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Investigating Dimensions of Teacher Reflective Practice at Language Teachers

M. Rokhman Purnama

Universitas Pendidikan Ganesha, Indonesia *Email: miftakul@students.undiksha.ac.id*

Hanifah

Universitas Pendidikan Ganesha, Indonesia *Email: hanifah.2@student.undiksha.ac.id*

Mohamad Syarief Abdullah

Universitas Pendidikan Ganesha, Indonesia Email:mohamad.syarief@student.undiksha.ac.id

Afrianto T. L. Sogen

Universitas Pendidikan Ganesha, Indonesia Email: afrianto@student.undiksha.ac.id

Made Herry Santosa

Universitas Pendidikan Ganesha, Indonesia Email:mhsantosa@undiksha.ac.id

Ni Nyoman Parwati

Universitas Pendidikan Ganesha, Indonesia Email: nyoman.parwati@undiksha.ac.id

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Abstract

This study examines the implementation of teachers 'reflective practice in elementary schools in Bekasi, Indonesia, by analyzing teachers' self-reflection strategies, challenges, and their impact on improving teaching. Reflective teaching practices have been increasingly recognized as a fundamental approach to improving teaching effectiveness and promoting professional growth among educators. By utilizing a mixed methods approach, data was collected from 198 language teachers through the Teacher Reflective

Practice Questionnaire and in-depth interviews. The study explored five main dimensions of teacher reflection: interpersonal, intrapersonal, critical, behavioral, and strategic reflection. The results highlight the need for structured professional development programmers and institutional support to facilitate sustainable reflective teaching practices. In addition, the study underscores the importance of collaboration among educators, encouraging peer-to-peer discussions and self-assessment methods to enhance reflective practice. The findings show that teachers demonstrated high levels of interpersonal and behavioral reflection, with strong engagement in student interactions and classroom adjustments as there are still challenges in integrating reflective strategies into daily teaching due to time constraints, lack of institutional support, and limited professional development opportunities. In addition, teachers show varying levels of engagement in strategic reflection, especially in adopting technology-based reflection tools. By addressing these gaps, policymakers and educational institutions can design more effective training programmers that support teachers to become lifelong learners. Ultimately, fostering a culture of reflection in teaching not only improves educators' professional competence, but also enhances students' learning experiences and outcomes.

Keywords: Elementary education; Instructional improvement; Professional growth; Reflective practice; Teacher development

Introduction

The concept of reflection in education is rooted in the thoughts of John Dewey, who introduced the idea that learning does not occur merely through experience but through reflecting on that experience (Mohamed et al, 2022). Teachers should not only engage in routine activities but also take time to critically analyze and evaluate their teaching processes. Reflective practice enables educators to identify what works well in their classrooms and what needs improvement, thus fostering a mindset of continuous professional growth (Suphasri & Chinokul, 2021). This reflection also creates opportunities for teachers to share experiences and strategies with their peers, strengthening a supportive learning community within educational institutions. Such practices not only enhance teaching quality but also help students become more active in their own learning process, encouraging engagement and deeper understanding. Consequently, the consistent application of reflective practice can lead to a more dynamic learning environment that is responsive to students' needs and facilitates the sustainable professional development of teachers (Russell, 2022).

In modern education, the quality of teaching plays a crucial role in determining student success (Al Husaeni et al., 2024; Al Momani & Rababa., 2022; Popola and Bolaji., 2023; Shaturaev, 2023; Santoso et al., 2023). Teachers are not only responsible for delivering subject material but also for creating a conducive learning environment to enhance students' competencies. One increasingly recognized approach in teacher professional development is reflective practice, which emphasizes the importance of reflecting on teaching experiences as a means to improve learning effectiveness (Mohamed et al., 2022). Reflection is considered essential for continuous improvement in teaching quality, allowing teachers to evaluate their methods, adjust strategies, and ensure that learning objectives are effectively achieved (Nurkamto & Sarosa, 2020). This reflective practice benefits not only the personal development of teachers but also contributes to improved student learning outcomes by creating more relevant and responsive educational experiences.

Teacher reflective practice is a pedagogical approach in which teachers systematically evaluate and analyze their teaching experiences to enhance instructional effectiveness. This reflective practice is considered an integral part of teachers' professional development and contributes to improving the quality of classroom learning (Ashraf et al., 2016). According to

Schön, reflection in teaching practice can be categorized into two main types: reflection-in-action (reflection during teaching) and reflection-on-action (reflection after teaching). Reflection-in-action involves making spontaneous decisions in the classroom based on ongoing situations, while reflection-on-action allows teachers to analyze their experiences after the lesson and adjust their teaching strategies for future sessions (Luwango, 2021).

