



In-service Teachers' Belief and Perspectives on Indonesia's Teacher Professional Education Programme: A Quantitative Study

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Abstract

This study investigates in-service teachers' beliefs and perspectives towards teaching, and in specific concerning their participation in the TPE. This research seeks to understand teachers' beliefs and values in teaching and learning, their needs regarding professional development, their perspectives on the TPE, and how their needs are accommodated in the TPE. This quantitative study involved in-service teachers (n=34) partaking in the TPE and the data collection using a closed-question questionnaire as the research instrument. This study uses descriptive statistics of Relative Important Indices (RII) as data analysis, which is a statistical tool to determine the factors that give weight to the respondents' perceptions by their level of importance. The findings of this study provide insights into teachers' beliefs toward teaching and their professional practice, which lead to an understanding of their needs for professional education and acknowledging their views of the level of facilitation of their needs in the TPE. The findings highlight teachers' beliefs in collaboration that are in line with their positive perspective of TPE, which has facilitated collaboration during the programme. The data also shows that 79% of respondents agree that assessment and classroom management should be a priority in the teacher education programme, which is aligned with their views that designing assessment was well facilitated during the subject-specific pedagogy workshop during the TPE. As a high-stakes programme held by the government to improve teachers' quality in Indonesia, based on the findings it is recommended that TPE be revisited from the teacher's perspective as the primary stakeholder, such as classroom management training.

Keywords: teacher beliefs; professional development, quantitative study

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INTRODUCTION

Improving teacher quality has been the main priority in the education of the government of Indonesia, for instance, poor subject-specific competence and lack of pedagogy mastery, in which teachers performed poorly in the teacher competency exam (Kusumawardhani, 2017; Yarrow et al., 2020). Although attempts to improve the quality of teachers for the past four decades have received mixed reviews (Bjork, 2013; Revina, 2020; Revina et al., 2020), policy in education enacted by the government has shown Indonesia's strong commitment to improving the quality of teacher education programme (Kawuryan et al., 2021; Permenristekdikti, 2017; PP, 2015; Sirait, 2016). Teacher's Law No. Fourteen, enacted in 2005 (UURI, 2005), has become an important landmark of the teacher reform agenda, which since then has been under scrutiny from international bodies such as the World Bank and RISE on its implementation and effectiveness toward national education performance (Chang et al., 2014; Rosser & Fahmi, 2018; The World Bank, 2020; Yusrina et al., 2022). Throughout almost two decades of implementation, the Teachers Law, with TPE as an embedded professional education program, has successfully certified half of the total number of the in-service teacher cohort in Indonesia, which accounts for more than 3 million teachers. Unfortunately, this improvement in the number of certified teachers was not aligned



with the advancement of quality in their professional practice (Kusumawardhani, 2017; Nurbaiti et al., 2019).

Considering the importance of TPE at the national level (Gore & Rosser, 2020; Rosser & Fahmi, 2018), it is crucial to respond to the gap in the literature on how Indonesia's in-service teachers perceive their need for professional education programmes. In addition, it is also essential to explore their beliefs about teaching and learning and how the TPE programme they have undergone facilitated their needs to improve their competencies and professional practice. Understanding teachers' work and teachers' perspectives on their practice will provide insight and meaningful information to inform better what works and what was considered to be effective in their professional practice, and eventually, it will lead to improving the policies related to teacher education.

TPE in Indonesia is a teacher professional education programme for in-service and pre-service teachers, embedded with a teacher certification programme in response to the Teacher Law. To obtain a professional teaching certificate, teachers must complete professional education and pass the competency exam administered by the government to be awarded a certification allowance. In addition, the main purpose of TPE (Kemdikbud, 2021, p. 10),

Teacher Professional Education (TPE) is expected to be able to answer various educational problems, such as (1) under qualification and (2) low competence teachers. In addition, teachers in the 4.0 industrial revolution era must have the ability to carry out innovative and fun learning by integrating critical thinking and problem solving, communication and collaborative skills, creativity, and creative skills, information and communication technology literacy, contextual learning skills, and information and media literacy.

In other words, TPE aims to elevate the status of the teacher in Indonesia as a profession and upgrade teacher competencies such as digital literacy, critical thinking, and collaborative skills; thus, professional teachers are expected to have a better mastery of the content subject, pedagogy, and professionalism, in comparison to their non-certified colleagues. Since its first implementation in 2006, TPE has undergone several changes in system and design to the current one in terms of duration, curriculum, and delivery method, which have been implemented to enhance the TPE programme.

