

PRE-SERVICE TEACHER PROFESSIONAL EDUCATION PROGRAM IN INDONESIA: A SYSTEMATIC LITERATURE REVIEW

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Abstract. Indonesia published a New Model of Pre-Service Teacher Professional Education Program as a new strategy to increase the number of professional teacher candidates. This program has been published since 2022. However, research and evaluation related to this program in reputable journals indexed in Scopus and Web of Science are limited. This justification is demonstrated by this research, which employs a systematic literature review. Furthermore, the results showed that implementing the identification of papers, specifically referring to professional education after a bachelor's degree, in the New Model of Pre-Service Teacher Professional Education Program since 2022 has been difficult. The systematic literature review relies heavily on keywords, whereas many researchers use different terms to refer to pre-service teachers. Some researchers use pre-service teachers as students in educational programs at the bachelor's level, whereas this program is actually at the postgraduate level in Indonesia. After reviewing about 139 papers indexed in Scopus and 15 in Web of Science, the data indicate that only one article is related to the implementation of the New Model of Pre-Service Teacher Professional Education Program. Therefore, studies related to this topic still need further exploration.

Keywords: *professional, pre-service, teacher, literature review*

Introduction

The teacher crisis poses a significant global challenge that hinders the achievement of the Education targets outlined in the 2030 Agenda for Sustainable Development Goals. According to UNESCO, since 2022, there has been a reported global shortage of 44 million primary and secondary teachers (UNESCO, 2024). This issue also affects OECD countries, particularly at the lower secondary level (OECD, 2024). As the world's fourth most populous nation, Indonesia is not immune to this challenge. By 2024, Indonesia is projected to face a teacher shortage of approximately 1.3 million, primarily driven by retirements. This estimation considers the number of teacher shortages reported in 2021 and the anticipated retirements: 77,124 in 2022, 75,195 in 2023, and 69,762 in 2024. The projected number of retired teachers in 2022 is 77,124, 75,195 in 2023, and 69,762 in 2024. The issue of teacher shortages in Indonesia is evident from several perspectives. The extent of this problem resembles an iceberg phenomenon, with much of the issue hidden beneath the surface. In 2021, the Indonesian government faced a deficit of over one million teachers. Honorary teachers have filled some of these vacancies; for instance, in 2020, the Basic Education Data (Data Pokok Pendidikan) recorded 742,459 honorary teachers (Arika, 2021). In reality, many more honorary teachers remain unchronicled in the database. Furthermore, the teacher crisis can be examined more granularly: there is a significant shortage of professional teachers, those who possess teaching certificates. Since the establishment of the National Education System in 2003, it has been mandated that teachers must hold

at least a bachelor's degree and a teaching certificate (SPN, 2003). However, this requirement has not yet been fully met. For example, in 2021, there were 1,451,556 certified teachers, part of Indonesia's total teaching workforce, which exceeds 3 million (Suryani, 2023).

To address the teacher crisis, the Indonesian government initiated a one-million-teacher recruitment program that commenced in 2021 and was scheduled to conclude in 2024. This program allows the honorary teacher to be a civil servant under the agreement (Pegawai Pemerintah Dengan Perjanjian Kerja) by affirmation. Some quotas are also provided for fresh graduates. However, the pass rate of teacher recruitment carried out by the program did not meet the target set, around 58% in 2021 and 78.5% in 2022, which is also a factor contributing to the teacher shortage continuing. In general, there are two paths to obtaining a teacher professional certificate: pre-service and in-service schemes. The pre-service scheme is designed for fresh graduates or prospective teachers who have not yet been registered to work in a school. Meanwhile, the in-service scheme is intended for teachers already working at a school with teaching experience. In 2022, the Indonesian government introduced the New Model of Pre-Service Teacher Professional Education (PTPE) program to address the ongoing teacher crisis (Tanoto Foundation, 2023). This initiative is designed to replace retired teachers by supplying certified professional teachers by recruiting fresh graduates with bachelor's degrees who are not yet registered as teachers in the Basic Education Data system (Pramesti, 2023). Since its inception in 2017, the PTPE program has undergone various evaluations and modifications (Mariana et al., 2021). The government asserts that this new model represents significant improvements over previous iterations. Notably, graduates of the program will have priority in recruiting civil servants with agreement teachers, benefit from scholarships that cover their tuition fees, and participate in an induction system within schools (Pramesti, 2023).

