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Misconceptions of Project-Based Learning among Indonesian Language Teachers: An Explanatory Sequential Mixed-Methods Study in West Sumatra Senior High Schools

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ABSTRACT

Many studies have demonstrated the effectiveness of project-based learning (PjBL) in language teaching. However, limited research has examined teachers' misconceptions during the implementation of this learning model in classroom practice. This present study aims to investigate the levels, types, and parts of PjBL categorized as misconceptions held by Indonesian language teachers in some senior high schools. This explanatory sequential mixed-method design involved 35 teachers who were selected purposively. These teachers taught the Indonesian language subject in some schools in a city in West Sumatra Province, Indonesia. The data were obtained by distributing a set of questionnaires and conducting semi-structured interviews face-to-face. The data were then analyzed quantitatively using descriptive statistics, while the qualitative data were analyzed using the thematic analysis method. The results revealed that many teachers interpreted PjBL as merely assigning project tasks rather than facilitating a structured learning process. Misconceptions were particularly evident in the project planning and reflection stages, where teachers showed limited understanding of how to guide students in inquiry, collaboration, and reflective learning. Interview data further revealed that these misconceptions were related to teachers' limited conceptual understanding of the core principles and student-centered nature of PjBL. These findings highlight the importance of strengthening teachers' pedagogical understanding of PjBL and provide empirical insights into how misconceptions may influence the effectiveness of PjBL implementation in language classrooms.

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1. INTRODUCTION

Project-Based Learning (PjBL) is a learning model explicitly incorporated into the Independent Curriculum (Curriculum Merdeka) since 2021 (Jasrial et al., 2023; Wulandari & Nawangsari, 2024). Rehman et al. (2024) stated that this learning model supports the development of 21st-century competencies, such as critical thinking, collaboration, creativity, and communication. PjBL also aligns with the spirit of the Independent Curriculum, which emphasizes student-centered learning, contextual learning, and strengthening the Pancasila Student profile through authentic and meaningful learning experiences (Zaenab et al., 2024). This model is applied to all subjects in schools (such as junior high and senior high) and universities.

In the context of Indonesian language learning in high schools, PjBL can help develop students' language skills through real-life activities. These skills include designing and producing texts (Eliwarti & Aruan, 2018; Marni et al., 2022), presenting ideas orally, and working collaboratively to complete problem-based projects (Ferecbeyli, 2024; Ghosheh Wahbeh et al., 2021). Furthermore, the PjBL model can help improve higher-order thinking skills, learning motivation, and student active engagement (Khasanah et al., 2025) . Therefore, the PjBL model is increasingly being implemented by Indonesian language teachers at the secondary school level due to the many benefits it provides to students.

The application of PjBL in Indonesian language learning is also supported by several previous studies that demonstrate the effectiveness of this model in improving various aspects of language learning. Those studies are conducted in writing skills (Ikanubun & Pau, 2025), speaking skills (Oktavia et al., 2025), reading comprehension (Rahayu et al., 2024), language creativity (Chikita et al., 2023; Hamdi et al., 2025), interest/motivation (Rahim et al., 2025), critical thinking (Arifatin, 2023; Gunawan et al., 2025), and students' collaboration skills (Listiana et al., 2025). These findings indicate that PjBL has strong potential to enhance the quality of language learning.

Implementation fidelity has become an important issue in educational reform. Although innovative learning models are widely promoted in curriculum policies, their effectiveness largely depends on how accurately teachers understand and implement them in classroom practice. Research in teacher cognition suggests that teachers' beliefs, knowledge, and interpretations of instructional approaches strongly influence how learning models are enacted in real classroom contexts, including in the implementation of PjBL (see Griful-Freixenet et al., 2020; Shiu, 2024). In theory, teachers' cognitive processes serve as a filter in translating curriculum policies into classroom practice (Borg, 2006). When teachers' interpretations deviate from scientifically accepted pedagogical principles, these cognitive processes mutate into misconceptions that hinder the integrity of the model's implementation (O'Donnell, 2008).