Previous studies show that the TPE programme's progressive development met the needs of 21st-century skills and innovative teaching and learning with the introduction of digital learning tools in one of the learning stages in the current TPE model and promote collaborative work in school placement (Hayati & Widiati, 2015; Simanjorang et al., 2020). Although it received mixed results on the effectiveness of the implementation over the years (Huda et al., 2021; Situmorang et al., 2022; Suryanti et al., 2019), the changes in the programme show an improvement in terms of duration, the content of the modules, and the structure of the programme in general, which shows the Ministry of Education and Culture (MoEC)'s concern about the quality aspects. Although the programme is a top-down approach and heavily prescriptive of the curriculum, changes have shown positive results (Kusumawardhani, 2017; Revina, 2020). These studies recommended improving the teaching and learning process and assessment quality by promoting active learning strategies and implementing formative assessment, among others. In particular, the recommendation for the TPE implementation in regard to participant recruitment is that it must be reconstructed urgently (Simanjorang et al., 2020).

Research on teachers' beliefs has significantly contributed to understanding the influence of beliefs in teachers' professional practice and how it affects students' learning (Borg, 2003; Ellis, 2009; Feucht et al., 2017; L. Li, 2020). A seminal work by Simon Borg uses teacher cognition exclusively 'to embrace the complexity of teachers' mental lives (2003, p. 86) elaborates that teacher cognition refers to what teachers know, believe, and think, in which previous professional training and classroom practice substantially influence their beliefs in teaching and learning and needs of professional



development, which lead to their views on evaluating the TPE they have undergone. Borg (2003) further asserts that professional training that fails to acknowledge teachers' values and beliefs may be less effective in impacting classroom practice, which was supported by studies in the international context in which teachers' value and beliefs influence their professional learning (De Vries et al., 2012, 2014; Pedder & Opfer, 2013). Therefore, it is widely agreed that teacher cognition influences teachers' attitudes and professional approaches tremendously (Borg, 2019; Davis & Sumara, 1997; Ellis, 2016; Johnson, 2018), in which this research aims to explore the link between beliefs and needs of professional development and their perspective on their participation in the TPE programme.

Teachers' beliefs have a more significant impact on teachers' knowledge of designing the lesson plan, the type of teaching approach they employ, and their classroom instruction, as well as other choices and decisions they make in professional practice (Gilakjani & Sabouri, 2017; Li, 2012). Further, Li (2012) stated that three types of teacher beliefs significantly influence their teaching consciousness, attitude, and teaching method: (1) beliefs in the learner, (2) beliefs in learning, and (3) beliefs in themselves. The beliefs of the learners for the TPE participants are the driving force to improve their competence, and their beliefs in learning motivate them to change their classroom practice. This claim is strongly supported by a relevant study which shows that student-oriented beliefs influenced teachers' decisions to participate in professional development programmes (De Vries et al., 2014), this study's findings support this research's goal of understanding teachers' perspective on the TPE programme, and why students-oriented beliefs are particularly relevant to professional education. In addition, previous studies on teacher beliefs also mention its strong connection to their teaching practice (Hung, 2012; Msila, 2014; Ulla & Winitkun, 2018) and its influence on teacher change (Richards et al., 2001; Sansom, 2019). In this case, teacher change can refer to knowledge, beliefs, attitudes, and teaching practice.

The trend in international research on teacher education emphasises the importance of understanding teachers' learning and perspectives to transform classroom practice (Fan, 2022; Sansom, 2020; Sellars, 2012; Shidiq et al., 2022). This aligns with the study's aim to investigate how TPE could transform classroom practice in Indonesia and how understanding teachers' perspectives will lead to more effective reform. For these reasons, this study attempts to unfold three aspects: (1) exploring teachers' beliefs and values in teaching and learning; (2) understanding teachers' needs for professional development; (3) investigating teacher's perspectives on TPE and whether the training meets their needs to improve their professional and pedagogical competences.

MATERIAL AND METHODS

This study employed a descriptive quantitative research method, collecting quantitative data using online survey tools. The quantitative research method was employed to ensure factual and measurable data over the personal accounts of the nature of the qualitative research method. However, given the limitation of the quantitative approach, future studies could further explore the topic to gain deeper insight into teacher beliefs and experience. This study, in particular, investigated in-service teachers' perspectives on the TPE programme and whether it has facilitated their need to improve their teaching competencies.

