p-ISSN 2301-7554, e-ISSN 2541-3643
Volume 14, Issue 1, February 2026

ENGLISH REVIEW
Journal of English Education
Published by
English Language Study Program, Faculty of Teachers Training & Education, Universitas Kuningan, Indonesia in collaboration with AISEE (The Association of Indonesian Scholars of English Education)
AISEE

NEGOTIATING INNOVATION: A CASE STUDY OF PROJECT-BASED LEARNING FOR ENGLISH SPEAKING IN THE MERDEKA CURRICULUM

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APA Citation: Sakina, R., Uyun, A. S., Ridwan, R. N., Yunita, S., Mareta, F., & Indriani, N. S. (2026). Negotiating professional growth: Self-directed learning and institutional support for English teachers in Indonesian private Islamic schools. *English Review: Journal of English Education, 14*(1), 175-188. https://doi.org/10.25134/englishreview.v14i1.165

Received: 11-10-2025 Accepted: 18-01-2026 Published: 12-03-2026

Abstract: This qualitative case study investigates how an English teacher implemented PjBL in speaking instruction under the Merdeka Curriculum at SMAN Jatinangor, the challenges encountered, and the strategies used to address them. The participants were one English teacher and eleventh-grade social science students. Data were collected through classroom observations, semi-structured interviews, and document analysis. An adapted observation form from Roheni (2022) guided the observations, while interview data were analysed thematically and documents were examined using the READ approach. Data credibility was ensured through triangulation and member checking. The findings reveal a locally adapted nine-stage PjBL model consisting of lesson explanation, group formation, project planning, scheduling, group discussion, progress monitoring, project presentation, assessment, and evaluation. Five main challenges emerged—limited pedagogical mastery, time constraints, student discipline, assessment complexity, and group management—which were further conceptualised into three interrelated constraints: knowledge–skill, temporal–structural, and social–behavioral.
Keywords: *Merdeka curriculum; project-based learning; teacher challenges; qualitative case study; video project.*

INTRODUCTION

English has become a global language that is essential to business, education, technology, and cross-cultural communication. English proficiency is becoming more recognized in Indonesia as a necessary skill for students to engage with the global society (Rana & Shaikh, 2024). Among the four language skills, speaking is often considered the most visible indicator of communicative competence because it enables learners to express ideas, negotiate meaning, and collaborate effectively (Indriani & Sakina, 2022; Nguyen, 2023). However, despite prolonged formal instruction, many Indonesian students continue to experience persistent difficulties in speaking English.

These difficulties are rooted in deep-seated linguistic and psychological barriers such as limited vocabulary, weak grammatical control, anxiety, fear of making mistakes, and low self-confidence (Anggrisia & Robah, 2023). Such constraints indicate that improving speaking ability requires pedagogical approaches that address both cognitive and affective dimensions. At the same time, these entrenched problems suggest that innovative approaches will inevitably encounter *implementation friction* in real classrooms.

The Merdeka Curriculum was introduced to respond to 21st-century educational challenges by

emphasizing learner autonomy, differentiated instruction, critical thinking, and collaboration (Utami & Suswanto, 2022). It moves away from teacher-centred and exam-oriented traditions toward flexible, holistic learning that fosters creativity and adaptability (Hunaepi & Suharta, 2024). Nevertheless, this reform demands substantial shifts in teachers' pedagogical practices, making its classroom enactment complex rather than straightforward.

Project-Based Learning (PjBL) is one of the innovative learning models that facilitate meaningful learning experiences (Sarjani et al., 2023; Taiebine et al., 2024). It is a student-centred model where students take active responsibility for their learning (Zhang & Ma, 2023). This autonomy significantly increases student motivation and active participation compared to traditional lecture-based methods (Nurhidayah & Ain, 2025; Fajriani et al., 2024). PjBL also involves collaboration between students and teachers that aims to address real-world problems inspired by the underlying topic (Hartono et al., 2023; Zhang & Ma, 2023). Therefore, PjBL optimizes students' critical thinking, problem solving, creativity, imagination, and communication (Oktaviani et al., 2025; Parwoto et al., 2024). From aforementioned elaborations, it can be inferred that PjBL is an innovative teaching model that facilitates the students to cultivate necessary skills in 21st century that are aligned with the principles of Merdeka Curriculum.

A number of studies concerning on PjBL were conducted by many previous researchers. Most of them investigated the effectiveness of PjBL in various contexts, some of which were carried out by Nguyen (2023), Gunawan (2025), and Kristianti & Seputro (2023). The results showed that PjBL is effective in increasing students' speaking fluency, lexical richness, and pronunciation. By applying PJBL, the teacher cultivated students' autonomy, engagement, self-regulation, self-confidence, collaboration skills, critical thinking, and problem solving (Nguyen, 2023; Gunawan (2025).