However, there are important issues related to the accuracy of teachers' understanding and application of the PjBL model as PjBL is being implemented on a massive scale in schools. For example, not all teachers implement PjBL in accordance with the principles and stages that should be followed. Some studies revealed that in practice, although many teachers implement project-based learning, core components such as reflection, student autonomy, and inquiry do not always appear consistently (see Sánchez-García & Reyes-de-Cózar, 2025; Tanila et al., 2024; Yang et al., 2021). Consequently, the implementation of PjBL often appears to be merely a project assignment with a focus on the final product and less emphasis on the learning process, which should be the core of this approach (Markula & Aksela, 2022; Shaban Aldabbus, 2018). This condition leads to misconceptions among teachers in the implementation of PjBL.

According to Yates and Marek (2021), misconceptions refer to understandings that are inconsistent with accepted scientific explanations. In this study, misconceptions are distinguished from partial understanding and implementation challenges. While partial understanding refers to incomplete knowledge of PjBL principles, and implementation challenges refer to contextual constraints in classroom practice, misconceptions specifically indicate incorrect interpretations of the fundamental concepts and stages of PjBL.

Although the implementation of Project-Based Learning has been widely researched, based on problems in the field and previous research results, studies that specifically examine teachers' misconceptions, especially Indonesian language teachers, in implementing PjBL are still relatively limited. Most previous studies have focused more on student learning outcomes rather than on the understanding and practices of teachers as the main implementers of learning. Unlike previous studies, which were more descriptive in nature regarding the efficacy of PjBL (see Almulla, 2020; Ayu Wulandari et al., 2025; Guo et al., 2020; Zhang & Ma, 2023), The novelty of this study lies in its explanatory approach, which examines teachers' cognition as the primary mechanism underlying the model's success. By identifying which stages are most prone to misconceptions, this study not only identifies problems but also provides an empirical basis for the development of more targeted teacher training. In fact, teachers' misconceptions about learning models have the potential to affect the quality of PjBL implementation and have a direct impact on student learning experiences (Asberger et al., 2021). Ferrero et al. (2020) believe that teachers' misconceptions have the potential to reduce the quality of learning because they encourage the application of methods that are not in line with the pedagogical principles that should be applied.

Therefore, it is important to conduct a study on Indonesian language teachers' misconceptions in implementing PjBL. This study is expected to provide an empirical description of the forms of misconceptions that occur, the stages of PjBL that are most prone to misapplication, and serve as a basis for the development of more targeted teacher training programs. In addition, the results of this study are also expected to contribute to improving the quality of PjBL implementation in Indonesian language learning in secondary schools. Based on this description, this study aims to answer the following research questions:

1. To what extent do Indonesian language teachers have misconceptions in implementing Project-Based Learning?
2. What are the types of misconceptions that Indonesian language teachers have regarding the concepts, principles, and characteristics of Project-Based Learning?
3. At what stage of Project-Based Learning implementation do Indonesian language teachers most often have misconceptions?

2. METHODS

2.1. Research Design

Following Creswell (2009), this mixed-methods study uses an explanatory sequential design to identify and map Indonesian language teachers' misconceptions in implementing PjBL measurably, while also deepening understanding of the form and context of these misconceptions through qualitative data. In the first phase, a descriptive survey was conducted to examine the level and distribution of teachers' misconceptions. In the second phase, semi-structured interviews were conducted to clarify and elaborate the survey results. The integration of quantitative and qualitative data occurred at the interpretation stage, where interview findings were used to explain the survey results. All participants voluntarily participated in the study and provided informed consent. Their identities were kept anonymous, and the data were used only for research purposes.