Participants

This research involved in-service teachers in the TPE programme held from 2018 to 2020, during which TPE employed a hybrid model from the previously short training and portfolio ones. As an initial study to explore this topic, the researcher limited the data collection sampling to one university appointed by the government to run the programme, which limited the generalisability of the findings given the nature of TPE as a national-scale programme and the interpretation of the result might be affected. Hence, future studies could fill in the gap by including a broader range of institutions. In addition, the participant selection utilised a simple random sampling that targeted



teachers from mathematics, science, and literacy backgrounds, which also indicates the study's limitations. As per the nature of the sampling method, each member of the population had the same chance to be selected. The result in Table 1 showed the demographics of the participants, including gender, region, subject specialisation, and teaching experience. The survey was distributed through personal email integrated into the Qualtrics^{XM}®TM system. The return response, however, was deficient considering the total number of in-service teachers during the TPE programme in that period. Thus, the response rate was considered to be under-representing the cohorts, which set another study limitation. Qualtrics^{XM}®TM recorded 61 responses; however, after data processing and data reduction, there are 34 completed responses valid for further analysis. Considering the relatively small sample, which is part of the limitation of the study, this study still offers meaningful insight into teachers' perspectives. The survey was designed to obtain participants' full consent to take the questionnaire. Thus, there are no ethical issues during the data collection stage.

Research Instruments

This study uses a questionnaire survey adapted from the OECD TALIS teacher questionnaire (OECD, 2013) constructed using Qualtrics^{XM}®TM. The questionnaire is adapted to fit the specific context of the TPE programme, and the section on the TPE was adjusted to the context of the TPE hybrid model for 2018-2020, with stages of learning designed to ensure cultural or contextual relevance. The survey was designed to obtain demographic data of research participants, such as the length of time they have been an in-service teacher and the number of years they have been certified teachers. The data also showed the teacher's employment status as in-service teachers. These data were crucial for further exploration in data analysis. The questionnaire consisted of three parts, which aimed to investigate three aspects of the research questions, i.e., teachers' beliefs and values towards professional development, their needs for training, and ultimately, their perspectives on the TPE programme. The third part of the questionnaire specifically explored teachers' perspectives on each stage of the TPE programme. At the initial data collection stage, the researchers conducted a pilot study to ensure the readability and clarity of the questions; therefore, some adjustments were made following the feedback received from the participants at the initial stage. Specifically, the questions related to their perspectives of the TPE programme and whether their beliefs and needs have been facilitated through the TPE were adjusted in accordance with feedback from the pilot study.

Data Collection and Data Analysis

In line with the research objectives, the data analysis uses the Relative Importance Indices (RII) to measure the weight of importance of perceptions of teachers from a Likert-scale type questionnaire. According to Johnson and LeBreton (2004), RII is frequently used in the organisational research domain and is most known to model the cognitive processes associated with the evaluation and effectiveness of performance, programme, or leadership. Utilising RII, this research explores teachers' perspectives on their beliefs and needs for professional development to improve their competencies. This method is particularly suited to measuring teacher perception, which puts weight on the relative importance of the quality involved. In addition, considering this research attempted to measure the effectiveness of the TPE programme through the perspectives of the programme's participants, this method provides a robust argument of what they perceive as important.

The four-point Likert scale ranges from Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA). In this survey, respondents are to provide input on their perspectives based on a 4-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. The relative importance was calculated by dividing the variable of importance score by the largest importance score of the variables, then multiplying by 100%. The range in RII values put in the category suggested by Rooshdi et al. (2018) would be High ($0.8 < RII \leq 1.0$), High-Medium category ($0.6 < RII \leq 0.8$), Medium ($0.4 < RII \leq 0.6$), Medium-Low ($0.2 < RII \leq 0.4$), and Low ($0 \leq RII \leq 0.2$). As previously mentioned, the questionnaire is an adaptation of the teacher questionnaire



of TALIS (OECD, 2013), the four-point Likert Scale was chosen, particularly because it prevents neutral answers and may offer clearer data. However, it also acknowledges the limitation of less granularity in response.

RESULTS AND DISCUSSION

This study investigated teachers' beliefs and needs for training to improve their competencies, and how they perceived their TPE experience. The findings of this research based on RII results revealed that beliefs in learners and classroom management skills are the most critical aspects. Since the Indonesian teacher reform attempt to improve the quality of teachers in which TPE is embedded (Jalal et al., 2009), this research examines teachers' perspectives on TPE and whether the rigorous professional education they underwent met their needs to improve their competencies. Therefore, the respondents were the in-service teachers who graduated from TPE and obtained professional certificates. These sections provide findings of the data of what is the most critical.

Table 1 clearly shows the participants' demography. The difference in the participants' backgrounds certainly nuanced the teachers' perspectives. Although the results of this study are limited in generalisability, they are expected to represent the research population in the setting, as mentioned in the research methodology section.

