answers because it is able to accommodate different abilities, interests, and learning styles of students in one learning process. Through this approach, teachers can provide a variety of assignment options, learning methods, and ways to show understanding that are relevant to individual student characteristics.

Furthermore, the effectiveness of the differentiated learning approach will increase if applied within the framework of a student-centered learning model, such as the Problem Based Learning (PBL) model. The PBL model is known to be effective in developing critical thinking skills because it encourages students to actively explore real problems, gather information, and formulate solutions based on logical analysis and strong argumentation. When differentiated approaches are incorporated into the PBL model, students are not only given space to think critically through problem-solving, but also given the opportunity to learn in a way that suits their individual needs and potentials. This combination is believed to be able to create learning that is not only personal and meaningful, but also cognitively challenging. This study was conducted to explore the extent of the effectiveness of the application of differentiated learning approaches in the PBL model on improving students' critical thinking skills. The results of this research are expected to make an important

contribution to the world of education, especially in the development of innovative learning strategies that are relevant to the demands of 21st century learning.

In this section, the results of this research are presented. Data collection was carried out through pre-tests and post-tests, as well as observations during the learning process. The aim was to determine whether there was an effect from the use of the Differentiated Learning Approach within the Problem-Based Learning model on improving students' critical thinking skills at SMA N 2 Tondano. The results begin with the normality test, as shown in the table below:

Table 1. Output Normality Test Critical Thinking

Tests of Normality

		Shapiro-Wilk		
	Class	Statistic	df	Sig.
Critical Thinking	Pre-Test Experimental	.142	20	.209
	Post-Test Experimental	.018	20	.230
	Pre-Test Control Group	.090	20	.081
	Post-Test Control Group	.172	20	.252

*. This is a lower bound of the true significance. a. Lilliefors Significance Correction

Based on table 1 above, it can be seen that the Pre-test students' achievement data in the experimental class has a significance value of 0. 209, while the control class has a significance value of 0.081. meanwhile, the Post-Test students' achievement data in the experimental class has a significance value of 0. 230, and the control class has a significance value of 0, 252. Therefore, it can be concluded that the data are normally distributed, allowing the analysis to proceed with the homogeneity test, followed by hypothesis testing using parametric statistical tests. Referring to Table 1 above, the normality test found that the distribution of both variables followed a normal distribution. The next step is to conduct a t-test to examine the effect of the Differentiated Learning Approach within Problem-Based Learning on students' critical thinking skills. The results of the t-test can be seen in the following table:

Table 2 Output Students Critical Thinking

Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Critical Thinking	Experiment	20	83.20	5.723	2.292
	Control	20	59.05	11.504	1.313

Table 3 Independent sample Test Students Critical Thinking

Independent sample Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Hasil	Equal variances assumed	10.054	.001	-9.368	38	.000	-24.750	2.642	-30.098	-19.402
	Equal variances not assumed			-9.368	30.256	.000	-24.750	2.642	-30.143	-19.357

Based on the table 2 above, it can be seen that the experimental class, with 20 students, has an average score of 83.20 Meanwhile, the control class, also with 20 students' respondents, has an average score of 59.05. From the Levene's test (Homogeneity of Variance), the significance value (Sig. p) = 0.001(<0.05), indicating that the variance between groups is homogeneous. Furthermore, based on the T-test (t-test for equality means) using the independent sample test, the calculated t-value is -9.368 with df=30.256 and a significance (Two-Sided p) <0.000, meaning that there is a significant difference between the experimental and control classes in terms of critical thinking skills. Additionally, the mean difference is 24.750, indicating that the critical thinking ability of students in the experimental class is 24.750 points higher than that of the control class. Since the p-value (0.000< 0.05), H1 is accepted and H0 is rejected. Thus, the results of this study indicated that the application of the Differentiated Approach in Problem Based Learning (PBL) has a significant effect on improving students' critical thinking skills.

Moreover, the Independent Samples t-Test table above presents the statistical results of a comparison between two groups, specifically examining the effectiveness of a given intervention presumably the application of the Differentiated Learning Approach within the Problem-Based Learning (PBL) model on students' critical thinking skills. The first section of the table shows the results of Levene's Test for Equality of Variances, which tests whether the variance of the two groups is equal. The F value is 10.054 with a significance (Sig.) value of 0.001, which is less than 0.05. This indicates that the assumption of equal variances has been violated, suggesting that the variability in scores between the two groups is significantly different. As a result, the interpretation of the t-test should prioritize the row labeled "Equal variances not assumed" since it provides a more accurate result when variance is unequal. Despite this, both rows yield identical t-values and mean differences, suggesting robustness in the result regardless of which row is used.