This practice not only helps teachers understand the learning process of students but also encourages them to continuously adapt and develop more innovative and responsive teaching methods to meet classroom needs (Ashraf et al., 2016). Thus, the implementation of these two types of reflection can enhance teaching effectiveness and create a more dynamic and interactive learning environment for students (Noormohammadi., 2014). The application of this reflection also fosters collaboration among teachers, enabling them to share successful experiences and strategies as well as provide constructive feedback to one another (Estaji and Fatalaki, 2023).

The importance of this collaboration not only strengthens the professional community among educators but also contributes to the overall improvement of education quality. (Huynh, 2022). Thus, schools can create a sustainable learning culture where both teachers and students actively engage in the process of self-development and educational quality enhancement. This also opens opportunities for the development of a more relevant curriculum that aligns with students' needs, enabling them to learn more effectively and enjoyably (Osman et al., 2023). With this innovative approach, it is expected that students will not only acquire academic knowledge but also develop essential social and emotional skills for their future lives (Pokhrel, 2022).

The application of this approach also enables teachers to evaluate the effectiveness of their teaching methods, allowing necessary adjustments to enhance student learning outcomes. With this focus on continuous development, schools can create a culture of innovation that encourages all members of the educational community to keep learning and evolving (Garrido, 2023). This, in turn, contributes to the creation of an environment that fosters collaboration among teachers, students, and parents, strengthening relationships within the educational community. Thus, this collaboration not only enhances student engagement in the learning process but also enriches the overall educational experience (Huynh, 2022; Kongsaenkham). The involvement of all parties in the educational process creates a positive synergy, where new ideas can emerge and be implemented to address existing challenges. This synergy also allows for the development of more relevant and adaptive programs that meet the unique needs of each student and maximize their learning potential (Nurfaidah, 2018).

Developed this concept by introducing two main types of reflection: reflection-in-action and reflection-on-action. Reflection-in-action refers to the process of critical thinking while teaching, allowing teachers to make real-time adjustments based on student responses and learning progress (Segal, 2024). Meanwhile, reflection-on-action occurs after the lesson has ended, enabling teachers to retrospectively analyze their teaching methods and make improvements for the next session (Estaji and Fatalaki, 2023). These two types of reflection form the foundation of reflective practice models widely implemented in teacher training programs worldwide. This model not only improves teaching quality but also encourages teachers to become lifelong learners, continually developing their skills and knowledge for the benefit of their students. Thus, the implementation of reflective practice is expected to create a more responsive and adaptive learning environment, allowing students to reach their maximum potential in the learning process (Aryal, 2024).

Reflective practice has been recognized as a key strategy in teacher professional development. Research indicates that teachers who actively engage in reflection tend to have a

deeper understanding of their students' needs, are better able to adjust teaching strategies effectively, and are more innovative in facing classroom challenges (Ashraf et al., 2016). Additionally, reflection increases teachers' self-awareness regarding their role as facilitators of learning, ultimately contributing to improved student learning outcomes (Alharhi & Aber, 2023). By fostering a habit of self-assessment, reflection encourages teachers to become lifelong learners who continuously strive for excellence in their professional practice (Suphasri & Chinokul, 2021). Reflection also helps build learning communities among teachers, facilitating the exchange of ideas and experiences that can collectively enrich teaching practices. Thus, the reflection process not only benefits individual teachers but also creates a collaborative environment that supports continuous professional development in education (Fauzi & Khusumadewi, 2024).

Despite the well-documented benefits of reflection, not all teachers integrate this practice into their routines. Several studies indicate that many educators face difficulties due to time constraints, lack of institutional support, and limited understanding of how to effectively apply reflection in their teaching context (Suphasri & Chinokul, 2021). Moreover, there is often no systematic guidance on how to engage in reflective teaching beyond traditional methods such as journaling and peer discussions (Ishaaq & Nasreen, 2024). The absence of a structured framework for reflection can make it challenging for teachers to incorporate reflective practices into their daily professional routines (Alsuhaibani, 2019). Developing a clear and accessible framework for reflection can help overcome these challenges, enabling educators to more effectively evaluate their teaching practices and enhance student learning outcomes. Therefore, it is crucial to develop training and resources that support teachers in regularly implementing reflection, allowing them to experience the benefits of this practice in their professional growth (Bawaneh et al., 2020).