Table 1. Participants' Demographic

Information	Categories	Percentage (%)
Gender	Male	26
	Female	74
School Level	Junior High	82
	Senior High	18
	Vocational	-
Workplace School Status	State School	47
	Private School	53
Workplace School Size	Small Scale	21
	Medium Scale	26
	Large Scale	53
Workplace School Location	Sub-burb/Village	18
	Small Town	47
	Big City	35
Subjects Taught	Mathematics	12
	Natural Science	50
	Bahasa Indonesia	9
	English	14
	Others	6
Employment Status	Government officer	35
	Permanent Teacher	50
	Non-permanent teacher	15
Working Period	Less than ten years	35
	Between 10-20 years	65
	More than 20 years	-
Certification Period	Less than 3 years	29
	Between 3-5 years	56
	More than 5 years	15

The three parts of the questionnaire were analysed using RII statistical analysis to identify the most important criteria based on the participants' responses. The first part explored the beliefs and values of teaching and learning. The second section focussed on questions about what the in-service teachers consider needed in



professional development. Finally, the last part concerns the teachers’ perspectives on the TPE programme and how their needs and beliefs have been facilitated. The key result of the RII analysis was presented as bar charts to highlight the highest and lowest-ranking items in each category (teacher beliefs, needs and perspective of TPE).

Teachers’ Beliefs and Values of Teaching and Learning

Overall, the level of teacher beliefs and values of teaching and learning based on the Relative Importance Indices (RII) is presented in Figure 1.

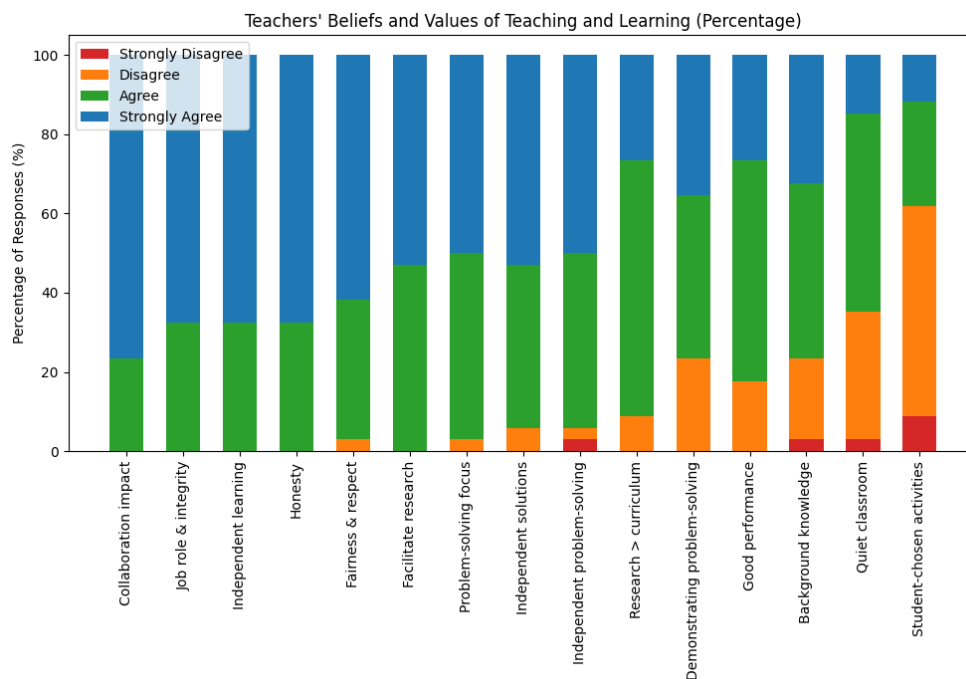


Figure 1. Teachers’ beliefs and values of teaching and learning (percentage)

It showed nine items ranked in the RII high category ($0.8 < RII \leq 1.0$), which showed that the in-service teachers’ beliefs in professional development placed the most importance on collaboration, which created a more significant impact. Collaboration was rated as a critical factor for professional growth; therefore, the TPE programme should integrate more peer collaboration opportunities, such as teacher-professional learning communities or teacher study groups. Furthermore, 76% of teachers strongly agreed, and 24% highly considered that continuous independent learning was part of their responsibility, which implied that internal motivation was the driving force to improve their quality as a teacher. According to De Vries et al. (2014), there were two dimensions of beliefs, student-oriented and subject-matter-oriented, that influenced teachers to participate in professional development activities. Based on the study, student-oriented beliefs are positively associated with teachers’ motivation for involvement in teacher upgrading programmes, which was evident in this study that research participants firmly believed that motivation to improve their skills to facilitate students in teaching and learning better is a vital factor for partaking in PD activity. It showed that they highly valued student-centred and active learning, for that reason, emphasising that student-centred learning strategies should have a bigger role in the TPE curriculum to align with teachers’ motivations and improve classroom practices. These findings are in line with the previous study, which found that teachers’ beliefs and motivation to improve their teaching quality through PD activity are mainly influenced by their motivation to impact students’ learning positively (Appova &



Arbaugh, 2018). Although teachers’ beliefs are complex, non-linear, and less certain (Basikin, 2020; Sansom, 2020), they are closely related to their classroom practice.