2.2. The Participants of the Study

The participants of this study were 35 Indonesian language teachers (27 females and 8 males) who taught the Indonesian subject in public Senior High Schools in a city in West Sumatra, Indonesia. Their ages range from 30 to 58 years. They were chosen purposively with some considerations. First, the teachers employed PjBL in teaching the Indonesian subject. Second, they had teaching experiences of more than ten years and had teacher certification certificates. Jasrial et al. (Jasrial et al., 2023) stated that teachers with ten years of teaching experience will have better teachers' pedagogical knowledge and better work performance. The certification status indicates that the teachers deal with Indonesian

language mastery as subject matter and professional development as teachers. Third, they are willing to participate in the research without any coercion or conflict of interest during the research process. Last, they hold a bachelor's degree in Indonesian language and literature education. The sample size was considered sufficient for a descriptive survey combined with qualitative follow-up interviews aimed at understanding teachers' misconceptions in depth. However, since the participants were drawn from a single city, the findings should be interpreted within this contextual scope.

2.3. Data Collection Procedures

The data were collected using two instruments: a questionnaire and an interview guide. The questionnaire was used to measure the level, type, and distribution of teachers' misconceptions in implementing PjBL. The questionnaire instrument was developed based on the principles of PjBL according to Thomas (2000) and Krajcik and Blumenfeld (2006), as well as the concept of teacher misconceptions proposed by Yates and Marek (Yates & Marek, 2021).

The questionnaire consisted of 20 closed-ended statements categorized into several aspects: 1) Understanding of the PjBL concept (5 items), 2) Understanding of the PjBL stages (6 items), 3). The roles of students and teachers in PjBL (4 items), and 4) Assessment and reflection on learning (5 items). Respondents were asked to provide answers using a 4-point Likert scale (1 = Strongly Disagree; 4 = Strongly Agree), so that it could be analyzed descriptively to identify the level of teachers' misconceptions. The questionnaire data were collected by distributing electronic and/or printed copies to 35 Indonesian language teachers at the secondary school level who had implemented PjBL. Teachers received the instrument along with instructions for completing it, which took approximately 15–20 minutes. Before distribution, the questionnaire was reviewed by two experts in language education to ensure content validity (e.g., the relevance of the PjBL framework and the Indonesian senior high school context). Reliability was further confirmed through a pilot study, which yielded a Cronbach's alpha value of > 0.70, indicating acceptable internal consistency.

To clarify and deepen the findings of the questionnaire, semi-structured interviews were conducted with six teachers who were purposively selected based on the varying levels of misconceptions (high, medium, low) identified from the questionnaire results. The interviews aimed to explore the forms of misconceptions, the reasons for the misconceptions, and the teachers' experiences in implementing PjBL. The interview instrument consisted of 10 main questions, covering: 1) Teachers' understanding of the PjBL concept, 2) Teachers' practices in designing projects, 3) The roles of students and teachers in project-based learning, 4) The most challenging stages of PjBL according to teachers, and 5) Teachers' views on assessment and reflection in PjBL. The interviews were conducted face-to-face, with a duration of 30–45 minutes per informant. All interviews were recorded (with permission) and transcribed for thematic analysis to support the questionnaire results.

2.4. Data Analysis

The data were analyzed quantitatively and qualitatively to map the level, type, and distribution of teachers' misconceptions. Quantitatively, the frequency of teachers' responses to each survey item was calculated and converted into percentages to identify the most dominant types of misconceptions. The data were then categorized according to PjBL aspects, namely concepts, stages, student-teacher roles, assessment, and reflection. These steps align with Ary et al. (2010), which emphasizes the use of descriptive statistics to provide a systematic overview of phenomenon patterns. Lastly, the analysis results were presented in tables that facilitate the interpretation of the level and type of teachers' misconceptions.