Furthermore, other studies highlight the effectiveness of Project-Based Learning (PjBL) in English for Specific Purposes (ESP) contexts. For example, Kristianti and Seputro (2023) found that PjBL encourages engineering students to actively solve real-world problems, collaborate with peers, and develop career-related skills such as critical thinking, while increasing their learning motivation. Similarly, Hidayati et al. (2023) reported that PjBL significantly improved students' ESP learning outcomes and academic performance, with project tasks enhancing practical language use and engagement. In addition, Simbolon and Fitia (2023) noted that PjBL supports authentic professional communication tasks in ESP courses, and Firdaus and Septiady (2023) showed that project-based instruction promotes speaking ability by encouraging authentic communication in professional contexts. Overall, these findings suggest that PjBL facilitates meaningful, authentic, and career-relevant language learning in ESP classrooms.

Despite these well-documented advantages, the successful implementation of PjBL is not without obstacles**,** as several studies also report challenges related to students' capability and discipline, faculty readiness and resistance, curriculum and assessment complexity, time and resource limitations, and the need for strong project management strategies (Awaliah et al., 2025; Evenddy et al., 2023).

Other previous studies on Project-Based Learning (PjBL) have mainly explored students' perceptions of its classroom implementation (Nguyen, 2023; Anggraini, 2022; Nugraha et al., 2024; Havwini et al., 2024). Overall, the findings indicate that students respond positively to PjBL, reporting richer learning experiences, enjoyment, constructive challenges, and favorable evaluations of its benefits (Lucas, 2005; Anggraini, 2022; Nugraha et al., 2024). Students also perceive that project activities provide ample opportunities to practice speaking and writing in English, apply grammatical structures in meaningful contexts, and improve their language proficiency (Havwini et al., 2024; Bei & Tiarina, 2025).

However, despite this substantial evidence from the students' perspective, empirical research that focuses on how teachers implement PjBL in English speaking classes—particularly under the Merdeka Curriculum—remains limited. One of the few relevant studies, conducted by Putri (2023), examined the use of PjBL in teaching narrative writing and found that the teacher followed four stages adapted from the Buck Institute of Education (2019): launching the project, building knowledge, developing understanding and skills, developing and critiquing products, and presenting the products.

Consequently, there is still a lack of detailed, process-oriented studies that document how teachers adapt their instructional strategies to apply PjBL for speaking skills while dealing with

p-ISSN 2301-7554, e-ISSN 2541-3643
Volume 14, Issue 1, February 2026

the practical challenges of transitioning to the Merdeka Curriculum. To address this gap, the present study investigates how teachers implement PjBL in teaching English speaking skills and identifies the challenges they face along with the strategies they use to overcome them.

METHOD

This research employs a qualitative case study design because it enables researchers to explore a phenomenon holistically and in depth within its real-life context, providing detailed insights into processes and experiences (Gómez-Sota et al., 2024). This design is particularly appropriate for capturing the complexity of pedagogical decision-making and classroom dynamics within a specific institutional setting, allowing for a rich understanding of implementation frictions that may not be adequately revealed through broader survey-based approaches.

The study was conducted at SMAN Jatinangor, an urban public senior high school in Sumedang. This school was selected because it is one of the leading public schools in the region that has implemented the Merdeka Curriculum and is well known for its supportive learning environment and high level of student achievement, one of which is in English. One experienced English teacher (more than five years of teaching experience) and her eleventh-grade social-science students were selected through purposive sampling.

This study was approved by the university's research board, and written consent was obtained from the teacher and students. Participants were informed about the study purpose, voluntary participation, and their right to withdraw, and pseudonyms were used to ensure confidentiality. As faculty members at the affiliated university, the researchers recognize that their professional backgrounds in ELT may have influenced the study design and interpretation of the data. To reduce potential bias, triangulation, member checking, and reflective field notes were employed throughout the research process.

Data were collected through non-participant observation, semi-structured interviews, and document analysis to ensure triangulation across multiple sources (Schlunegger et al., 2024). To enhance credibility, member checking was conducted by returning transcripts and interpretations to the teacher for confirmation (McKim, 2023). Observations were carried out over ten meetings using an adapted observation form from Roheni (2022) to capture how the teacher implemented PjBL in Grade XI Social 3 under the Merdeka Curriculum.

Semi-structured interview adapted from Kurnely (2018) was conducted face-to-face, beginning with prepared questions and then probing more deeply to obtain detailed information (Bhalla et al., 2023). The questions focused on four themes: implementation of Merdeka curriculum, application of PjBL in English speaking, challenges encountered, and strategies to address these challenges. The process of interview was recorded and transcribed. The transcribed interview transcription was read several times to get familiar with the data and to make codes. The codes were checked and rechecked to find themes that are relevant to the research purposes. The themes that had been found were reviewed, defined and named using the techniques proposed by Braun & Clarke (2023) and Hansen et al., (2025). The themes and transcribed interviews were sent to the teacher for member checking, that is a process of returning "transcripts, accounts, and interpretations (McKim, 2023; Vella, 2024).