Meanwhile, six items had an RII value in the high-medium category ($0.6 < RII \leq 0.8$), including problem-based and project-based learning, which indicated that in-service teachers believed promoting student-centred and active learning is essential in classroom practice. Thus, this score suggested that facilitating students’ inquiry in the teaching and learning activities (Gore & Rosser, 2020; Popova et al., 2018) should be the focus of professional development, and it was recommended that it be accommodated in the TPE programme. All in all, the teachers’ beliefs and values of teaching and learning are essential: (1) student-oriented belief is a driving force for teachers to partake in professional development; (2) facilitating students’ inquiry is essential in teaching and learning.

Teacher’s Needs for Professional Development

Figure 2 presents the teacher professional development training level needed based on RII. Overall, respondents perceived that the items shown in Figure 2 represented the need for teacher professional education.

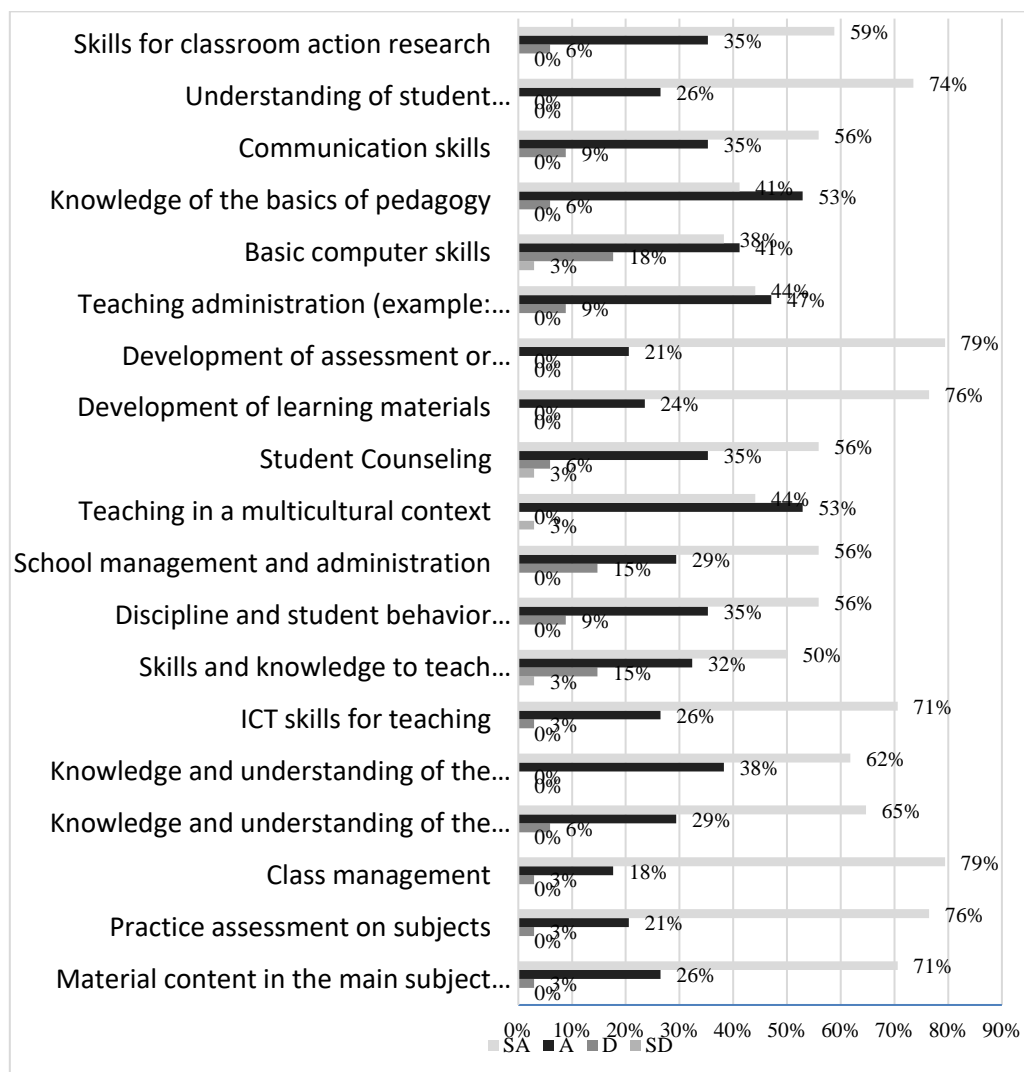


Figure 2. Needs for Teacher Professional Development



However, it can be concluded from the data that the most critical training needed for the in-service teacher was developing learning assessment and classroom management. From the data, assessment strategies and classroom management techniques were ranked as top priorities, accounting for 79%, indicating a gap in the current TPE offering, which signified the importance of these skills embedded in the TPE programme. Based on the country report of PISA 2018 (OECD, 2019), it was stated that 41% of Indonesian students are reported to experience bullying during school hours. Moreover, around 25% of students said their teachers must wait a long time for students to quiet before starting the teaching and learning session. This result revealed that classroom management was a top priority for facilitation as in-service teachers considered the skills crucial to their profession, and they believed these skills were under-facilitated in the TPE programme. It was recommended that TPE provide more practical training in classroom management, including strategies to handle student behaviour and create a productive learning environment. Research on Indonesia's education profile after 15 years of major education reform to improve the quality of education showed a significant rise in enrolment; however, the students appeared they did not learn at school, which resulted in a flat learning profile (Beatty et al., 2018; Bjork, 2013; Yarrow et al., 2020).