The development of reflective skills will not only improve teaching quality but also create a more inclusive and supportive learning environment for all learners (Estaji and Fatalaki, 2023). The importance of continuous training and support from educational institutions will also be a key factor in ensuring that teachers can effectively apply these reflective strategies throughout their careers. The consistent implementation of reflective practice will encourage teachers to periodically evaluate their teaching methods, allowing them to refine and adapt strategies based on students' evolving needs (Jaeger, 2013). Another major issue is the challenge of implementing reflective practice, as many teachers may be familiar with the concept but struggle to integrate it effectively due to time constraints, lack of training, and inadequate institutional support (Suphasri & Chinokul, 2021). However, there are fewer researchers who have revealed the whole issue in elementary schools based on the complexity of teacher performance. On this hand, it is necessary to know the reflective teaching practices which include aspects of guidance and teaching as well as the more intense needs of learners at the beginning of the year.

This study aims to address the identified research by exploring the implementation of reflective teaching practices by quantitative and qualitative descriptive approaches in language teachers of elementary schools. Specifically, this study seeks to analyze how teachers understand and apply reflective practice in their daily teaching routines. Moreover, this research aims to identify the key challenges teachers face in integrating reflection into their professional development and teaching practices. By investigating these challenges, this study seeks to provide practical solutions that educators and policymakers can implement to enhance reflective teaching strategies.

Literature review

Several models have been developed to support the implementation of reflective teaching in instructional practice. One commonly used model is the reflective cycle model developed, which divides reflection into three stages: reflection before the lesson, reflection during the lesson, and reflection after the lesson (Aryal, 2024). Reflection before the lesson involves planning instruction by considering previous experiences and expectations for student learning outcomes. Reflection during the lesson enables teachers to actively assess students' responses and adapt teaching strategies as needed. Meanwhile, reflection after the lesson helps teachers evaluate learning outcomes and determine improvements for future sessions. In educational theory, the reflective approach is also often associated with the perspectives of constructivism and metacognition, which emphasize that learning is an active process of knowledge construction by both students and teachers (Wahyuni,2023)

This approach not only enhances teaching effectiveness but also fosters a deeper understanding of the learning process, enabling educators to create more engaging and meaningful experiences for their students. (Lee & Moon, 2013) By incorporating reflective practices, educators can continuously refine their teaching methods and better support students' growth, ultimately leading to improved academic outcomes and a more dynamic classroom environment (Nurfaidah, 2018). Implementing such reflective practices encourages educators to adjust their strategies based on student feedback and performance, ensuring that the learning environment remains responsive and inclusive. (Baluchzada, 2023).

Overall, teacher reflective practice is a key element in improving the quality of teaching and learning. By systematically implementing reflection, teachers can develop a deeper understanding of their own practices, enhance their professionalism, and create a more effective learning environment for students. Although there are challenges in implementing reflection, strategies such as reflective journals, collaboration with peers, and the use of technology can help overcome these obstacles. Therefore, reflection should be an integral part of teachers' professional development at various levels of education

Table 1 shows 14 previous studies on teacher reflective practice. These studies show various approaches to understanding teacher reflective practice across different educational contexts and levels. Some of the main focuses include the relationship of reflection with teacher efficacy, teaching practice, and the use of learning technologies. Table 1 provides a strong literature base for further research on reflection in teacher professional development.

Table 1. Previous research teacher reflective practice

No.	Year	Title	Author	Journal
1	2013	Teacher Reflection in Literacy	Lee, S and Moon, S.	International Journal of
		Education—Borrowing from		Higher Education
		Bakhtin		
2	2013	Teacher Reflection: Supports,	Jaeger, E. L.	Issues in Teacher Education
		Barriers, and Results		
3	2014	Teacher Reflection and its	Noormohammadi, S.	Procedia - Social and
		Relation to Teacher Efficacy and		Behavioral Sciences
		Autonomy		
4	2015	The effect of reflective teaching	Ferdowsi, M and	International Journal of
		on teachers'	Afghari, A	Education Investigations
5	2016	Reflective Teaching Practice in	Ashraf H., Samir,	International Journal of
		an EFL Context: A Qualitative	and Yazdi M. T.	English Linguistics
		Study		