Moving to the second part of the table, which reports the *t-test for Equality of Means*, the t-value is -9.368, and the degrees of freedom (df) under the unequal variances row is 30.256. The significance level (2-tailed) is 0.000, which is highly significant ($p < 0.05$). This means there is a statistically significant difference between the means of

the two groups. The mean difference is -24.750, meaning the experimental group (presumably the group that received the differentiated PBL treatment) scored 24.750 points higher (if reversed in direction, depending on coding) than the control group on the measure of critical thinking skills. The standard error of the difference is 2.642, and the 95% Confidence Interval ranges from -30.143 to -19.357. Since this interval does not include zero, it further supports that the difference is statistically significant. In practical terms, this result implies that implementing a Differentiated Learning Approach within the PBL model has a substantial and statistically significant positive effect on improving students' critical thinking skills. The narrow confidence interval and strong t-value reinforce the reliability and magnitude of the intervention's effectiveness.

To support the data obtained from the critical thinking post-test, an observation sheet was used to assess students' critical thinking behaviors during the implementation of conventional in the control class. The observation was conducted throughout the learning process, focusing on ten indicators of critical thinking such as identifying problems, proposing relevant questions, expressing logical opinions, comparing information, analyzing cause-effect relationships, and drawing conclusions. The results is there are 2 students who have category "Good", 10 students in category "enough", 5 students in category "less" and 3 students in category "verry less", The results show that 50% students reached the enough category. Based on the results above, the researcher can conclude the application of the Differentiated Approach in Problem Based Learning (PBL) has a significant effect on improving students' critical thinking skills.

Discussion

The application of differentiated learning approaches in the *Problem-Based Learning* (PBL) model has been proven to have a significant impact on students' critical thinking skills, especially in processing and compiling analytical exposition texts. In this context, students are faced with real problems that require them to analyze actual issues, formulate logical arguments, and convey points of view in a systematic manner. The differentiated approach allows teachers to design learning activities that adapt to each student's learning readiness, interests, and learning profile. In learning analytical exposition texts, differentiation is carried out through the provision of a variety of topics, learning media, and how to present students' final results. When students are given the opportunity to learn according to their own style and pace, they become more engaged and responsible for the learning process. This has a direct impact on improving the quality of their critical thinking, as seen in their ability to formulate sharp arguments, filter relevant information, and connect ideas in a coherent and coherent manner. Thus, the combination of PBL and differentiated learning not only enhances students' conceptual understanding of the structure of

analytical exposition texts, but also fosters an awareness of reflective and logical thinking that is essential in academic contexts.

Furthermore, the impact of the application of the differentiation approach in PBL is not only seen in the ability to compose texts, but also in the reinforcement of the critical thinking components developed by Ennis. Within the framework of Ennis' theory, critical thinking consists of a number of components such as clarity, accuracy, relevance, logic, and fairness. Through the PBL model combined with differentiation strategies, students are encouraged to develop clarity in presenting arguments, accuracy in identifying facts and opinions, and logic in composing coherent thoughts. Differentiation allows students to explore problems from different perspectives within their capacity, while PBL provides a framework that encourages exploration and collaboration in problem-solving. As a result, students learn not only cognitively, but also metacognitively they begin to become aware of the way they think, evaluate arguments, and consider alternative solutions. Improvements in these critical thinking components suggest that learning processes designed with students' individual needs in mind can bring about real changes in the quality of their thinking. Thus, the integration of differentiated approaches in PBL has been proven to not only improve learning outcomes quantitatively, but also to hone students' critical thinking skills in depth and continuously.

The Effect of Differentiated Approach in Problem-Based Learning on Students' Critical Thinking Skills in Analytical Exposition Texts

The findings of this study demonstrate that the implementation of a Differentiated Learning Approach within the Problem-Based Learning (PBL) model significantly enhances students' critical thinking skills, particularly in analyzing analytical exposition texts. This conclusion is supported by the independent sample t-test results, which yielded a significance value of 0.000 (< 0.05), indicating a statistically significant difference between the experimental and control groups. The mean score difference of 24.75 points between the two groups further highlights the substantial impact of the intervention.