Further aspects that need to be facilitated in training according to the data were developing learning materials, understanding student development and learning patterns, and developing assessment strategies. The findings were unforeseen, considering that the TPE's main objective is to improve the teacher's professional and pedagogical competence with a high emphasis on classroom management skills. Although the TPE was structured with an emphasis on these modules, including designing teaching material and assessments, in-service teachers still considered it lacking. This study's findings solidify the claim that effective PD activity should relate to teachers' beliefs, as stated in the first findings, and practice in the classroom (Main & Pendergast, 2017; Sokel, 2019; Zeggelaar et al., 2020). Therefore, it was suggested that the TPE curriculum should expand training in formative and summative assessment methods to help teachers better evaluate student progress.

Facilitating Teachers' Needs in the TPE Programme

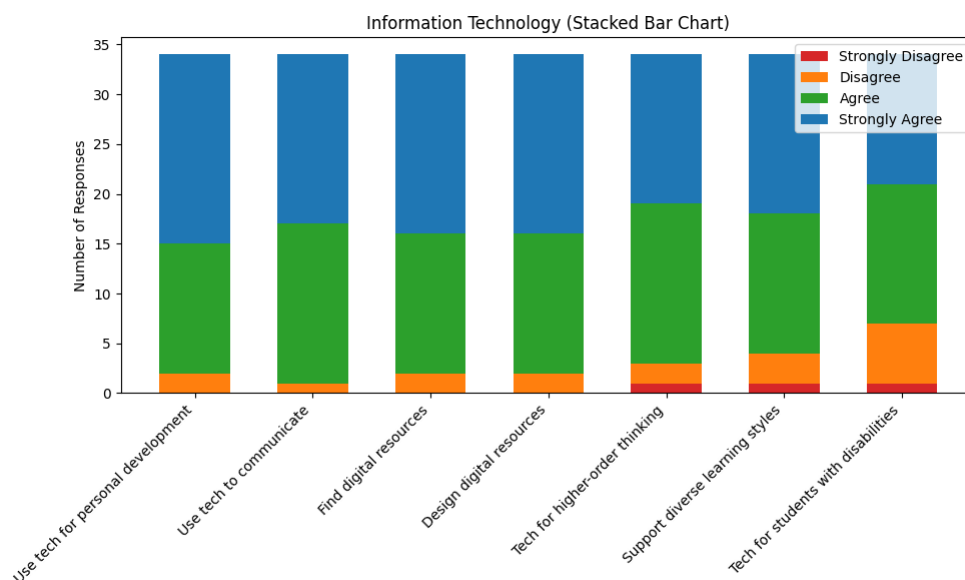


Figure 3. Information Technology



According to the report of PISA 2018 on Indonesia’s performance, 65% of teachers in advantaged schools and 44% of teachers in disadvantaged schools are fully certified (OECD, 2019), which further indicates a correlation between students’ performance and the quality of the teachers. Although previous studies also pointed out that “there is no strong evidence of the effectiveness of certified teachers on student learning outcomes and teacher performance” (Kusumawardhani, 2017, p. 590). The figures below illustrate the level of facilitation of teachers’ needs in TPE according to the level of importance analysed in RII.

The overall data from the RII score in the figures presented below are mainly placed in the High category ($0.8 < RII \leq 1.0$), which showed that teachers viewed the TPE programme positively but noted that several aspects of the TPE were lacking. In Figure 3 on the aspect of information technology facilitation in the training, one indicator has an RII value in the high-medium category ($0.6 < RII \leq 0.8$), which is the use of technology to facilitate the teaching of students with disabilities. From the data, it can be inferred that in-service teachers felt underprepared to use technology to teach students with disabilities. Therefore, there is an urgent need to add specific modules focused on inclusive education and technology use for diverse learners, including students with disabilities. In response to promoting inclusive education, the current TPE scheme caters to these needs by embedding differentiated-based learning in the TPE curriculum for the in-service teachers’ cohort (Kemendikbudristek, 2022), which further raises awareness of assistive technology used in the classroom and implementation of universal design learning in teaching and learning (Galkienė & Monkevičienė, 2021; Izzo, 2012).