	2010	T1 Au' 1 C D C :	N. C:11 C	D 1 11
6	2018	Three Attitudes of a Reflective Teacher	Nurfaidah, S.	Research and Innovation in Language Learning
7	2020	Gauging the Level of Reflective	Bawaneh, A. K.,	International Journal of
		Teaching Practices among	Moumene, A. B. H.,	Instruction
		Science Teachers	and Aldalalah, O.	
8	2021	Instructional Materials and	Morbo, E. A.	Indonesian Jornal of
		Alternative Teaching Practices in		Educational Research and
		Physical Education		Technology
9	2022	Exploring Reflective Teaching	Retnaningrum S. E,	Jurnal Education and
		Practice in Private Primary	Widya C. P, Serly A.	Development
		School in Rural Area	J.	
10	2022	Gauging the Level of Reflective	Campbell, B. (2022)	Changing English Journal
		Teaching Practices among		
		Science		
11	2022	Problems of teaching practical	Abdussemiu, A.	ASEAN Journal of Science
		biology in senior secondary	(2022)	and Engineering Education.
		schools		
12	2023	Exploring Saudi EFL Teachers'	Alharhi, R. M., and	Journal of Language
		Perceptions of Using Reflective	Aber, S. A.	Teaching and Research
		Teaching		
13	2024	Moments of Reflection: A	Luwango, L	Namibia CPD Journal for
		Phenomenological Study of		Educators
		Preservice Teachers		
14	2024	Teacher Reflection and its	Aryal, M.	Journal of Multidisciplinary
		Relation to Teacher Efficacy		Research Advancements
				(JOMRA)

Continuous reflection helps teachers assess the effectiveness of their teaching methods while also encouraging innovation and adaptation to the ever-changing needs of students (Garrido, 2023). The implementation of this approach benefits not only teachers but also enhances student development by creating a more meaningful and dynamic learning experience (Estaji and Fatalaki, 2023). Consistent application of reflection allows teachers to adjust their teaching strategies based on feedback and student learning outcomes, fostering a more responsive and adaptive learning culture (Wahyuni,2023). Furthermore, reflection provides opportunities for teachers to share best practices, learn from one another's experiences, and strengthen a professional community that supports collective growth. This development not only enhances individual skills but also reinforces collaboration among teachers, ultimately creating a more inclusive and productive learning environment for students (Nurfaidah, 2018).

The integration of technology into learning further facilitates the implementation of reflection and collaboration, enabling teachers to create more interactive and engaging learning experiences. The use of digital tools and platforms allows for real-time feedback collection, enabling teachers to adjust their instructional methods according to the evolving needs of students (Jaeger, 2013). Beyond improving teaching effectiveness, technology also encourages the exploration of new and creative methods while fostering continuous professional development for educators (Bawaneh et al, 2020). Moreover, technology in education creates opportunities for more inclusive learning, ensuring that all students can actively participate regardless of their backgrounds or abilities (Alharhi & Aber, 2023). This fosters a fairer environment where individuals can reach their full potential while preparing students to face the challenges of an

increasingly complex world (Widiastari & Fithriani, 2024). Therefore, educational institutions must continuously explore and integrate technology into their curricula to ensure that learning remains relevant and capable of addressing future challenges (Ferdowsi & Afghari, 2015).

Research method

Research design

To identify the practice of teacher reflection in learning, this research uses a mixed method approach with descriptive quantitative and qualitative research design, by processing and interpreting questionnaire data and in-depth interviews. Quantitative design involves analyzing the influence or effect of a particular situation on the desired outcome. Furthermore, qualitative designs explain the results of variables that are insufficient for statistical analysis (Lakshman,2000). Detailed information regarding this method is explained elsewhere (Susilawati et al., 2025).

Sampling design

To obtain individual data and research objects, a sample is needed as a representation of a population. To have a sample that accurately represents the data, there needs to be a sampling technique that empowers the conclusion or generalization of the theory raised. In general, sampling techniques are divided into probability or random sampling and non-probability or non-random sampling (Taherdoost, 2016). In this study, probability or random sampling is used to provide each individual in the population with an equitable opportunity to be selected as a sample in the case of a limited population (Giri, 2024).

A total of 198 language teachers of elementary schools in Bekasi, Indonesia were sampled in this study, with 18 of them providing data based on interviews and the others 180 teachers through the Teacher Reflective Practice Instrument, with a total of 58 state schools. This data collection has received approval from each participant for this study.

Research instrument

This research instrument uses the Teacher Reflective Practice Questionnaire (Estaji and Fatalaki, 2023) to obtain quantitative data on teachers in implementing reflective practice in their learning process. The questionnaire includes 5 dimensions of assessment aspects, including interpersonal, intrapersonal, critical, behavioral, and strategic. The questions are generally related to self-management of ability and relationships with learners and peers that support self-development. In addition, interviews were also conducted to support the qualitative data analysis process. The data from these interviews then reinforced the quantitative data holistically. This questionnaire has been used in the article "Development and validation of teacher reflective practice scale for EFL teachers", the results in the previous study received positive feedback so it can be used in this study. The instrument was used in the research and got positive results.