At last, the supporting documents complemented the main data taken from the teaching administration documents such as lesson plans, syllabi, textbook, teacher's notes, and students' assignments. The document analysis was conducted to check and confirm previous primary data from observations and interviews. The documents were analysed by READ approach (Reading, Extracting, Analysis, and Distilling), a systematic framework that aligns with the reflexive thematic analysis (RTA) principles advocated by Braun and Clarke (2023).

All interview transcripts and documents were read repeatedly for familiarization, after which meaningful units related to the implementation of PjBL and the challenges faced by the teacher were highlighted and coded inductively. These initial codes were then compared and grouped into broader categories using constant comparison to identify recurring patterns, which were subsequently consolidated into preliminary themes; for instance, codes concerning difficulty in designing appropriate rubrics, challenges in assessing group work fairly, and subjectivity in scoring speaking performance were merged into the theme complexities in assessing project outcomes. The themes were reviewed iteratively by returning to the original transcripts to ensure consistency and credibility, resulting in five final themes that represent the main challenges in implementing PjBL for speaking skills under the

Merdeka Curriculum.

RESULTS AND DISCUSSION

As mentioned previously, this research aims to investigate how the teacher implements PjBL in English speaking skills under the Merdeka Curriculum, identify the

challenges encountered by the teacher in implementing PjBL in teaching speaking and how the teacher deals with those challenges. The findings of each purpose are elaborated below.

How the teacher implements project-based learning in English speaking

Based on the results of ten-meeting classroom observation, the teacher implemented PjBL through nine stages, encompassing explaining materialas, student grouping, designing a project plan, creating a schedule, discussing the project in each group, monitoring students, watching students' projects, assessing the project and evaluating the project.

These stages correspond to those outlined by Lucas (2005), with some adjustment incorporated. However, the teacher did not include the essential question stage that is commonly used to guide inquiry in PjBL. Instead, the teacher added four stages: explaining the material, student grouping, group discussion, and watching students' projects. Thus, the implementation focused more on procedural preparation than on inquiry initiation. The sequence of the ten meetings is presented in Table 1.

Table 1. *Observation result (Meeting 1-10)*

Meeting 1	Meeting 2	Meeting 3	Meeting 4	Meeting 5
Introduction (explaining the material)	Introduction (explaining the material)	- Student grouping - Designing a project plan	- Creating a schedule - Discussing the project in each group	- Project work - Monitoring 1
Meeting 6	**Meeting 7**	**Meeting 8**	**Meeting 9**	**Meeting 10**
- Project work - Monitoring 2	- Project work - Monitoring 3	- Project work - Monitoring 4	- Watching the project - Assessing the project	- Evaluation

At the initial stage, the teacher introduces and explains the material concerning narrative text. This stage is designed to provide students with essential conceptual understanding and contextual knowledge before they begin the project. This is consistent with the view of Sayimbetova (2025) who argued that the benefits of delivering material before carrying out a project is important, so that students can easily understand and complete the project.

The second stage was dividing students into groups, which is a key feature of PjBL because it encourages collaboration and discussion. Furthermore, group work helps students complete the project more effectively through teamwork, as stated by the teacher below.

> "Group division plays a crucial role in implementing project-based activities, as collaboration is a core feature of the project-based learning model. Working in groups enables students to complete the project more effectively through teamwork" (English Teacher).

Previous studies also show that working in groups improves communication, collaboration, and critical thinking skills (Afzal & Tumpa, 2025; Dwinata & Utami, 2025; Thio et al., 2024).

After grouping, the teacher offered two project options —drama or video— and the students selected the video project. This design stage is important because it helps students move to the next phase and develop a sense of ownership of the project (Roheni, 2022). Video projects also increase confidence, teamwork, and creativity, and are easy for students to complete using gadgets and editing applications (Rahmaniah et al., 2025; Zuliana et al., 2025). This stage is in line with Lucas (2005), who states that project design should include rules, schedules, and required tools to support student responsibility.

The teacher's choice of a familiar video project can be seen as a pragmatic adaptation strategy during the early implementation of PjBL. For a teacher who is still developing mastery of this approach, using a well-known project format helps reduce pedagogical risk, classroom uncertainty, and cognitive load. Instead of experimenting with unfamiliar tasks, the teacher selected an activity that was already understood

p-ISSN 2301-7554, e-ISSN 2541-3643
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by both the teacher and the students, making classroom management more *predictable* (Bell, 2010).

This finding supports studies on teacher innovation which show that teachers rarely apply new methods in a pure form; instead, they modify innovations to fit their existing knowledge, beliefs, and classroom realities (Fullan, 2016; Tizon-Viray, 2025). Such adaptive behavior reflects teacher agency, where teachers actively reshape curriculum policies rather than simply implementing them as written. However, while this strategy increases feasibility, it may also limit the transformative potential of PjBL, as familiar projects are more likely to focus on product completion than on inquiry and problem-solving.