Although this program is relatively new, having been in operation for over 2 years, evaluating research trends on this topic is crucial. Therefore, the research question is: What are the trends of the research related to the implementation of the New Model of the PTPE program from a systematic literature review lens? By examining these trends, this study can recommend further research that will be useful for the development of the New Model of the PTPE program and its various stakeholders.

Materials and Methods

This research applies a Systematic Literature Review. Researchers do not obtain data from interactions with other people; data is only obtained from research results or reports that have been published. There is a systematic search and strict selection of the data; in this case, the researcher adopts the steps from PRISMA (Page et al., 2021). Then, qualitative research was conducted with thematic analysis to find themes related to the benefits of the New Model of Pre-Service Teacher Professional Education, which has been published since 2022 (*Table 1*). A more detailed explanation of each stage of the Systematic Literature Review in this study follows: (1) Identification of literature using databases. This study harvests data from the Scopus and Web of Science databases from 2022 to April 2025. The researcher chose 2022 as the initial publication deadline because the New Model of PTPE program was only implemented that year. (2) Screening of titles and abstracts. Article selection is done with keywords through the Publish or Perish data harvesting application. Furthermore, use the following search

terms when searching the Scopus and Web of Science databases: "Pre-Service Teacher Professional Education" OR "Pre-Service Teacher Professional Education" OR "Pre-Service Teacher" OR "Preservice teacher" AND "Indonesia". Limiting articles by adding the keyword 'Indonesia' ensures that the research scope focuses on cases in the region. Researchers already have API keys to access both databases when using Publish or Perish. Then the harvested data is collected in Mendeley. Mendeley is also used to complete article metadata. (3) Further selection of articles is identified through inclusion and exclusion indicators as part of the purposive sampling criteria to achieve the research objectives with valid standards. (4) Extracting and mapping articles that have met the criteria. Researchers classify and code using Excel. (5) Conducting thematic analysis. The coding results are carefully classified into specific themes through repeated observations.

Table 1. Article sampling determination indicators.

Category	Inclusion	Exclusion
Criteria 1	The New Model of the PTPE program started in September 2022. Therefore, the relevant research paper related to this program must be submitted and published after September 2022. Field research type only because the research purpose is to uncover the trends related to the implementation of the PTPE program.	Paper submitted and published before September 2022. Literature review, reviews, or discourse analysis not allowed.
Criteria 2	The scope of the study focuses on pre-service teachers (professional program).	The scope of the study focuses on bachelor's or undergraduate, master's, or doctoral programs.
Criteria 3	Research related to the implementation of the new model of the PTPE program.	Research that discusses the old PTPE program (before 2022) or does not focus on implementing the New Model of the PTPE program. Research that uses the New Model of the PTPE program, stakeholders, or students as the objects of development, experimental, or sources of data that do not relate to the implementation of the New Model of the PTPE program.

Results and Discussion

The results of the study present the process of obtaining data through the PRISMA flow that has been implemented. The results of the selected articles are then presented to achieve the research objectives.

The flow and selected papers using PRISMA

Figure 1 was adopted from PRISMA, which represents the process of identification and screening, and included papers that were selected systematically. After searching articles by keyword, researchers found 139 articles from the Scopus database and 15 articles from the Web of Science. After an initial check, the researchers found that 14 articles in the Web of Science database matched those in Scopus. However, one article in the Scopus database was double-harvested, so it needed to be eliminated to prevent duplication. All of these articles are imported into the Mendeley application, and then metadata updates are carried out using the available menu. Moreover, the articles were removed under Criteria 1, resulting in the removal of three articles for being literature reviews and four for being handbooks, leaving 130 articles remaining. The researcher then screened the 130 articles using Criteria 2. The researcher ensures that the study's scope focuses on pre-service teachers (in the context of professional education) rather than on undergraduate or other levels of education. As a result, researchers found that

the term "pre-service teacher" is widely used to refer to students in undergraduate education programs. Researchers in Indonesia rarely use the terms "college student" or "student" to refer to undergraduate students in education study programs. Therefore, this research is challenging because the literature review method is highly dependent on the prompt and keywords used in the search process. For example, although some articles use the concept "pre-service teacher" in the title, the method sections also include concepts such as "bachelor" and "undergraduate," indicating that most of the sample is not in the context of professional education.