Qualitative data from interviews were analyzed using the thematic analysis method, following Braun and Clarke (2021). The analysis was conducted in four steps: first, all interviews were recorded and transcribed verbatim. Second, teachers' answers were coded based on predetermined misconception indicators, such as misconceptions related to concepts, stages, student-teacher roles, assessment, and reflection. Third, the codes were then categorized into main themes corresponding to

the types of misconceptions and PjBL stages. To ensure transparency and analytical rigor, we employed three key strategies: inter-coder agreement (where a second researcher reviewed a subset of coded data), member checking (validating interpretations with participants), and a documented audit trail of the coding process. Finally, data triangulation was performed by integrating the qualitative themes with the quantitative results, ensuring a comprehensive and verified interpretation of the findings.

3. FINDINGS AND DISCUSSION

3.1. Findings

This section presents the research findings based on the research questions: the level of teachers' misconceptions, types of misconceptions, and PjBL stages that most often experience misconceptions. The quantitative results are presented using frequency and percentage distributions to identify the prevalence of misconceptions among teachers, while interview data are used to support and clarify the quantitative findings.

3.1.1. Teachers' Level of Misconceptions on PjBL

The results of the survey data analysis show that the majority of Indonesian language teachers still have misconceptions in implementing Project-Based Learning. Of the 35 respondents, 25 teachers (71.4%) were identified as having misconceptions in one or more aspects of PjBL, while 10 teachers (28.6%) showed a relatively accurate understanding of the principles and characteristics of PjBL.

Table 1. Teachers' Level of Misconceptions in Implementing PjBL

Teachers' Understanding Category	(Teachers) f	%
Having misconception	25	71.4%
Without misconceptions	10	28.6%
Total	35	100%

The results in Table 1 indicate that although PjBL has been widely implemented in Indonesian language learning, teachers' conceptual understanding of this learning model is not yet fully aligned with the theoretical basis of the PjBL model.

3.1.2. Types of Misconceptions that Teachers Have about PjBL

The results of data analysis show that there are several types of dominant misconceptions held by Indonesian language teachers, as presented in Table 2. The most common misconception is the understanding of PjBL as merely assigning project tasks with a focus on the final product, without emphasizing the learning process, investigation, and student reflection. In addition, misconceptions also arise regarding the role of students, project planning, and assessment in PjBL.

Table 2. Types of Teachers' Misconceptions on PjBL

No	Types of Misconceptions	(Teachers) f	%
1	PjBL is understood as merely assigning project tasks	22	62.9%
2	The role of students as active learners is not understood	20	57.1%
3	PjBL is considered not require step-by-step planning	18	51.4%
4	Assessment is understood only as the evaluation of final products	17	48.6%
5	Reflection on learning is considered non-essential	15	42.9%

The most dominant misconception was the understanding of PjBL as merely assigning project tasks with an emphasis on the final product. This finding is reinforced by the interview results, in which teachers stated that:

" … *yang penting siswa menghasilkan produk, soal proses biasanya menyesuaikan waktu* (the important thing is for students to produce a product; the process usually adjusts to the time available)" (G2).

"… *ya kalau menggunakan model PjBL, memang sasaran utamanya proyek yang dihasilkan oleh siswa, misalnya menulis karya ilmiah. Yang penting siswa mampu mengerjakannya bersama kelompoknya…* "... yes, when using the PjBL model, the main objective is indeed the project produced by students, for example, writing scientific papers. The important thing is that students can work on it together with their group)*" (Teacher 7)*

These statements indicate that teachers tended to view PjBL as a results-oriented activity rather than an investigation- and reflection-based learning process. The project was given depending on the learning objectives, in this case, scientific writing, and worked in groups.

In addition, misconceptions regarding the role of students were also quite prominent. Some teachers still positioned themselves as the main controllers of the project, while students only followed predetermined instructions. This is reflected in the statement of one informant who said that:

"… *topik dan langkah proyek biasanya sudah saya tentukan supaya siswa tidak bingung* (I usually determine the topic and steps of the project so that students are not confused … " (Teacher 4).