During the fourth and fifth stages, the teacher guided students to create a schedule and discuss the project in groups. Structured planning and scheduling within project-based learning guide students in organizing project activities and completing tasks systematically (Sevani & Ramadan, 2023). These group discussions focused on storyline, roles, setting, and costumes.

At the monitoring stage, the teacher continuously supervised students' project progress, both in and outside school, and acted as a facilitator when students encountered difficulties. The first monitoring, conducted in the fifth meeting when students began writing scripts, revealed that while some groups had nearly completed their scripts, others were confused due to mismatches between the number of characters and the script. This finding supports Muna et al., (2025) who argue that video-based projects require substantial preparation, especially during the scriptwriting stage, where students must plan dialogues, organize ideas, and structure their spoken content before recording the final video.

The second monitoring in the sixth meeting showed that several groups had started recording, but they faced difficulties in creating suitable backgrounds such as palaces, forests, or imaginary settings. In response, the teacher provided guidance, reflecting the role of teachers as problem-solvers rather than mere instructors (Ban, 2023; Yuna et al., 2025).

During the third monitoring in the seventh meeting, students were assigned specific roles such as video editing and sourcing sound effects. This division of labor demonstrated that project-based learning increases student engagement and collaboration, consistent with Kristianti and Seputro (2023) and Pudjiarti et al., (2024), who highlight the benefits of teamwork in enhancing participation, motivation, and skill development.

In the final monitoring at the eighth meeting, all groups had completed their recordings but were still compiling and editing clips by adding music and transitions, in line with the teacher's guidance. This monitoring process aligns with Lucas (2005), who identifies project monitoring as a crucial stage for tracking progress and supporting students in overcoming project-related challenges

During the seventh and eighth stages, the teacher watched and assessed the completed video projects, all of which were submitted on time. The teacher expressed appreciation for students' efforts, despite the difficulties encountered earlier, and the class watched the videos together. Assessment was viewed as an essential part of learning, but the teacher did not prioritize perfection; instead, the focus was on meaningful learning experiences such as time management, collaboration, creativity, and increased confidence in speaking English. The teacher mainly assessed pronunciation and fluency, while grammar and vocabulary were not strongly emphasized. This can be seen in the result of interview below.

> "The assessment process is quite important, but behind all that I as a teacher really appreciate the results of their work. Even though some of the results are perfect, some are not too perfect. I don't emphasize that they have to be perfect; the important thing is that they have the experience to be able to manage time, work in groups, and most importantly, is learning. They can already be confident in speaking English. Regarding the aspects of the assessment, I will assess pronunciation and fluency, but grammar and vocabulary will not be emphasized" (English Teacher).

The assessment process was considered important to measure students' speaking ability and to motivate them to do their best, even if the results were not fully satisfactory. This approach aligns with Hidayat et al., (2023) and Levy-Feldman (2025) who state that assessment is an essential to provide evidence of students' achievement and helps educators evaluate learning outcomes.

Overall, the assessment was mainly conducted after the project was finished, while during earlier stages the teacher focused more on supervision than formal assessment.

Focusing assessment primarily on the final product can be understood as a pragmatic

compromise in school contexts characterized by heavy teaching loads, limited instructional time, and large class sizes. Teachers who are still developing their understanding of PjBL may prioritize end-product assessment because it is simpler to administer and easier to align with existing reporting systems (Bell, 2010; Thomas, 2000). Within the framework of the Merdeka Curriculum, which promotes teacher autonomy and flexible pedagogy, this approach may enable teachers to sustain innovation without being overburdened by complex formative assessment procedures (Ministry of Education, Culture, Research, and Technology, 2022).

Nevertheless, reliance on summative assessment at the end of the project risks undermining the core process-oriented philosophy of PjBL. PjBL is designed to value learning trajectories, including collaboration, inquiry, reflection, and iterative problem-solving, not merely the final artefact (Larmer, Mergendoller, & Boss, 2015). When assessment neglects these processes, students may focus on producing a product rather than engaging deeply in learning activities, which contradicts the student-centered goals of the Merdeka Curriculum. Therefore, although end-stage assessment may serve as a short-term solution, future practice should progressively incorporate formative and process-based assessment to more fully realize the pedagogical intentions of PjBL and support the development of 21st-century skills (Darling-Hammond et al., 2019).

The final stage was evaluation, in which the teacher and students discussed difficulties encountered during the project and the solutions adopted. The main problems were time management due to project work being carried out outside school and difficulty in finding appropriate settings. Despite these challenges, students showed high enthusiasm and creativity in completing the project. This was stated in the results of interviews.

> "When the students' projects have been completed, I really appreciate them. Maybe this meeting can be said as an evaluation. I also want to know their difficulties in working on the project and what solutions they made to complete it. And it can be concluded that their biggest problem is managing time because project work is carried out outside of school, and they also have difficulty finding place settings, as we know in the previous meeting. What makes them very happy is their passion for making this project; they are very excited for it. In addition, it can develop their creativity (English Teacher).