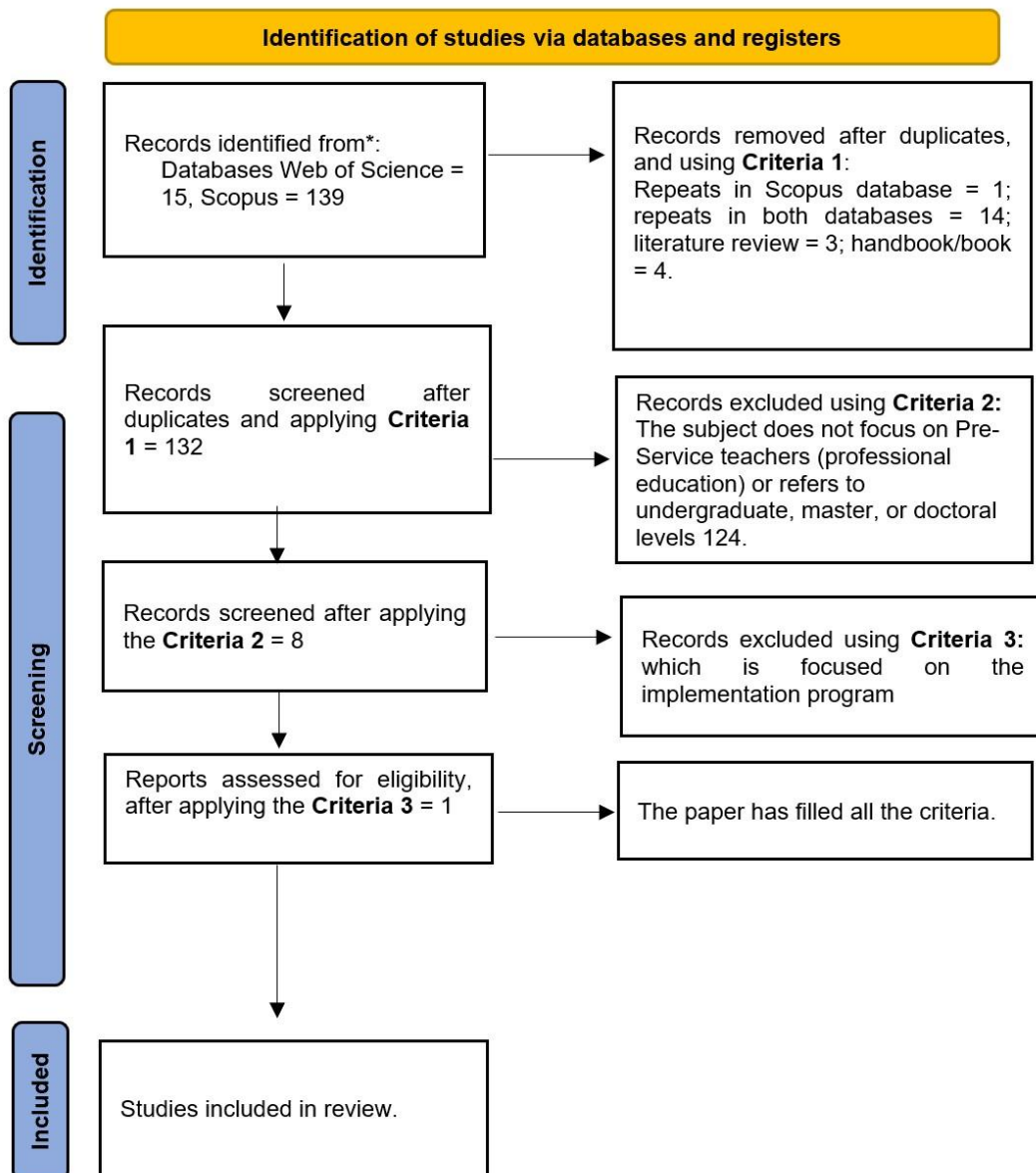


Figure 1. The flow of selecting papers using PRISMA.