Figure 1 depicts five interrelated dimensions of Teachers' Reflective Practice, with five distinct areas, namely: Intrapersonal, Critical, Behavioral, Strategic, and Interpersonal. This figure displays the concept in which teachers can reflect on themselves through these different aspects, each of which is important in improving teaching practice. Intrapersonal focuses on self-reflection and personal development, Critical includes analysis and evaluation of teaching practice, Behavioral looks at the action aspect of teaching, Strategic refers to larger planning and decision-making, and Interpersonal includes relationships with students as well as effective communication within the teaching context. This figure provides a holistic picture of how teachers reflect on and develop their practice in multiple dimensions.

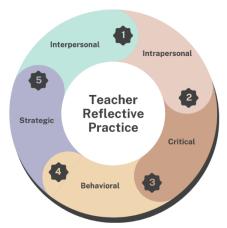


Figure 1. Visualization of dimensions of teacher reflective practice (Figure by Author)

Data analysis

Quantitative and qualitative methods were used comprehensively to obtain the desired data when conducting data analysis. Descriptive information was obtained from frequency calculations of responses based on mean and standard deviation. This quantitative data is then strengthened through qualitative analysis based on the results of interviews and explained descriptively with table interpretation of the results.

Results

The main focus of this study was to look at reflective teacher practices. The data analyzed came from questionnaires and interviews given to participants enrolled in elementary schools in Bekasi, Indonesia. A total of 198 teachers completed the questionnaire and were interviewed, providing valuable insights into reflective teacher practice. The questionnaire yielded a comprehensive set of responses regarding teacher reflection during learning.

The quantitative analysis reveals that teachers exhibit strong engagement in interpersonal and behavioral reflection. Many teachers demonstrated a high level of awareness regarding their interaction with students, with an average rating of 4.52–4.78 across various interpersonal reflection indicators. Similarly, behavioral reflection, which involves adapting classroom strategies based on student responses, also showed consistently high mean scores. However, strategic reflection particularly the use of technology-based reflective tools—was found to be an area with lower engagement, suggesting a gap in integrating digital platforms into reflective practices.

Table 2 presents the results of teachers' reflective practice categorized into five main indicators: interpersonal, intrapersonal, critical, behavioral, and strategic. Each statement has a mean and standard deviation (STD) that reflects the intensity of reflective practice. The highest value was found in the indicator of building good relationships with students, indicating the dominance of interpersonal reflection. The intrapersonal indicator emphasizes the importance of motivation and personal responsibility in teaching. The critical dimension shows teachers' sensitivity to students' backgrounds, such as ethnicity and gender. Meanwhile, behavioral and strategic aspects reflect teachers' real actions in improving professionalism. This data shows a high level of teacher reflectivity in general.

Table 2. Teacher reflective practice result (table by authors)

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No.	Indicators	Mean	Std		
	Interpersonal				
1	I try to ask my colleagues about their useful experiences.	4.52	0.61		
2	I talk to my students to get informed of their values and interests.	4.64	0,61		
3	I prefer one on one interaction with my students.	4.69	0.53		
4	I treat my students with empathy.		0.57		
5	I build good relationships with my students.	4.78	0.46		
6	I observe experienced teachers' activities to learn more about the	4.59	0.56		
7	effective teaching practices. I like to be observed by my peers or colleagues to evaluate my performance.	4.49	0.52		
8	I let my students criticize my teaching approach.	4.12	0.74		
9	I think of teaching as a social activity.	4.18	0.83		
	Intrapersonal		0.00		
10	I pay attention to the intrinsic motivation I need in my career path.	4.31	0.65		
11	I challenge my theoretical and practical knowledge.	3.90	0.95		
12	I think about myself as a role model for the students in every aspect.	4.02	0.93		
13	Creativity and spontaneity are important for me as a teacher.	4.58	0.52		
14	I think about ways by which I can develop my sense of responsibility	4.62	0.32		
17	and self-leadership.	7.02	0.77		
	Critical				
15	I value the cultural backgrounds of the students and try not to discriminate in favor of a special ethnic group.	4.72	0.45		
16	I try to design a democratic atmosphere for all students.	4.64	0.51		
17	I do not discuss the topics, escalating disputes among the students with different religious backgrounds.	4.20	1.01		
18	I pay meticulous attention to gender equality and its influence on teaching practice.	4.41	0.56		
19	I consider the socio-economic status of my students and do my best not to let it interfere with my evaluations.	4.01	0.98		
	Behavioral				
20	Before the class, I try to consider my students' needs and prepare the	4.57	0.54		
21	materials accordingly. I record the sessions to compare my performance with my previous	4.66	0.49		
22	attempts as a teacher.	4.21	0.77		
22 23	I try to read books and articles about professional development. I monitor my progress in the path of professional developments.	4.21 4.45	0.77		
23 24		4.43 4.41	0.58		
	I jot down the critical incidents that need reflection.	4.41 4.41	0.57		
25	I attend professional development workshops and webinar	4.41	0.39		
26	Strategic Longlyze the students' emerging the tests and emphasize them	4 20	0.67		
26	I analyze the students' errors in the tests and emphasize them.	4.28	0.67		
27	I read about the cognitive, metacognitive and affective strategies of learning and teaching.	3.85	1.04		
28	I should use the technological tools required in my field to improve my teaching.	4.37	0.60		
29	I pay attention to the strategies subsiding my anger.	4.42	0.60		
30	I do my best to provide my students with practical knowledge.	4.51	0.55		
31	I try to avoid outmoded class activities and adopt new ideas considering the students' needs.	4.28	0.73		