Observation data also reinforces the quantitative findings, showing that 85% of students in the experimental group were categorized as "Very Good" in terms of their critical thinking behavior. Differentiated instruction tailored to students' learning styles (visual, auditory, kinesthetic) personalized the learning experience, while PBL's inquiry-based process encouraged deeper analysis, logical reasoning, and collaborative engagement.

These results are in line with Tomlinson's (2017) theory, which emphasizes that differentiated instruction addresses learners' individual readiness, interests, and learning profile creating an environment that fosters higher-order thinking. When combined with the problem-solving nature of PBL, students are encouraged to think

reflectively and construct knowledge actively. This synergy has been previously supported by research from Hidayati & Wahyuni (2023) and Putri & Syamsudin (2022), which also reported a significant improvement in students' ability to evaluate, analyze, and articulate arguments using this combined model.

There are several factors that make the use of Differentiated instruction within the Problem Based Learning model effective enhancing students' critical thinking skills:

1. Differentiated Instruction Meets Individual Learning Needs, differentiated instruction adapts the content, process, and product of learning according to students' learning styles, interest, and prior knowledge. This encourages students to learn optimally based on their potential. According to Tomlinson (2017) "Differentiated instruction ensures that all learners are engaged and challenged at the appropriate level, which fosters deeper cognitive processing including critical thinking".
2. Problem Based Learning Facilitates Meaningful and Contextual Learning, Problem Based Learning exposes students to real world or contextual problems that require analysis, synthesis, and evaluation the core components of critical thinking. This process pushes students not just to receive information but also to process and construct their own understanding (Savery, 2006).
3. Differentiated Instruction in Problem Based Learning Enhances Students Autonomy and Learning Responsibility, students are given the responsibility to determine how to solve problems, choose learning resources, and evaluate their own work. This process demands and trains students to use higher order thinking skills independently (Heacox, 2012).
4. Reflection in Problem Based Learning Metacognition, the final stage in Problem Based Learning encourages students to reflect on their thinking and learning processes, which is a clear form of metacognition an essential skill in critical thinking. "Critical thinking is closely tied to metacognition; through reflection, students evaluate their problem-solving processes and adjust their strategies" (Chickering & Gamson, 1991). Based on the points above, it can be concluded that the implementation of Differentiated Learning Approach within Problem Based Learning model helps students develop problem-solving abilities, enables them to construct their own knowledge through learning processes, and equips them with the skills to communicate effectively through discussions or presentations.

In conclusion, the implementation of the Differentiated Learning Approach within the PBL model not only improves students' cognitive performance but also equips them with essential 21st-century skills in critical thinking, collaboration, and independent learning

The Impact of Differentiated Learning within Problem-Based Learning on Ennis's Critical Thinking Components

The substantial improvement in students' critical thinking skills, as indicated by the experimental group's score increase from 58.45 to 83.20, can be analyzed more deeply through Ennis's five components of critical thinking. The integration of Differentiated Learning within the PBL framework effectively enhanced each dimension of critical thinking as follows:

1. Elementary Clarification Enhancement

This component involves identifying key questions, explaining arguments, and distinguishing facts from opinions. Initially, students struggled with these foundational skills. However, the use of varied instructional methods visual aids for visual learners, discussions for auditory learners, and direct text manipulation for kinesthetic learners significantly strengthened their ability to clarify. The problem-orientation stage in PBL encouraged comprehensive understanding before solution development.

2. Basic Support Development

This includes using credible evidence and evaluating source reliability. Before the intervention, many students relied on personal opinions. Post-intervention, students effectively selected and synthesized evidence. Higher-performing students engaged in independent research, while others received scaffolded support. Group discussions and peer evaluations enhanced their judgment and reasoning standards.

3. Inference Capability Enhancement

Inference involves making logical predictions and drawing conclusions from evidence. Students initially made weak or unsupported inferences. After the intervention, they demonstrated stronger argumentation skills through activities such as cause-effect mapping, role-playing, and hypothesis testing all aligned with their individual learning styles.

4. Advanced Clarification Mastery

Students began to identify assumptions, define key terms, and handle ambiguity after experiencing complex, real-world problems presented in PBL scenarios. Interest-based differentiation prompted deeper exploration and questioning, fostering critical inquiry beyond surface-level understanding.