*"kalau siswa terlalu banyak diberi pilihan, proyeknya bisa tidak selesai tepat waktu, jadi arahnya harus dari guru (*If students are given too many choices, the project may not be completed on time, so the direction must come from the teacher)*" (Teacher 9).*

These statements indicate that the principles of student autonomy, independence, and decision-making, which are central to PjBL, have not yet been fully understood or implemented. Instead of functioning as facilitators, teachers tend to assume a dominant role in controlling the learning process, thereby limiting students' opportunities to actively construct knowledge through inquiry and collaboration.

The next misconception relates to project planning, where PjBL was perceived as an approach that could be implemented without systematic stage design. Some teachers viewed planning as a flexible and secondary aspect, rather than as a foundational component of the learning process. This perception is reflected in the statement of one informant who mentioned that:

" … *perencanaan bersifat fleksibel, yang terpenting adalah proyek dapat berjalan (*the planning is flexible, the important thing is that the project can run" (Teacher 1).

" *saya biasanya langsung menyesuaikan proyek dengan materi yang sedang dibahas, tanpa menyusun pertanyaan pemantik secara khusus* … (I usually adjust the project directly to the material being discussed, without specifically preparing leading questions)" (Teacher 9),

These statements indicate that teachers tend to underestimate the importance of authentic problem formulation and driving questions as the foundation of PjBL. In the theoretical framework of Project-Based Learning, project planning plays a critical role in ensuring that learning activities are inquiry-

driven, student-centered, and aligned with learning objectives. The absence of systematic planning risks reducing PjBL to a task-oriented activity rather than a meaningful learning process.

Regarding assessment, nearly half of the respondents understood PjBL as a learning model in which assessment primarily focused on the final product. This perception is reinforced by an informant's statement that:

> "*penilaian utama tetap pada hasil akhir proyek, sedangkan proses hanya sebagai tambahan* … (the main assessment is still on the final project results; the process is only additional)" (Teacher 6).

> "*… yang paling mudah dinilai adalah produk akhirnya, sementara proses biasanya tidak dinilai secara detail* (… the final product is the easiest aspect to assess, while the learning process is usually not assessed in detail)" (Teacher 9).

These statements indicate a misconception regarding the function of formative assessment in Project-Based Learning. In PjBL, assessment is intended to be continuous and formative, aimed at monitoring students' learning processes, providing feedback, and supporting reflection throughout the project, rather than merely evaluating the final product.

Meanwhile, learning reflection is still viewed as a less essential component of Project-Based Learning. Several teachers perceived reflection as an optional activity that could be omitted due to practical constraints. This view is reflected in the statement of one informant who said that:

> *"saya biasanya tidak melakukan refleksi secara khusus karena keterbatasan waktu …* (I don't usually do reflection specifically because of time constraints…)" (Teacher 3).

> *"… selama siswa sudah menyelesaikan proyek, refleksi tidak selalu dianggap perlu … (… as long as students complete the project, reflection is not always considered necessary…)" (Teacher 10).*

These statements indicate that reflection as a means of fostering students' metacognitive awareness has not yet been fully understood as an integral component of PjBl. In fact, reflection plays a crucial role in helping students evaluate their learning processes, identify challenges, and construct deeper understanding throughout the project cycle.

3.1.3. The Most Often Misunderstood of PjBL Stages

The analysis results on the mapping of PjBL show that misconceptions most often occur in the project planning and learning reflection stages. As presented in Table 3, in the planning stage, teachers had difficulty formulating authentic problems and sparking questions as the basis for the project. Meanwhile, in the reflection stage, teachers tended to interpret it as an evaluation of the final results, rather than a reflection on the students' learning process.