32	I emphasize learner centered activities to enable my students to become	4.46	0.61
	autonomous.		
33	Skill using is more important than skill getting activities.	4.04	0.83

Interpersonal reflection

Interpersonal reflection, which encompasses teacher-student interaction, peer collaboration, and feedback mechanisms, emerged as one of the strongest aspects of teacher reflection in this study. A significant number of teachers reported actively engaging in discussions with colleagues about teaching strategies (mean = 4.52, SD = 0.61) and maintaining strong empathetic relationships with students (mean = 4.62, SD = 0.57). Teachers also emphasized their commitment to creating inclusive classroom environments, with 4.72 as the mean score for valuing students' cultural backgrounds.

Intrapersonal reflection

Intrapersonal reflection, which involves self-evaluation and critical self-awareness, showed varying levels of engagement. Many teachers acknowledged the importance of self-awareness in their professional journey (mean = 4.31, SD = 0.65) and reported making conscious efforts to challenge their theoretical and practical knowledge (mean = 3.90, SD = 0.95). While a substantial number of teachers viewed themselves as role models for students (mean = 4.02, SD = 0.93), the relatively lower score in critical self-evaluation suggests that deeper self-reflective practices could be further enhanced through targeted professional development programs.

Behavioral reflection

Behavioral reflection, which focuses on teachers' ability to adapt their teaching strategies based on classroom dynamics, was another area where high engagement was observed. Teachers reported making frequent adjustments in lesson delivery based on student feedback (mean = 4.69, SD = 0.53) and actively observing experienced teachers to improve their own practices (mean = 4.59, SD = 0.56). A particularly noteworthy finding was the emphasis teachers placed on avoiding outdated classroom activities, with a mean score of 4.28 (SD = 0.73). Many teachers reported actively incorporating new instructional strategies that catered to student needs. Additionally, the practice of recording teaching sessions for self-evaluation was found to be prevalent, with a mean score of 4.66 (SD = 0.49). However, while many teachers valued adaptability, the qualitative interviews revealed that structural barriers such as rigid curriculum requirements and time constraints often hindered their ability to fully implement innovative teaching strategies.

Critical reflection

Despite the overall high engagement in interpersonal and behavioral reflection, critical reflection defined as the ability to deeply analyze one's teaching methods and pedagogical decisions was found to be comparatively weaker. Teachers' willingness to critically challenge their knowledge and assumptions scored a mean of $3.90~(\mathrm{SD}=0.95)$, one of the lowest-rated indicators in the study. Similarly, the tendency to analyze cognitive, metacognitive, and affective learning strategies had a mean score of $3.85~(\mathrm{SD}=1.04)$, indicating that deeper levels of critical reflection may not be fully integrated into everyday teaching routines. One possible explanation for this gap is the lack of structured opportunities for critical reflection within school environments. Many teachers expressed that professional development programs tend to focus on instructional techniques rather than fostering deep critical reflection. Moreover, the lack of mentorship

programs where teachers can engage in structured self-assessment was cited as a barrier to developing stronger reflective habits.