These findings are consistent with Mustika & Suhartini (2025) who report that video-based PjBL enhances students' creativity, social interaction, and provides authentic learning experiences. This evaluation stage aligns with Lucas (2005), who states that the final phase of project implementation involves reflecting on students' experiences, identifying challenges, and discussing problem-solving strategies.

The nine-stage of PjBL implemented by the teacher indicates that the teacher adapted PjBL to classroom conditions. However, the omission of the essential or driving question stage creates tension with the fundamental principles of PjBL. A driving question functions as the intellectual anchor of a project, guiding inquiry, problem formulation, and problem-solving, and its absence risks reducing projects to procedural tasks rather than authentic investigations (Larmer et al., 2015).

In this study, the teacher prioritized procedural preparation, such as providing explanations and step-by-step instructions, which supported task completion but limited opportunities for student-generated questioning, critical thinking, and inquiry. This pattern reflects findings by Thomas (2000) and Bell (2010), who note that teachers in early stages of PjBL implementation often focus on control and structure to ensure feasibility. Consequently, within the initial implementation of the Merdeka Curriculum, teachers may emphasize manageability over inquiry, revealing a persistent gap between the curriculum's learner-centered aspirations and everyday classroom practices (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, 2022; Darling-Hammond et al., 2019).

This study reveals a paradox: although the Merdeka Curriculum is designed to foster student independence, its classroom implementation often requires teachers to exercise tight control over time management, group coordination, and discipline. This finding indicates that learner autonomy in PjBL does not emerge automatically but must be systematically scaffolded through structured teacher guidance and regulation (Thomas, 2000; Bell, 2010; Sakina et al., 2022). This condition reflects the concept of *guided autonomy*, in which teachers initially provide strong external regulation to support students' transition toward self-directed learning (Zimmerman, 2002). Within the context of the

p-ISSN 2301-7554, e-ISSN 2541-3643
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Merdeka Curriculum, which emphasizes flexible, student-centered learning, this tension highlights a persistent gap between curricular ideals and classroom realities, especially during early stages of pedagogical change (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, 2022; Darling-Hammond et al., 2019).

Challenges encountered by the teacher in implementing PjBL in teaching speaking

To address the second research question, data were collected through a semi-structured interview with the teacher. The findings reveal five major challenges in implementing PjBL: limited mastery of the PjBL approach, difficulties in time management, problems related to student discipline, complexities in assessing project outcomes, and challenges in organizing students into groups. These challenges can be conceptually framed as three interrelated categories of constraints, namely knowledge–skill, temporal–structural, and social–behavioral constraints.

The first challenge encountered by the teacher was limited mastery of PjBL approach, which constitutes a knowledge–skill constraint that restricted teacher's pedagogical agency. As the Merdeka Curriculum had been implemented for less than one year at the time of data collection, the teacher had insufficient experience and professional preparation in applying PjBL. Although the teacher demonstrated a willingness to adopt the approach, this agency was constrained by limited instructional knowledge and uncertainty about the procedural stages of PjBL. In this sense, the teacher's agency was aspirational rather than fully enacted. This was stated by the teacher in the interview below.

> "There will inevitably be challenges, particularly regarding mastery of project-based learning (PjBL). I have rarely applied this approach in my classes. However, as the curriculum has recently shifted to the *Merdeka Curriculum*, which emphasizes project-based learning, I decided to implement it despite having limited prior experience with project-based activities" (English Teacher).

This finding is consistent with Evenddy et al., (2023) who reported that teachers often struggle to initiate project work when PjBL is newly introduced and not sufficiently addressed in prior training. Similar patterns have been identified by Thomas (2000) and Bell (2010), who note that early-stage PjBL implementation is frequently characterized by uncertainty, procedural focus, and reliance on traditional instructional practices. Therefore, limited mastery of PjBL should not be interpreted as resistance to innovation but rather as evidence that curriculum reform often advances faster than teachers' professional readiness, positioning teachers as motivated agents who remain structurally underprepared to fully enact pedagogical change (Fullan, 2016).

The second challenge was difficulties in managing time, constituting a temporal–structural constraint that further restricted teacher agency. The project was scheduled only two weeks before Ramadan, a period in which regular learning activities in many Indonesian schools are replaced by intensive religious programs. This institutional calendar forced the teacher to compress the project timeline and carefully regulate classroom activities to ensure completion. This is stated by the teacher in the interview below.

> "Another significant challenge concerns time management, which has become increasingly crucial at this stage. Since the learning activities for this month will be replaced by intensive religious program, I, as the English teacher, need to develop a well-structured schedule to ensure the project runs smoothly" (An English teacher).