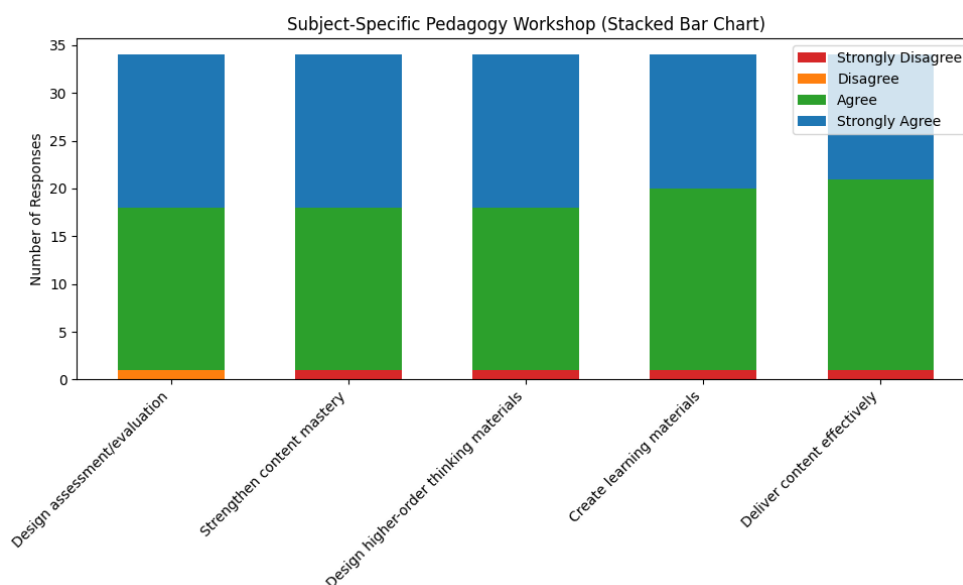


Figure 4. Subject-Specific Pedagogy Workshop

The findings on how teachers perceived the facilitation during the TPE programme also show the importance of content subject matter (Figure 4) and pedagogical knowledge (Figure 5), specifically in understanding student characteristics and learning styles. Some teachers in this study considered these points to be less facilitated during the TPE. In addition, many other issues also need to be improved, such as practical teaching opportunities which emphasise student-centred activity. According to research participants, theoretical knowledge is strong; however, the in-service teachers desired more hands-on practice, such as leading a discussion and teaching in small groups or, in general, effective classroom management through microteaching or peer-teaching activity during the TPE, as can be seen in Figure 6.



Consequently, it was suggested that more practical teaching experiences be incorporated into the TPE programme to allow teachers to apply theoretical knowledge in real-world settings. Finally, in line with the data on teacher beliefs and values in Figure 2 that they highly value collaboration and networking to improve their professional practice, Table 2 on practicum teaching and classroom action research, in-service teachers considered that the TPE programme had provided the opportunity to collaborate and share experiences to get constructive feedback through the school placement and CAR. These findings support the international body of literature that motivation and collaboration to promote professional learning (Brennan & Gorman, 2023; Durksen et al., 2017).