Strategic reflection

The lowest levels of engagement were observed in strategic reflection, particularly in areas involving the use of technology-based reflective tools. While teachers generally acknowledged the importance of professional development (mean = 4.21, SD = 0.77), their engagement with digital tools for reflective practice was limited. For example, the mean score for reading books and articles about professional development was 4.21, whereas the mean for actively utilizing technological tools to improve teaching was slightly higher at 4.37 but still indicated room for improvement. Interviews revealed that the primary barriers to integrating technology into reflective practice included a lack of institutional support, insufficient training, and limited access to digital tools. Some teachers expressed reluctance toward technology-based reflection due to unfamiliarity with such tools. However, those who did engage in digital reflection, such as using video recordings or online discussion forums, reported that these methods provided valuable insights into their teaching effectiveness.

Discussion

The findings of this study provide an in-depth understanding of the reflective teaching practices among elementary school teachers in Bekasi, Indonesia. The study reveals that while teachers exhibit high levels of engagement in interpersonal and behavioral reflection, challenges persist in fully integrating strategic and critical reflection into their daily instructional routines. The dimensions of reflection analyzed interpersonal, intrapersonal, critical, behavioral, and strategic offer a comprehensive perspective on the ways teachers engage in self-reflection to enhance their teaching methodologies.

One of the most significant findings is the high level of interpersonal reflection among teachers, which suggests that they actively seek interactions with their students and colleagues to improve their teaching strategies. Teachers reported frequently engaging in discussions with students to understand their interests, values, and learning challenges. This aligns with previous studies indicating that interpersonal reflection plays a crucial role in fostering an inclusive and responsive learning environment (Ashraf et al., 2016). Moreover, the teachers' willingness to engage in peer observations and professional discussions demonstrates a strong commitment to continuous learning and collaboration, which are essential components of professional development (Suphasri & Chinokul, 2021).

Behavioral reflection was another dominant dimension, with teachers frequently adjusting their instructional methods based on student feedback and classroom dynamics. The data suggest that teachers are highly adaptable and responsive to students' needs, a finding that aligns with Schön's concept of reflection-in-action. This adaptability enables teachers to modify their teaching strategies in real-time, ensuring that lessons remain effective and engaging (Segal, 2024). The findings also indicate that teachers actively integrate student-centered approaches, fostering a more participatory classroom environment that enhances student engagement and learning outcomes (Estaji and Fatalaki, 2023).

Despite these strengths, the study highlights considerable challenges in the domains of critical and strategic reflection. Many teachers struggle with engaging in deep, analytical reflection about their teaching practices, which limits their ability to critically evaluate and improve instructional methods. The mean scores for items related to critical reflection were notably lower than those for interpersonal and behavioral reflection, suggesting that teachers may lack structured

frameworks or sufficient training to develop critical reflective skills. This finding is consistent with previous research indicating that while teachers recognize the importance of critical reflection, they often lack the necessary tools and support to engage in this practice effectively (Nurkamto & Sarosa, 2020).

Research shows that teacher reflective practice has a positive impact on teaching effectiveness and student learning outcomes. Teachers who incorporate reflection into their practice tend to be more adaptive in their teaching strategies and more responsive to student needs (Ashraf et al., 2016). Additionally, reflection helps teachers understand their strengths and weaknesses, enabling them to grow into more competent practitioners (Wahyuni, 2023). Furthermore, reflection in teaching can contribute to the development of a collaborative culture among educators, fostering an environment that supports innovation and the sharing of best practices (Aryal, 2024).

The development of a collaborative culture not only enhances the quality of teaching but also strengthens relationships among teachers, which in turn can increase students' motivation and engagement in the learning process. (Suaib, 2022). Thus, the implementation of reflection in teaching practices becomes a key factor in creating a dynamic and sustainable educational ecosystem. The importance of this reflection becomes even more evident when considering its impact on student learning outcomes, which can significantly improve through a more focused and adaptive teaching approach. (Russell, 2022). The consistent application of reflective strategies enables educators to evaluate and adjust their teaching methods, thereby meeting the diverse needs of students more effectively. Consequently, the development of reflective skills not only benefits teachers but also fosters a more inclusive and responsive learning environment that addresses the challenges of contemporary education (Fatimah et al, 2021).

Strategic reflection, which involves long-term planning and the integration of innovative teaching tools, also emerged as a weak area among teachers. The data indicate that while teachers are aware of the potential benefits of technology-enhanced reflection, such as video recordings and digital self-assessment tools, they face barriers in adopting these methods. This is likely due to a combination of time constraints, limited access to digital resources, and a lack of professional training on how to effectively incorporate technology into reflective teaching practices (Bawaneh et al., 2020). Research suggests that structured professional development programs focusing on digital reflective tools can significantly enhance teachers' ability to engage in meaningful reflection (Wahyuni, 2023).