Table 3. PjBL Stages Subject to Misconceptions

No	Stages of PjBL	Teachers (f)	%
1	Project planning	24	68.6%
2	Project implementation	16	45.7%
3	Monitoring and facilitation	14	40.0%
4	Process and product assessment	18	51.4%
5	Learning reflection	26	74.3%

During the project planning stage, 68.6% of teachers experienced misconceptions when formulating authentic problems and driving questions. In practice, some teachers immediately determined the project topic without linking it to the real context and students' needs. In addition, project planning still does not fully reflect the integration of learning objectives, activities, and assessments. These findings are supported by interview results showing that teachers often simplify the project planning stage due to time constraints for project completion. Project planning is understood as an administrative aspect, not as the pedagogical foundation of PjBL. The teacher stated that:

> "… *biasanya saya menentukan tema proyek secara langsung saja agar proses pembelajaran lebih cepat berjalan* (I usually decide on the project theme right away so that the learning process can proceed more quickly)" (Teacher 1)

During the project implementation phase, 45.7% of teachers still demonstrated misconceptions, particularly regarding the role of teachers as facilitators. In practice, teachers still often provided overly detailed instructions and strictly controlled the students' work process. This situation resulted in students having less space to make decisions and develop independent learning skills. The interview findings reinforced the survey results, as stated by one teacher who said:

> *"saya biasanya mengarahkan langkah-langkah proyek supaya hasilnya sesuai dengan target* (I usually direct the project steps so that the results are in line with the targets" (Teacher 4).

The interview statements above show that the shift in the role of teachers from instructors to facilitators has not been fully understood.

Misconceptions at the monitoring and facilitation stage were experienced by 40% of teachers. Teachers tended to interpret monitoring as supervision of task completion, rather than as a process of providing continuous formative feedback. As a result, the feedback provided was corrective and focused on mistakes, rather than on developing the learning process of students. One informant revealed as follows.

> *"… monitoring saya lakukan untuk memastikan tugas proyek selesai tepat waktu* (... I monitor to ensure that project tasks are completed on time)" (Teacher 6).

This statement indicates that the pedagogical function of monitoring in PjBL had not been optimally utilized.

A total of 51.4% of teachers showed misconceptions at the assessment stage, mainly by focusing their assessment on the final product of the project. Process assessments, such as student participation, collaboration, and reflection, have not been made a major component of assessment. The results of interviews with teachers are stated as follows.

> *"nilai utama tetap diambil dari produk akhir proyek, sementara proses hanya sebagai pelengkap* (The main value is still derived from the final product of the project, while the process is only complementary)" (Teacher 2).

> *"cara yang saya terapkan yaitu lebih menilai haisl produk akhir. Kalaupun proses lebih memberikan masukan saja untuk penyelesaian proyek* (The method I apply is to focus more on evaluating the final product. Even if the process only provides input for project completion)" (Teacher 4)

Statements from Teachers 2 and 4 indicate that teachers still prioritize final results as an indicator of learning success. This indicates that teachers still had a limited understanding of the principles of authentic assessment in PjBL.

The most dominant misconception was found in the learning reflection stage, with 74.3% of teachers demonstrating an inaccurate understanding. Reflection is often perceived as part of the final evaluation, rather than a metacognitive process that helps students understand their learning

experiences. The interview findings revealed that reflection is rarely carried out systematically. Informants stated that:

> *"refleksi biasanya saya lakukan saat memberi nilai akhir proyek, belum sampai membahas proses belajar siswa* (I usually reflect when giving final project grades, before discussing the students' learning process)" (Teacher 5).

> *"kalau saya, refleksi dilakukan tidak satu per satu, dilakukan perwakilan saja. Hal ini karena keterbatasn waktu kami sebagai guru. Kami memiliki banyak siswa dan kelas untuk diajar* (In my case, reflection is not done individually, but only by representatives. This is due to our limited time as teachers. We have many students and classes to teach)" (Teacher 6)

This statement indicates that reflection had not been positioned as an essential component in the PjBL cycle. They tended to provide the reflection after the project was completed because teachers had many students and classes, making it difficult for them to reflect on each project as it was being worked on.