Here, teacher agency was demonstrated through strategic planning and scheduling; however, it was strongly constrained by school routines and cultural-religious programs beyond the teacher's control. This indicates that agency in PjBL implementation is not merely an individual capacity but a negotiated practice shaped by temporal and institutional realities (Priestley, Biesta, & Robinson, 2015). The teacher's attempt to design a workable schedule reflects adaptive agency, yet these structural conditions limited opportunities for flexible, student-centered learning.

This finding is consistent with Zhao (2024), who identifies time management as a major challenge in PjBL implementation. Waly & Ashadi (2024) emphasize that effective PjBL requires strong teacher time-management skills to ensure that all project stages can be completed successfully. Similar constraints have also been reported in international studies showing that institutional timetables and curriculum pacing guides frequently restrict the depth of project-based learning (Thomas, 2000; Bell, 2010).

The third challenge was students' lack of discipline, which represents a social–behavioral

constraint that restricted the enactment of PjBL. Although projects were designed as collaborative group activities, a few students were not fully engaged in discussions and instead used their gadgets or distracted peers. This was stated in the interview below.

> "Furthermore, challenges arise in classroom implementation, as some students still display a lack of discipline. For example, while group discussions are taking place, certain students may engage in unrelated activities, such as playing with their gadgets or distracting others. Therefore, the teacher needs to develop effective strategies to prevent such behaviors and maintain a conducive learning environment" (an English teacher).

This finding confirms that learner autonomy in PjBL is not self-sustaining but requires continuous behavioral scaffolding (Zimmerman, 2002). Consequently, the teacher shifted from a facilitative role to a more regulative one to maintain a focused and productive learning environment, reflecting what Priestley, Biesta, and Robinson (2015) conceptualize as *situated teacher agency* shaped by classroom ecology.

This finding is consistent with Adnan and Rahman (2024), who reported moderate difficulties in maintaining classroom control during PjBL, who identified technical and behavioral constraints such as students' failure to follow project procedures. Similar challenges have been documented by Thomas (2000) and Bell (2010), who note that without explicit classroom management strategies, PjBL can easily shift from collaborative inquiry to off-task activity. Thus, while the Merdeka Curriculum promotes learner independence, social–behavioral realities necessitate a form of *regulative agency*, indicating that successful PjBL depends on teachers' ability to balance autonomy with structured discipline.

The fourth challenge that the teacher found was the complexity of project assessment, which must be conducted at the beginning, during the process, and at the end of the project. This can be seen in the interview below.

> "Another challenge I encounter involves assessing students' projects. Project assessment is typically conducted at three stages: the initial stage, the process stage, and the final stage of the project. However, it is sometimes challenging for me, as the English teacher, to effectively implement assessments that encompass all three aspects" (English teacher).

The difficulty in assessing projects across the initial, process, and final stages represents a major knowledge–skill constraint on the teacher's enactment of PjBL. Although project assessment is theoretically designed to capture students' learning trajectories holistically, the teacher reported challenges in designing appropriate criteria, constructing rubrics, and aligning assessment with learning objectives at each phase of the project. This indicates limited assessment literacy in formative and process-oriented evaluation, which is a common issue in PjBL implementation (Bell, 2010).

These knowledge-related difficulties were further intensified by temporal–structural constraints**.** Continuous monitoring and feedback require extended instructional time and manageable classroom conditions, yet the teacher had to operate within restricted lesson durations and diverse levels of student engagement. As Thomas (2000) argued, formative assessment in PjBL is time-intensive and often constrained by rigid school schedules, which limits teachers' ability to implement assessment at all three stages consistently.

Moreover, the need to balance between individual and group performance at the final stage introduces a social–behavioral constraint, as uneven participation among group members complicates fair evaluation. Variations in students' commitment and contribution made it difficult for the teacher to accurately capture both the learning process and the final product, echoing findings by Krajcik and Blumenfeld (2006) that assessment in collaborative projects is inherently complex and socially mediated.

The teacher's final challenge was organizing students into effective groups due to differences in English proficiency. In this situation, the teacher required to deliberately mix high- and low-ability students to ensure successful project activities. This is stated by the teacher in the interview below.

> "In terms of dividing into groups, I think it's quite difficult because each student has different characteristics and English skills. We really have to mix students who have high English skills with those who don't, depending on their goals. Those who have more abilities in English can help and those who are less proficient in English can also learn from students who have good abilities in English. Therefore, don't let a teacher make a mistake when dividing into groups" (English Teacher).

p-ISSN 2301-7554, e-ISSN 2541-3643
Volume 14, Issue 1, February 2026

The teacher's difficulty in organizing and dividing students into project groups primarily reflects a social–behavioral constraint arising from heterogeneous learner characteristics, especially disparities in English proficiency. Research on collaborative learning consistently shows that poorly composed groups tend to generate unequal participation and role domination, which may marginalize low-achieving students (Gillies, 2016). As noted in the teacher's interview, random grouping is insufficient in such contexts because students' linguistic abilities and interpersonal traits significantly shape the quality of collaboration.