Institutional support or the lack thereof emerged as a critical factor influencing teachers' engagement in reflective practice. Many teachers expressed concerns that their schools do not provide adequate resources or encouragement for reflective activities. The absence of dedicated time for reflection within teachers' workloads further exacerbates this issue, as reflection is often perceived as an additional burden rather than an integral part of professional practice (Suphasri & Chinokul, 2021). Previous research has highlighted that without institutional support, even the most motivated teachers struggle to sustain reflective habits over time (Ishaaq & Nasreen, 2024).

To address these challenges, educational institutions should consider implementing structured reflective programs that provide teachers with clear guidelines on how to engage in reflection. The introduction of a formalized reflection framework about the model of reflection-in-action and reflection-on-action can help teachers systematically analyze their teaching methods. Additionally, providing professional development workshops that focus on critical and strategic reflection, as well as the use of digital tools, can empower teachers to adopt more effective reflection strategies (Estaji and Fatalaki, 2023).

Another key recommendation is the establishment of collaborative reflection groups within schools. Peer discussions and mentoring programs can provide teachers with opportunities to share experiences, discuss challenges, and learn from one another. Studies have shown that collaborative reflection enhances teachers' ability to critically analyze their teaching practices and implement meaningful improvements (Jaeger, 2013). Encouraging teachers to participate in online professional learning communities can also help bridge the gap in access to reflective resources, particularly for educators in under-resourced schools.

Finally, policymakers must recognize the role of reflective practice in teacher professional development and integrate it into educational policies. Providing incentives for teachers to engage in reflection such as allocating professional development credits or integrating reflection into teacher evaluation frameworks can encourage a more consistent and systematic approach to reflective teaching. Research has demonstrated that when reflective practice is embedded within teacher training programs and professional development initiatives, it leads to sustained improvements in teaching quality and student learning outcomes (Pokhrel, 2022). This study adds new information and suggestions regarding current issues in language education, as reported elsewhere (Masbara et al., 2024; Haristiani & Rifa'i, 2020; Haristiani & Rifai, 2021; Fatawi et al., 2024; Luckyardi et al., 2024a; Farida et al., 2024; Luckyardi et al., 2024b; Medani & Sakti, 2022; Saadu, 2023; Damayanti & Santosa, 2024; Abidin et al., 2021; Shaturaev & Khamitovna, 2023; Jamiu, 2023a; Oya, 2024; Nadtayay & Wongsaphan, 2025; Kurniawati, 2022; Jamiu, 2022; Jamiu, 2023b; Sanni, 2023; Abduh et al., 2023; Suprayogi et al., 2024; Suhardi et al., 2023; Cardoso et al., 2023).

Conclusion

The study on teacher reflective practice in elementary schools in Bekasi provides valuable insights into the current state of reflective practices in a non-Western educational context. This research has highlighted the significant role reflective teaching practices play in fostering professional growth, improving teaching strategies, and enhancing student learning outcomes. The study reveals that teachers in Bekasi demonstrate high levels of interpersonal and behavioral reflection, particularly in engaging with students and making adjustments in the classroom. However, challenges such as time constraints, lack of institutional support, and insufficient professional development opportunities hinder the full integration of reflective practices into daily teaching routines.

Despite these challenges, the study emphasizes the importance of adopting structured professional development programs and institutional frameworks to support teachers in their reflective practices. Teachers' varying levels of engagement in strategic reflection and the limited adoption of technology-based reflection tools also point to areas where further attention is needed. These findings underscore the need for educational institutions and policymakers to promote collaboration among educators, provide resources for ongoing professional development, and encourage the use of digital tools for reflection. Through such efforts, schools can create a culture that supports lifelong learning and professional growth among teachers, which, in turn, will positively impact student learning experiences and outcomes.

Furthermore, the study suggests that future research should focus on addressing the gaps in understanding reflective practices within the context of developing countries, especially through qualitative research and observational methods. This would allow for a more comprehensive view of how reflection is integrated into real classroom settings. Additionally, research on the impact of technology-based reflection tools could provide further insight into innovative strategies for

promoting reflective teaching. The successful implementation of reflective practices will not only enhance the quality of education but also contribute to the development of a more dynamic, responsive, and adaptive teaching and learning environment. Ultimately, fostering reflective teaching practices in elementary schools will contribute to the overall advancement of the educational system in Bekasi and beyond.

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The authors declared no potential conflicts of interest to the research, authorship, and/or publication of this article.

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