3.2. Discussion

The results of this study indicate that Indonesian language teachers still have significant misconceptions in understanding and implementing PjBL. These misconceptions do not only appear in one aspect, but also cover conceptual understanding of the nature of PjBL, the types of practices carried out by teachers, and the stages of PjBL that are most prone to deviation. This confirms the statement by Yamin et al. (2023) that the implementation of PjBL steps is the most challenging for teachers because they are still accustomed to conventional learning methods, such as the teacher-centered approach, which has been used for many years (Harmer, & Stokes, 2014). The quantitative data showing a high prevalence of misconceptions is inextricably linked to the qualitative findings, which reveal that teachers often equate PjBL with administrative task completion rather than pedagogical innovations. Thus, a distinct gap between the PjBL model as formulated in theoretical studies and the learning practices carried out by teachers in the classroom. This gap is rooted in teacher cognition, which suggests that teachers' beliefs, knowledge, and interpretations of instructional models strongly influence how pedagogical approaches are enacted in classroom practice (Gao & Zhang, 2020; Shiu, 2024; Sulistyowardani et al., 2020). When teachers possess an inaccurate conceptual model, the implementation fidelity of complex approaches like PjBL is inevitably compromised.

The integration of quantitative prevalence data with qualitative thematic insights illuminates a critical disconnect. Quantitatively, most teachers interpret PjBL as assigning project tasks with a primary emphasis on the final product. Qualitatively, this 'product fixation' mirrors a systemic orientation toward quantifiable results over process-based learning. This indicates that teachers tend to understand PjBL procedurally and superficially, rather than as a constructivist-based pedagogical approach. While PjBL theoretically centers on inquiry, collaboration, reflection, and authentic problem solving to enhance students' autonomy in learning (Mohamad & Tamer, 2021), teachers in this study reduce these complex dynamics to mechanical project submissions. This shift implies that despite the curriculum's push for constructivism, classroom practice remains tethered to a traditional paradigm. Darling-Hammond et al. (2020) believe that this condition reflects a broader tension within education systems: the conflict between mandates for "meaningful learning" and the reality of classroom environments still optimized for task completion.

Furthermore, the identified types of misconceptions indicate that teachers seem not yet to fully understand the role of students as active learners, the importance of step-by-step planning, and the function of assessment and reflection in PjBL. Misconceptions about assessment, which is understood only as an evaluation of the final product, and reflection, which is considered non-essential, show that teachers are still operating within a traditional learning paradigm that is oriented towards results rather than process (Hafeez, 2021). In fact, in the ideal PjBL model, Jasrial et al. (2023) state that assessment is

continuous and reflection serves as a metacognitive tool that allows students to realize what and how they are learning. Teachers' statements in interviews emphasizing that "the important thing is for students to produce a product" illustrate the strong outcome orientation in PjBL practice in the field.

Compared to previous studies, these findings support and contrast with previous research highlighting the effectiveness of PjBL in improving students' language skills, critical thinking, creativity, and collaboration (Chikita et al., 2023; Gunawan et al., 2025; Hamdi et al., 2025; Ikanubun & Pau, 2025; Listiana et al., 2025; Oktavia et al., 2025; Rahayu et al., 2024). Unlike these studies, which focus on student learning outcomes, this research highlights the implementation side of PjBL from the teacher's perspective. This shift is important because the success of innovative learning models largely depends on teachers' conceptual understanding and their ability to implement the model with fidelity. The findings of this study are in line with Yang et al. (2021), Tanila et al. (2024), and Sánchez-García and Reyes-de-Cózar (2025), which show that the core components of PjBL, such as reflection, student autonomy, and inquiry, often do not appear consistently in learning practices.

Teachers' misconceptions also appear to be most dominant in the project planning and learning reflection stages. This shows that teachers experience difficulties in stages that require conceptual pedagogical skills, not just technical skills. These findings are in line with Yasa and Asril (2023), who found that elementary school teachers' skills in developing PjBL-based learning tools are still low, while Bhandari (2021) found that English teachers have good knowledge of the PjBL model. These similarities and differences may occur due to the different subjects taught by teachers. In fact, the planning stage of PjBL plays an important role in formulating authentic problems and sparking questions that form the foundation of the project, while the reflection stage determines the depth of meaning of the students' learning experience. When these two stages are not well understood, the implementation of PjBL tends to turn into a mechanical, product-oriented activity. These findings support the view of Krajcik and Blumenfeld (Krajcik & Blumenfeld, 2006), who assert that failure in the early and final stages of PjBL has the potential to weaken the entire learning cycle.