5. Strategies and Tactics Development

The highest level of Ennis's framework refers to students' ability to plan, monitor, and adjust their thinking strategies. Initially, students showed random and unstructured problem-solving approaches. After the intervention, they employed appropriate strategies, tracked their learning process, and adapted methods as needed. The reflection stage in PBL solidified this metacognitive development, enabling students to transfer skills across different contexts.

The significant improvement in students' critical thinking abilities, shown by the spike in the experimental group's score from 58.45 to 83.20, can be analyzed more deeply through the five components of critical thinking according to Ennis. The *Problem-Based Learning* (PBL) learning model combined with a differentiation approach effectively strengthens every aspect of students' critical thinking. In the *Elementary Clarification* component, many students initially have difficulty identifying key questions, explaining arguments, and distinguishing between facts and opinions. However, learning strategies that are differentiated based on learning style such as the use of visual media for visual learners, open discussions for auditory learners, and text manipulation activities for kinesthetic learners have a real impact on students' basic understanding. The problem-orientation stage in PBL encourages students to understand the context thoroughly before they formulate solutions, so that their ability to clarify information becomes more directed. On the other hand, the *Basic Support* component related to the use of evidence and assessment of the credibility of sources shows positive developments. Before the intervention, most students still relied on personal opinions without a solid foundation. But once the differentiation approach is applied, students begin to use relevant data and sources in crafting their arguments. Students with higher cognitive levels begin to conduct independent research, while other students receive gradual guidance from teachers. Group discussion and peer evaluation activities also strengthen their standards of judgment and logical reasoning.

Furthermore, the *Inference* component or the ability to draw logical conclusions has also seen a marked increase. Before the intervention, many students simply made weak predictions that were not supported by data. However, after following various activities such as cause-and-effect mapping, role simulations, and hypothesis testing, all of which are designed based on students' learning preferences, their ability to draw conclusions becomes much stronger and more structured. These activities not only foster reasoning skills, but also increase students' confidence in defending arguments. Improvements are also seen in the *Advanced Clarification* component, where students begin to demonstrate the ability to identify assumptions, define key terms, and deal with ambiguities arising from complex real-world-based problems. Interest-based differentiation encourages students to explore problems more deeply, thus encouraging critical questions that go beyond surface understanding. Finally, the most significant development occurred in the *Strategies and Tactics* component, which deals with planning, monitoring, and adjusting thinking strategies. Before the intervention, students tended to solve problems with a random, unstructured approach. However, after going through the reflection stages in the PBL model, students began to use more systematic strategies, monitor their thought processes, and adjust methods when facing new challenges. This reflects the metacognitive development that is essential in critical thinking, as well as the ability to transfer thinking skills to a variety of other learning contexts. Overall, the integration of

differentiation approaches in the PBL framework not only improves student performance quantitatively, but also forms a reflective, analytical, and adaptive mindset in solving problems.

Based on the previous description and analysis, it can be concluded that the application of a combination of *Differentiated Learning* and *Problem-Based Learning* (PBL) not only has an impact on improving students' test scores, but also brings about a fundamental change in the way students view and solve learning problems. This approach encourages students to not only focus on the end result, but also to understand the thought process they go through in building knowledge. Through differentiated learning, students feel more valued because their learning styles, interests, and readiness are actively accommodated in learning planning. This makes them more emotionally engaged, motivated to participate, and more confident in exploring ideas and solving problems. In the context of PBL, students are faced with real problems that encourage them to think critically, investigate information independently, and work together in groups to formulate solutions.

The combination of these two approaches results in a strong pedagogical synergy, in which students are not only cognitively involved in the process of analytical and logical thinking, but also affectively in forming a positive attitude towards intellectual challenges. In addition, this approach helps develop students' metacognitive awareness—they learn to plan thinking steps, monitor their own understanding, and adjust strategies when facing obstacles. This ability is essential in the development of critical thinking skills that apply not only in the classroom, but also in everyday life. In other words, the application of *Differentiated Learning* within the framework of PBL contributes to the development of holistic critical thinking because it includes cognitive (logical and analytical thinking), affective (attitude towards learning), and metacognitive (reflection and self-control in the thought process). The results of this study show that this approach is effective in forming students who are not only able to answer questions, but also able to understand the context, manage their thinking process independently, and reflect on the results of their thinking critically. These findings support the importance of adaptive and student-centered learning designs in equipping young people with relevant high-level thinking skills in the 21st century.