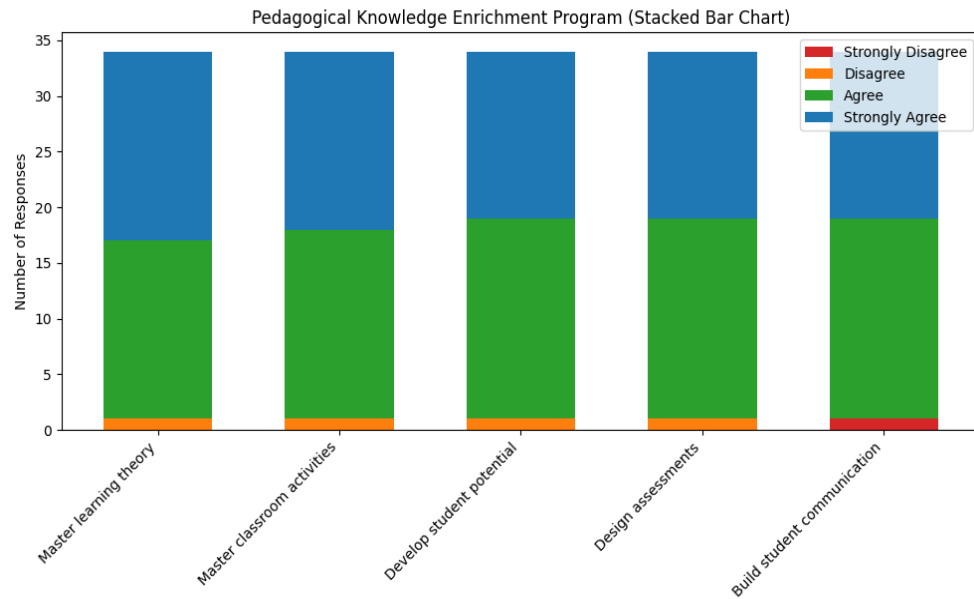


Figure 5. Pedagogical Knowledge Enrichment Program

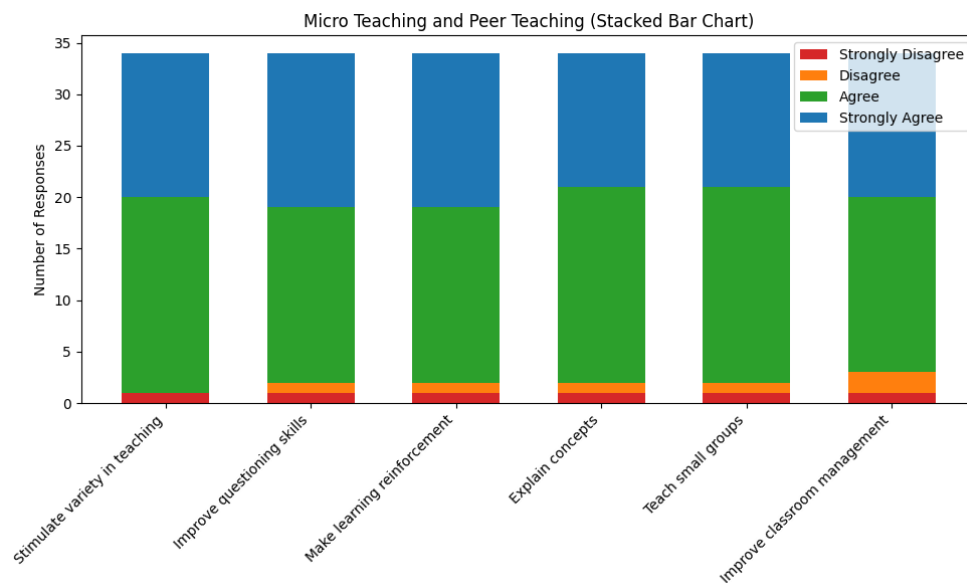


Figure 6. Micro Teaching and Peer Teaching



Table 2. Practicum Teaching and Action Research

List	Description	SD	D	A	SA	Total	RII
Practicum Teaching and Action Research							
1	Opportunity to collaborate with other teachers.	0	0	17	17	119	0.875
2	Opportunity to share experiences and get constructive feedback.	0	1	16	17	118	0.868
3	Opportunity to try new ideas.	0	2	14	18	118	0.868
4	Given the model of good teaching practice.	0	0	19	15	117	0.860
5	Given the opportunity to engage in real class management and dynamics.	0	0	20	14	116	0.853
6	Included in the school environment and activities.	0	1	18	15	116	0.853
7	A good relationship with school mentors	0	2	16	16	116	0.853
8	Understand the roles and responsibilities of teachers (i.e., administrative teachers and homeroom teachers).	0	1	19	14	115	0.846

The findings of this study have implications for policy and practice for teacher professional education in Indonesia. First, regarding the aspects of beliefs and values, it is positively shown that teachers are driven to partake in the upgrading activity for students-oriented purposes, which could lead to the design of the training programme that focuses on classroom practice to improve student’s learning experience. Secondly, the data leads to their views on the need for professional development, prioritising collaboration, and classroom management, in which future TPE programmes could emphasise these aspects. The third aspect measured their views of the TPE programme and how the training facilitated their needs to improve their competencies. The findings showed the complex nature of TPE and how the research participants viewed positively their participation in the programme. Overall, in-service teachers identifying stages of learning in TPE have facilitated their needs to improve their professional practice, although some aspects of the programme could be improved.

CONCLUSION

The limitation of this study is the number of responses, which implies that the findings cannot be used to generalise the cohorts’ perspectives. Nevertheless, the study’s findings support the idea that it provides insights into teachers’ beliefs and attitudes towards professional development, particularly TPE, which informs policy in teacher professional education design and practice. Recommendations for further research could utilise a bigger scale of data gathering, considering that TPE is a national-scale government programme and a different research method to gain a deeper understanding of in-service teachers’ perspectives. Finally, the data collection in this study is limited to in-service teachers, so future research can further involve the pre-service teachers’ cohort, which is part of the TPE programme.

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