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Exploring Self-Efficacy in Teacher Education: A Systematic Review Focused on Developing Countries

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Abstract

A substantial body of research has examined teachers' self-efficacy; however, much of this literature remains largely concentrated in developed-country contexts, leaving developing regions comparatively underexplored. This systematic literature review addresses that gap by focusing on self-efficacy in teacher education across developing countries, where persistent challenges such as limited resources, overcrowded classrooms, and inadequate training opportunities significantly shape educational experiences. Drawing on Bandura's self-efficacy theory, the study employs a systematic literature review to analyse 30 empirical studies of self-efficacy in teacher education across developing countries. Following PRISM

A guidelines, relevant studies were systematically extracted from major academic databases such as the Web of Science (WOS), Scopus, and ProQuest databases, with inclusion criteria that limited the sample to English-language, peer-reviewed journal articles published between 2016 and 2025. The review identified several major patterns in research themes, methodological approaches, and the geographic distribution of the studies. Overall, the findings indicate that Turkey dominates self-efficacy research among the 13 developing countries, highlighting regional imbalances in scholarly attention and research capacity. Across these studies, self-efficacy of pre-service teachers is shaped primarily by experiential and environmental factors including the quality of practicum experiences, mentorship support, and institutional environments rather than demographic characteristics. However, the dominance of cross-sectional quantitative studies restricts understanding of how self-efficacy develops over time and how broader contextual factors influence its evolution. These results strongly underscore the need for more diverse methodological approaches, particularly experimental, qualitative, and longitudinal designs, to provide deeper insights into how teacher self-efficacy develops and operates across varied educational systems and sociocultural settings.

Keywords: self-efficacy; pre-service teachers; teacher education; developing countries

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Introduction

Teacher self-efficacy is one of the most important psychological constructs to understand teacher motivation (Ma et al., 2021). “Teacher self-efficacy” has been extensively examined across disciplines and largely in Western contexts (Klassen, 2004), comparatively, pre-service teachers’ self-efficacy in non-Western and different cultural contexts has received less attention including developing countries. Cross-cultural research is essential in self-efficacy studies as it provides an insight into how cultural values, social experiences, and environmental conditions shape individual’s beliefs about their applicability of theories across diverse populations (Marsh et al., 2002).

Teacher self-efficacy is a key construct in educational psychology, grounded in Bandura’s social cognitive theory. It refers to teachers’ beliefs in their capability to organize and execute actions required to successfully carry out professional tasks (Bandura, 1977; Morris et al., 2017). A substantial body of research has established that higher teacher self-efficacy is associated with effective instructional practices, emotional regulation, professional commitment, and student-related outcomes (e.g., Goddard et al., 2004; Tschannen-Moran & Barr, 2004).

Self-efficacy is not a fixed attribute, but a dynamic belief system that is particularly malleable during the initial phase of teacher education, when individuals are developing professional identities and gaining practical classroom experiences (Klassen & Durksen, 2014; Chesnut & Burley, 2015). According to Bandura (1997), once self-efficacy beliefs are established, they become relatively resistant to change. Pre-service teacher education represents a critical stage in the development of teacher self-efficacy and has therefore received considerable attention in educational research (Gravis, Twigg & Pendergast, 2011; Gravis & Pendergast, 2022; Jeanneret, 1997; Kane, 2008). Investigating the self-efficacy beliefs of pre-service teachers is essential because these beliefs constitute the initial efficacy levels that future beginning teachers bring into the teaching profession, influencing their subsequent professional practice and development.

The foundation of this review study relies on the context of the developing countries. In these contexts, structural conditions such as limited resources, large class sizes, and constrained opportunities for professional support may shape pre-service teachers’ self-efficacy beliefs in ways that differ from high-income or developed settings. Furthermore, Wang et al. (2024) highlighted developing countries can play a significant and leading role in advancing teacher education research.

By 2016, some review studies related to teacher self-efficacy had been identified, for example, inclusive classroom teaching (Sharma & George, 2016); effect on classroom processes, student academic adjustment, and teacher well-being (Zee, 2016); professional development and efficacy change (Yoo, 2016). Again, Berg and Smith (2016), in their study of pre-service teachers’ self-efficacy beliefs, described self-efficacy as an opportunity to generate good research and suggested further research in the Asia-Pacific regions.