This challenge is closely linked to a knowledge–skill constraint, as effective heterogeneous grouping requires specific pedagogical expertise, including the ability to diagnose learners' proficiency levels and to apply principles of cooperative learning. Gillies (2016) emphasizes that productive group work depends on teachers' understanding of positive interdependence, individual accountability, and promotive interaction. Without adequate mastery of these micro-pedagogical skills, teachers may struggle to ensure that mixed-ability grouping leads to meaningful peer support rather than task imbalance.

The process of mapping students' abilities and forming balanced groups also introduces a temporal–structural constraint. Designing equitable groups demands additional preparation time and continuous monitoring, which is difficult within the limited instructional hours typical of secondary schools (Thomas, 2000; Bell, 2010). This structural limitation is particularly acute in project-based learning, where assessment and facilitation extend beyond traditional classroom routines.

Despite these intersecting constraints, the teacher's strategy of deliberately mixing high- and low-proficiency students exemplifies strong teacher agency. This adaptive action aligns with Priestley's (2006) concept of agency, whereby individuals intentionally influence their functioning and life circumstances. By positioning more proficient learners as peer tutors, the teacher transforms group heterogeneity into an instructional resource, a practice supported by social constructivism and the notion of the Zone of Proximal Development (Rusli & Rasdi, 2025; Zhang, 2023). Such peer scaffolding enables less proficient students to progress beyond their independent capability while allowing more advanced students to consolidate knowledge through mentoring roles (Dewi et al., 2023).

These findings demonstrate that the teacher's experience in implementing PjBL is shaped by a dynamic interplay of knowledge–skill, temporal–structural, and social–behavioral constraints, rather than by a single isolated factor. Limited mastery of PjBL, restricted instructional time, classroom discipline issues, assessment complexity, and heterogeneous student abilities collectively constrained the teacher's capacity to enact the approach as ideally envisioned in the Merdeka Curriculum. Nevertheless, the teacher consistently exercised agency through adaptive strategies such as compressing project schedules, regulating student behavior, revising assessment practices, and deliberately forming heterogeneous groups. This pattern suggests that teacher agency in this context is not a fixed personal attribute but a situated and negotiated practice that emerges through continuous interaction with institutional structures and classroom realities. Consequently, the successful implementation of PjBL depends not only on curricular mandates but also on sustained professional support and systemic conditions that enable teachers to transform constraints into pedagogical opportunities.

How the teacher deals with those challenges

To address the final research question on the teacher's solutions to challenges in implementing PjBL for English speaking, data were collected through interviews, and the results are presented below.

Based on the findings, there are five major challenges in implementing PjBL: limited mastery of the PjBL approach, difficulties in time management, problems related to student discipline, complexities in assessing project outcomes, and challenges in organizing students into groups. Collectively, these challenges constitute interrelated knowledge–skill, temporal–structural, and social–behavioral constraints that shaped how PjBL was enacted in the classroom.

The teacher's limited mastery of PjBL constitutes a knowledge–skill constraint, as she expressed uncertainty about the procedural stages of the approach. Instead of abandoning PjBL, she demonstrated teacher agency by selecting familiar project formats, particularly video projects, which she perceived as the simplest and most manageable based on her prior experience. The teacher's adaptive choice reflects what Fullan (2016) describe as teachers' tendency to rely on existing pedagogical repertoires when faced with

innovation uncertainty. Furthermore, this situation is consistent with Fazilla et al., (2023) who emphasizes that that the ability to design effective PjBL project is strongly influenced by teachers' professional competence.

This form of agency also represents a pragmatic negotiation with temporal–structural and social–behavioral constraints. Video projects demand less intensive time allocation and classroom monitoring than inquiry-heavy projects, making them feasible within restricted lesson schedules (Thomas, 2000; Bell, 2010). At the same time, such projects support engagement and peer collaboration among students with varied proficiency levels, thereby addressing participation and discipline issues (Gillies, 2016). In this way, the teacher's choice demonstrates how agency functions as an adaptive mechanism that mediates multiple constraints and enables PjBL to be enacted in a reconstructed yet contextually viable form (Priestley, Biesta, & Robinson, 2015).

The second challenge in implementing PjBL was difficulty in managing time, which constitutes a temporal–structural constraint. To manage the extended nature of project activities, particularly video production, the teacher exercised teacher agency by developing a detailed weekly schedule to distribute project tasks across several meetings. This adaptive practice aligns with Priestley et al., (2015) conceptualization of agency as a situated response to contextual conditions.

This scheduling strategy also addresses knowledge–skill constraints, as it requires pedagogical competence in sequencing activities and anticipating student workload (Thomas, 2000; Bell, 2010). Moreover, by establishing clear timelines, the teacher indirectly mitigated social–behavioral constraints, as structured routines support students' self-regulation and sustained engagement in collaborative work (Zimmerman, 2002; Gillies, 2016). Consistent with Anggraini (2022), the findings suggest that systematic planning functions as a mediating tool through which teacher agency negotiates temporal, pedagogical, and behavioral constraints, enabling more feasible PjBL implementation within institutional limitations.