Furthermore, the researcher also determines that the pre-service teachers referred to in the articles, in the context of professional education, are characterized by the sample. The sample that is still under 20 years old, the year of enrolment before 2022 (which indicate that New Model PTPE Program not started yet), the name of the study program,

the criteria for not having experience in teaching practice, and the scope of the courses (e.g. microteaching, Argumentative Speech and Public Speaking, Islamic Religious Education, Optics, Statistics, and introductory chemistry courses) show that the sample of pre-service teachers in the study refer to undergraduate programs. The New Model of the PTPE Program in Indonesia is a postgraduate program, with students usually over 20 years old. Therefore, the age and name of the study program listed in the population or sample can be used as a reference to determine whether the article meets the criteria. Additionally, the courses in the PTPE Program have been nationally determined, allowing researchers to be considered in evaluating the feasibility of the samples in the article. Some articles do not clearly explain the sample criteria, making it difficult to identify samples using them. Therefore, researchers need to carry out advanced identification. For example, some articles present sample criteria only in terms of a semester. The duration of lectures in the New Model of PTPE program is two semesters; if there are articles with more sample criteria than that, they should be eliminated. Article elimination can also be considered if the article focuses on programs intended only for undergraduate levels, such as the Merdeka Learning Kampus Merdeka (MBKM) program in Indonesia, which includes student exchanges, company internships, and campus teaching programs. Furthermore, the researcher also removed the article by updating the submission date. Some of the articles in the database list the year of publication as 2022 or 2023; however, some of these articles appear to be based on conference results held in 2021 or earlier, or prior to September 2022. Meanwhile, the New Model of the PTPE program just started in September 2022. After screening, the results indicated that 124 articles did not meet Criteria 2, leaving only seven articles for study. The remaining eight articles were reviewed again using the standard in Criteria 3 (Table 2).

Table 2. Papers assessed using Criteria 3.

Code	Writer	Note	Status
Article 1	Sheffield et al. (2024)	The participants in this research are students in the New Model of Pre-Service Teacher Education. However, the research focuses on primary students' engagement with STEM after gaining learning experiences from pre-service teachers who have attended a workshop led by experts.	Excluded
Article 2	Dewi and Listiaji (2024)	The participants in this research are students of the Teacher Professional Education Programme. Therefore, researchers use Criteria 3 to further examine this research, and the results showed that it does not focus on the New Model of the PTPE program; instead, it compares the TPACK competencies of pre-service teachers between Malaysians and Indonesians.	Excluded
Article 3	Wulandari et al. (2024)	The participants in this research are not only pre-service teachers, but also teachers and lecturers. The pre-service teachers in this research also cannot be identified using the strategy in Criteria 2. Therefore, researchers use Criterion 3 to further examine this research. Moreover, this research focuses on understanding ethnomathematics, not on the New Model of the PTPE program.	Excluded
Article 4	Payadnya et al. (2024)	-	Excluded
Article 5	Arochman et al. (2024)	The participants in this research are students of the Teacher Professional Education Programme. Nevertheless, this research focuses on students' views of Padlet as a learning medium for developing grammar and writing skills after instruction by pre-service teachers.	Excluded
Article 6	Al Yakin et al. (2025)	The participants in this research cannot be identified using the strategy in Criteria 2. Moreover, this research focuses on the use of Chatbots in teaching and learning to build social relationships.	Excluded
Article 7	Al Yakin et al. (2025)	The participants in this research are students of the Teacher Professional Education Programme. Moreover, the research focuses on measuring pre-service teachers' TPACK competency.	Excluded
Article 8	Kuntadi et al. (2025)	The research focuses on the curriculum of pre-service teacher professional education.	Included

The results of the final review of the selected articles, conducted using the PRISMA framework, indicate that only one article aligns with the predetermined criteria. Article 8 is included because the research explicitly discusses curriculum development related to the New Model of Pre-Service Teacher Education in Indonesia. However, the article focuses solely on TVET programs and does not present in-depth data on the model development conducted through the applied mixed-methods approach. Studies in other fields have not been discussed in the study. These findings demonstrate that further research on the New Model of PTPE Program is necessary to evaluate and develop an improved program for the future.

The implications of PRISMA related to research topic in pre-service teacher professional education in Indonesia

PRISMA, as a research method based on literature review, has provided a guide to systematic data investigation. However, researchers still need to establish clear frameworks and boundaries for specifying the data needed to achieve the research objectives. However, the initial database collection, which focuses on specific keywords, can be ambiguous. In this study, the term 'pre-service teacher' can refer to students at the undergraduate level or those pursuing professional education. Therefore, a content-based follow-up investigation is needed to assess the article against the predetermined criteria. Although researchers have been used as a criterion, the challenges of reviewing articles remain significant, particularly regarding article content quality. Although it targets data collection from reputable journals' indexing databases, not all articles are of high quality. This was found by many researchers during screening using Criteria 2: many articles do not provide detailed information on the criteria used for their participants or samples. As a result, the researcher cannot directly focus on the methods section; instead, they need to look for it in other sections. Furthermore, researchers could find few markers in other sections to identify samples, as some articles did not specify sample criteria at all. Therefore, Criterion 3 also plays an important role as the final filter in determining articles. The limitations of a study's focus are particularly important when the criteria for the subject in this study are difficult to determine. This can be seen in the records presented in *Table 1*. Although some articles are difficult to specify, the limitations of the study's scope can be very helpful.