Based on the research results, several recommendations can be made for various stakeholders. Teachers are encouraged to incorporate AI-based chatbots as supplementary tools in English learning, particularly for reading and writing activities. They should also provide guidance on ethical and critical usage, including how to verify AI-generated content and avoid plagiarism. School administrators are advised to support the integration of AI tools by offering training opportunities for teachers and ensuring safe, monitored access for students. Students themselves should use chatbots to enhance their self-directed learning outside the classroom, while remaining cautious about overreliance. They are encouraged to evaluate AI-

generated information critically and to consult their teachers when in doubt. Finally, future researchers are recommended to explore deeper insights into chatbot use by combining quantitative data with qualitative approaches, such as interviews or observations, especially to better understand its impact on speaking and listening skill development.

CONCLUSION AND CONSIDERATION

Based on the results of the research and discussion that have been carried out, it can be stated that there is an influence of using the Differentiated Learning Approach within Problem Based Learning Model on students' Critical Thinking Skills. The experimental class applied the Differentiated Learning Approach within Problem Based Learning Model, while the control class used a Conventional Learning Model. Based on the results of the independent t- test analysis, the researcher can draw the following conclusion: The implementation of Differentiated Learning Approach within Problem Based Learning Model influences students' critical thinking skills. This evident from the results of the t-test (independent t-test), which yielded a significance value (sig.2-tailed) of 0.00 < 0.05. Thus, H1 is accepted and H0 is rejected, indicating that this approach significantly affects students' critical thinking skills in the English subject, particularly in the Analytical Exposition Text material for Grade XI students of SMA N 2 Tondano. Considering the positive results of this study, future researchers are encouraged to explore the integration of Differentiated Learning and PBL across other genres of texts or language skills, such as speaking or writing, to examine its broader impact on students' critical thinking development. It is also recommended that teachers receive adequate training in both differentiated instruction and PBL design to ensure effective classroom implementation. Longitudinal studies can also be conducted to observe the long-term effects of this pedagogical model on students' academic independence and cognitive flexibility.

REFERENCES

Afrilyasanti, R. (2021). *Bahasa Inggris Tingkat Lanjut*. DKI Jakarta: Kementerian Pendidikan, Riset, dan Teknologi.

Asyhari, A., & Yuliani, N. (2023). *Problem-Based Learning Materials Integrated with Differentiated Approaches to Enhance Elementary School Students' Learning Outcomes*. ResearchGate

Barrows, H. S. (1996). Problem-based learning in medicine and beyond: A brief overview. *New Directions for Teaching and Learning*, 1996(68), 3–12.Wikipedia+3ResearchGate+3Wiley Online Library+3

Barrows, H. S. (2006). Problem-based learning in medicine and beyond: A brief overview. *New Directions for Teaching and Learning*, 2006(68), 3–12. https://doi.org/10.1002/tl.37219966804

Bassham, G., Irwin, W., Nardone, H., & Wallace, J. M. (2011). *Critical thinking: A student's introduction* (4th ed.). New York: McGraw-Hill.

Chickering, A. W., & Gamson, Z. F. (1991). *Seven principles for good practice in undergraduate education*. San Francisco, CA: Jossey-Bass.

Cottrel, S. (2005). *Critical thinking skills-developing effective analysis and argument*. New York: Palcrave Macmillan.

Cottrell, S. (2005). *Critical thinking skills: Developing effective analysis and argument*. Basingstoke: Palgrave Macmillan.

Ennis, R. H. (1985). A logical basis for measuring critical thinking skills. *Educational Leadership*, 43(2), 44-48.

Ennis, R. H. (2011*). The nature of critical thinking: An outline of critical thinking dispositions and abilities*. Thesis, Faculty of Education Illnois University

Gulibert, J. –J. (1987), *Educational Handbook for Health Personnel*. Geneva: WHO Off set Publication

Hampp, P. L. (2019). Use of Songs in Teaching Simple Tobe and Past Tense Teaching. *Journal of English Language and Literature Teaching*, 4(1), 15–24. https://doi.org/10.36412/jellt.v4i1.939

Heacox, D. (2012). *Differentiating instruction in the regular classroom: How to reach and teach all learners*. Minneapolis, MN: Free Spirit Publishing.