To address the third challenge, that is issues of student discipline during project implementation, the teacher exercised strong teacher agency by institutionalizing systematic classroom monitoring as a facilitative strategy. Rather than controlling students' work, the teacher repositioned herself as a learning facilitator who sustained a supportive classroom climate, observed project development, and provided timely assistance when students encountered difficulties.

This practice represents an agentic response that mitigates knowledge–skill constraints by scaffolding students' self-regulation and collaborative competence (Zimmerman, 2002; Bell, 2010), while simultaneously negotiating temporal–structural constraints through the strategic reallocation of instructional time for sustained supervision (Thomas, 2000). Through this adaptive role enactment, the teacher was able to preserve productive learning conditions and maintain students' engagement throughout the project cycle. In line with Roheni (2022) and the ecological view of teacher agency proposed by Priestley et al., (2015), this finding underscores that the success of PjBL depends not only on the design of project tasks but also on teachers' capacity to exercise professional agency in guiding students' learning processes within existing classroom structures.

To manage project assessment effectively, the teacher exercised teacher agency by prioritizing summative evaluation at the final stage while reallocating the earlier phases of the project to intensive facilitation and supervision. During the planning and production stages, the teacher focused on guiding students, monitoring their progress, and providing immediate support, postponing formal judgment until the project was completed.

This strategy represents an agentic accommodation to knowledge–skill constraints, as the teacher was still developing expertise in process-based assessment, a challenge commonly reported in PjBL contexts (Bell, 2010), as well as to temporal–structural constraints, where limited instructional time and workload pressures make multi-stage assessment difficult to sustain (Thomas, 2000). In line with the ecological perspective of teacher agency, this adaptive reconfiguration of assessment practice demonstrates how teachers strategically balance pedagogical ideals with classroom realities in order to sustain meaningful project learning (Priestley et al., 2015).

To ensure effective group work in PjBL, the teacher demonstrated agency by systematically assessing students' abilities prior to organizing them into groups. Using prior grades and classroom observations, she formed heterogeneous groups that combined higher-

p-ISSN 2301-7554, e-ISSN 2541-3643
Volume 14, Issue 1, February 2026

ability students with lower-ability peers, ensuring balanced participation and promoting peer learning. This strategy addresses knowledge–skill constraints, as it requires understanding students' individual strengths and learning needs (Evenddy et al., 2023), as well as temporal–structural constraints, since additional preparation time is needed to evaluate abilities and plan group composition. By taking students' social interactions into account, the teacher also mitigated social–behavioral constraints, fostering smoother collaboration and effective teamwork. This approach illustrates how teacher agency can strategically navigate structural and social factors to support successful PjBL implementation (Priestley et al, 2015).

Overall, the findings highlight that the teacher's implementation of PjBL was shaped by the interplay of knowledge–skill, temporal–structural, and social–behavioral constraints, and that successful enactment relied heavily on teacher agency. Across all phases of project implementation, the teacher demonstrated adaptive strategies: selecting familiar project formats to align with her expertise, developing structured schedules to manage time, monitoring classroom activities to maintain discipline, prioritizing summative assessment while facilitating ongoing student progress, and forming balanced groups based on students' abilities.

These practices illustrate how agency functions as a mediating mechanism, enabling the teacher to navigate structural limitations, scaffold students' learning, and sustain engagement throughout the project cycle (Priestley et al., 2015; Roheni, 2022). Collectively, the study underscores that PjBL implementation is not determined solely by instructional design but depends on teachers' proactive, context-sensitive decisions that reconcile pedagogical ideals with classroom realities. This suggests that fostering teacher agency is crucial for overcoming constraints and achieving meaningful learning outcomes in project-based English instruction.

CONCLUSION

This study contributes a practical model of adaptive PjBL implementation in English speaking classes, illustrating how a teacher can strategically navigate knowledge–skill, temporal–structural, and social–behavioral constraints through context-sensitive agency. By providing foundational instruction, forming heterogeneous groups, selecting familiar project formats, developing structured schedules, and balancing facilitation with summative assessment, the teacher demonstrated adaptive strategies that supported collaboration, creativity, and confidence in speaking English. These findings have practical implications for teacher professional development, highlighting the need for hands-on training in PjBL scaffolding, group management, and formative assessment, rather than focusing solely on theoretical knowledge.

However, this study is limited by its single-case design, reliance on one teacher's perspective, and the lack of direct student outcome data. Future research should extend this model by measuring student speaking performance and engagement, or by conducting multi-case studies across different school contexts to examine how teacher agency interacts with diverse structural and social constraints. Overall, the study underscores that effective PjBL requires both teacher adaptability and systemic support, providing actionable insights for bridging the gap between curriculum ideals and classroom realities.

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