Conclusion

Based on the PRISMA study, only one article is relevant for reviewing the implementation of the New Model of Pre-Service Teacher Professional Education Program. Therefore, further research on this topic is still needed. The researcher recommends further research on students' experiences, program evaluation, and post-graduation career paths to assess the program's success after its 2022 launch.

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Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

REFERENCES

- [1] Al Yakin, A., Elngar, A.A., Muthmainnah, M., Al-Matari, A.S., Viddy, A., Warsah, I. (2024): Fostering social relationships in higher education institutions through AI-powered solutions for sustainable development. – In International Conference on Sustainable Development through Machine Learning, AI and IoT, Cham: Springer Nature Switzerland 10p.
- [2] Arika, Y. (2021): Menghargai Guru Honorer. – Kompas Web Portal 13p.
- [3] Arochman, T., Margana, Ashadi, Sari, R., Manggolo, N.S.K.H., Hasani, U.A. (2024): The Views of Students and Pre-Service Teachers on Using Padlet for Mastery of Grammar and Writing Skills in Secondary Education. – Theory and Practice in Language Studies 14(10): 3076-3085.
- [4] Dewi, N.R., Listiaji, P. (2024): Comparative Analysis of Understanding TPACK and Education for Sustainable Development (ESD) on Indonesian And Malaysian Pre-Service Teacher. – Jurnal Pendidikan IPA Indonesia 13(4): 562-571.
- [5] Kuntadi, I.W.A., Wahyudin, D., Senen, S.H., Purnawarman, P. (2025): The Development of Curriculum Model of Pre-Service Teacher Professional Education Program. – Journal of Engineering Science and Technology 20(1): 153-160.
- [6] Mariana, N., Widowati, A., Hastuti, W.S., Abidin, Y., Faisal, F. (2021): Mencari model PPG untuk Indonesia. – Tanoto Foundation 230p.
- [7] Organisation for Economic Co-operation and Development (OECD) (2024): Education Policy Outlook 2024: Reshaping Teaching into a Thriving Profession from ABCs to AI. – OECD Publishing 147p.
- [8] Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E., Chou, R. (2021): The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. – BMJ 372(71): 9p.
- [9] Payadnya, I.P.A.A., Wulandari, I.G.A.P.A., Puspawati, K.R., Saelee, S. (2024): The significance of ethnomathematics learning: a cross-cultural perspectives between Indonesian and Thailand educators. – Journal for Multicultural Education 18(4): 508-522.
- [10] Pramesti, A.S. (2023): Buku pintar Pendidikan Profesi Guru Prajabatan. – Jakarta: Kemendikbudristek 40p.
- [11] Sheffield, R., Blackley, S., Koul, R., Rahmawati, Y., Fitriani, E. (2024): Australian and Indonesian primary students' engagement with STEM using a makerspace approach: A comparative study. In AIP Conference Proceedings, AIP Publishing LLC 2982(1): 6p.
- [12] Sistem Pendidikan Nasional (SPN) (2003): Undang-Undang Sistem Pendidikan Nasional No. 20 Tahun 2003. – Sekretariat Negara, Republik Indonesia 26p.
- [13] Suryani, N. (2023): Laporan Kinerja Direktorat Jenderal Guru dan Tenaga Kependidikan 2022. – Balai Guru Penggerak, Jambi 86p.
- [14] Tanoto Foundation (2023): Addressing Indonesia's Teacher Shortage: Strategies and Collaborations for Quality Education. – Tanoto Foundation Web Portal 4p.
- [15] United Nations Educational, Scientific and Cultural Organization (UNESCO) (2024): Global report on teachers: addressing teacher shortages and transforming the profession. – UNESCO 8p.
- [16] Wulandari, I.G.A.P.A., Payadnya, I.P.A.A., Puspawati, K.R. (2024): The Role of Ethnomathematics in South-East Asian Learning: A Perspective of Indonesian and Thailand Educators. – Mathematics Teaching Research Journal 16(3): 101-119.