The possible causes of teachers' misconceptions about PjBL in this study may be related to several contextual factors, such as policy pressure to rapidly adopt PjBL, teachers' workload, and limited professional training on the pedagogical principles of project-based learning. Theoretically, teachers' misconceptions about PjBL can be understood as a form of incompatibility between practitioners' understanding and scientifically formulated pedagogical principles, as stated by Yates and Marek (Yates & Marek, 2021). In the context of Indonesian language learning, this misconception has the potential to reduce the effectiveness of PjBL in developing complex and contextual language skills. Ferrero et al. (Ferrero et al., 2020) emphasize that teachers' misconceptions can reduce the quality of learning because they encourage the application of methods that are not in line with the basic principles.

The results of this study contribute empirically to the understanding that challenges in PjBL implementation do not lie solely in the model itself or in student readiness, but also in teachers' understanding as the main implementers of classroom learning. By combining quantitative data and interviews, this study provides a comprehensive picture of the forms and stages of teachers' misconceptions in implementing PjBL. These findings enrich PjBL studies by highlighting teachers' misconceptions as a key issue that needs greater attention in policy development and teacher training. Therefore, strengthening teachers' conceptual understanding of PjBL through targeted professional development is essential (Irmawati et al., 2017). Such training should not only introduce the procedural steps of PjBL but also emphasize its pedagogical foundations, including inquiry processes, student autonomy, reflection, and formative assessment, while educational policymakers and school leaders provide continuous support to ensure more faithful implementation in classroom practice.

This study has several limitations. First, the number of participants was relatively small and limited to teachers from one regional context. Second, the data relied mainly on self-reported questionnaires and interviews. Future research may involve a larger sample and include classroom

observations to obtain a more comprehensive understanding of how teachers implement PjBL in practice.

4. CONCLUSION

This study has provided novel insights into language teaching practice on misconceptions in the application of the PjBL model in Indonesian language learning in schools. The findings confirm that the implementation of PjBL is not yet fully supported by adequate conceptual understanding among teachers. Although PjBL has been widely adopted in line with the implementation of the Merdeka Curriculum, classroom practices still show deviations from the principles and stages of PjBL. Empirically, this study maps the patterns and stages of teachers' misconceptions in implementing PjBL. Theoretically, these findings highlight that teachers' misconceptions are closely related to the issue of implementation fidelity, showing that the success of PjBL depends not only on curriculum policy but also on teachers' pedagogical understanding of the model.

Practically, the results of this study highlight that the educational policymakers and school leaders should shift their focus from merely mandating the use of PjBL to providing continuous, practice-based support. Targeted professional development programs should also move beyond introducing procedural steps and instead prioritize the model's core pedagogical foundations. Specifically, training modules should include intensive workshops on designing inquiry-driven problems, facilitating student autonomy, implementing continuous formative assessments, and fostering metacognitive reflection. Furthermore, schools should establish sustainable professional learning communities where teachers can iteratively design PjBL units and receive feedback on their practices. It aims to ensure that the model is applied with fidelity rather than as a superficial administrative requirement.

This study was conducted in a specific context involving Indonesian language teachers who had implemented Project-Based Learning, so the findings provide an empirical picture of teachers' misconceptions in that context. However, this study was limited to a relatively small sample and relied mainly on self-reported questionnaires and interview data. Therefore, future research is recommended to involve a broader range of participants and combine surveys, interviews, and classroom observations to obtain a more comprehensive understanding of teachers' misconceptions and their relationship with classroom implementation and student learning outcomes.

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