Hidayati, S., & Wahyuni, A. (2023). Penerapan pembelajaran berbasis masalah dengan pendekatan berdiferensiasi untuk meningkatkan kemampuan berpikir kritis siswa. *Jurnal Pendidikan Bahasa dan Sastra Indonesia, 11*(1), 35–44. https://doi.org/10.21009/jpbsi.v11i1.2023

Ibrahim, M., & Nur, M. (2002). *Pengajaran berdasarkan masalah*. Surabaya: Universitas Negeri Surabaya Press.

Komang, I. N. G., Sudatha, I. G., & Sutama, I. K. (2021). Implementasi pembelajaran berdiferensiasi berbasis gaya belajar siswa untuk meningkatkan hasil belajar. *Jurnal Pendidikan*, 26(2), 154–163.

Liando, N. V. F. (2012). Students' vs. teachers' perspectives on best teacher characteristics in EFL classrooms. *TEFLIN Journal*, 23(2), 163–178.

Liando, N. V., Tatipang, D. P., & Lengkoan, F. (2022). A study of translanguaging practices in an EFL classroom in Indonesian context: A multilingual concept. *Research and Innovation in Language Learning*, *5*(2), 167-185.

Liando, N. V., Dallyono, R., Tatipang, D. P., & Lengkoan, F. (2023). Among English, Indonesian and local language: Translanguaging practices in an Indonesian EFL classroom. *Indonesian Journal of Applied Linguistics*, *13*(1), 204-216.

Liando, N. V. F., & Tatipang, D. P. (2022). English or Indonesian language? Parents' perception toward children's second language learning context. *Jurnal Lingua Idea*, *13*(1), 61-75.

Minakova, L., Y. (2014). Critical thinking development in foreign language teaching for non-language-majoring students. *Procedia-Social and Behavioral Sciences,* 154, 324—328. doi: 10.1016/j.sbspro.2014.10.157.

Mulyawati, Y., Zulela, M. S., & Edwita, E. (2022). Differentiation learning to improve students' potential in elementary school. *Pedagonal: Jurnal Ilmiah Pendidikan*, 6(2), 123–130.Universitas Pakuan Journal

Perkins, D. N. (1995). *The intelligent eye: Learning to think by looking at art*. Basic Books, Routledge.

Putri, L. K., & Syamsudin, A. (2022). Pengaruh model pembelajaran berbasis masalah terhadap kemampuan berpikir kritis siswa dalam menulis teks eksposisi. *Jurnal Perspektif Pendidikan, 6*(2), 123–132. https://ejournal.example.edu/jpp/article/view/2022.06.02

Sanjaya, W. (2008). *Strategi pembelajaran berorientasi standar proses pendidikan*. Jakarta: Kencana.

Savery, J. R. (2006). Overview of Problem-Based Learning: Definitions and Distinctions. *Interdisciplinary Journal of Problem-Based Learning, 1*(1), 9–20. https://doi.org/10.7771/1541-5015.1002

Sulistiyo, U. (2015). English language teaching and EFL teacher competence in Indonesia. *Proceedings of ISELT FBS Universitas Negeri Padang*, 3, 396–406. Retrieved from https://ejournal.unp.ac.id/index.php/selt/article/view/7001/0eJournal UNP

Tarigan, H. G. (2008). *Berbicara sebagai suatu keterampilan berbahasa*. Bandung: Angkasa.

Tomlinson, C. A. (2001). How to Differentiate Instruction in Mixed-Ability Classroom 2nd Edition (2nd ed.). Association for Supervision and Curriculum Development. https://doi.org/10.1016/0300-483X(87)90046-1

Tomlinson, C. A. (2013). *How to differentiate instruction in academically diverse classrooms* (2nd ed.). Alexandria, VA: ASCD.

Tomlinson, C. A. (2017). *How to differentiate instruction in academically diverse classrooms* (3rd ed.). Alexandria, VA: ASCD.

Tomlinson, C. A., & Imbeau, M. B. (2010). *Leading and managing a differentiated classroom*. ASCD.

Yulia, R. (2021). Implementing differentiated instruction in Indonesian secondary schools: Opportunities and challenges from language teachers. *English Review: Journal of English Education*, 9(1), 1–10.