Understanding these contextual influences is therefore essential for developing teacher education programs that effectively foster preparedness and sustained professional commitment. Furthermore, dominant reliance on quantitative methods in prior research may overlook culturally and contextually specific factors that influence self-efficacy in these environments. Examining self-efficacy in developing countries is particularly important because cultural norms, institutional practices, and resource constraints may interact in unique ways to influence pre-service teachers' confidence and classroom readiness.

This review aims to address these gaps by examining pre-service teachers' self-efficacy research in the context of developing countries, focusing on study characteristics, methodological approaches, and key thematic trends to provide a comprehensive overview of how self-efficacy has been investigated in these contexts. By analysing these patterns, the review provides a foundation for understanding how self-efficacy has been investigated and for guiding future teacher education research in diverse contexts.

2. Research Question

To better understand the scope and direction of self-efficacy research in teacher education, this study is guided by the following questions.

- (1) What are the characteristics of the self-efficacy studies included in this review?
- (2) What are the key themes of pre-service teachers' self-efficacy research in developing countries?

3. Research design

This study adopted a systematic review method to identify, select and analyse relevant studies systematically. Systematic reviews follow a predetermined protocol and selection process to be transparent, thorough, and reproducible. (Lame, 2019), and are beneficial for identifying gaps and future research directions (Petticrew & Roberts, 2006). There have been a considerable number of review studies related to teachers' self-efficacy; however, there are few studies of teacher self-efficacy focusing on the contexts of developing countries. Researchers aimed to fill this gap with this systematic review.

This review was conducted using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, which provides a standardized method for reporting the review process. This is a guideline for locating, screening, and evaluating relevant studies. The aim was to ensure clarity in reporting, transparency in study selection, and consistency in synthesizing findings across studies related to teacher self-efficacy, particularly in developing country contexts.

Procedure

The whole process of systematic literature review began in June 2025. After determining the topic and formulating the research questions, keywords for the search have been identified. A search strategy with a combination of key terms, "self-efficacy" AND "teacher education," was adopted to locate relevant studies with related inclusion and exclusion

criteria applied in the initial phase. The keyword search was conducted in three electronic indexing databases: Web of Science WOS, Scopus, and ProQuest. The search was limited to studies published between 2016 and 2025, aligning with capturing recent and relevant developments in the field. This time frame also reflects what Berg and Smith (2016) encouraged further research on teacher self-efficacy in the Asia-Pacific regions, allowing the review to examine how the literature has evolved in response to this identified research need.

Additional filters were applied to identify self-efficacy articles written in English-language journals that used empirical research and published in the 'Education & Educational Research' area, which is classified under the Social Sciences category, available as open-access publications. Records identified through the keyword search were imported into the reference management software Zotero to support the screening process.

Screening

The first author conducted the screening process with the aim to identify studies that specifically examined self-efficacy in teacher education within developing countries. To improve the screening process, a set of inclusion and exclusion criteria was created from the original pool of several hundred articles. These criteria focused on whether the study looked at self-efficacy empirically, whether it was applicable to teacher education, and whether it focused on pre-service or in-service teachers. The screening process ensured that the final selection accurately reflected the state of research on self-efficacy in teacher education in developing countries.

Inclusion and Exclusion Criteria

Articles were chosen using inclusion criteria to ensure relevance and quality. Based on the aim, the term "self-efficacy" or "teacher self-efficacy" was included in the context of teacher education. Studies that (i) employed in teacher education (ii) conducted only empirical research (quantitative, qualitative or mixed methods) (iii) focused on pre-service teachers as participants and (iv) implemented only in developing countries.

According to Table 1, articles were excluded from consideration if they were outside the scope of teacher education, for example, studies from unrelated fields such as engineering, medicine, or natural sciences. In addition, publications with titles or abstracts that did not reflect a clear focus on self-efficacy or teacher education were also removed, and studies that were conducted in the contexts of developed countries, in other words, high-income countries, according to World Bank Data.

Table 1 Inclusion and Exclusion Criteria

No.	Inclusion Criteria	Exclusion Criteria
1	Studies employed empirical research.	
2	Studies are conducted in teacher education.	
3	Participants are pre-service teachers.	All studies not matching the inclusion criteria are excluded.
4	Studies are implemented only in developing countries.	

In this study, “developing countries” are defined as those with a Gross National Income (GNI) per capita below 13,935 U.S. dollars, according to the World Bank’s income classification criteria as seen in Figure 1.

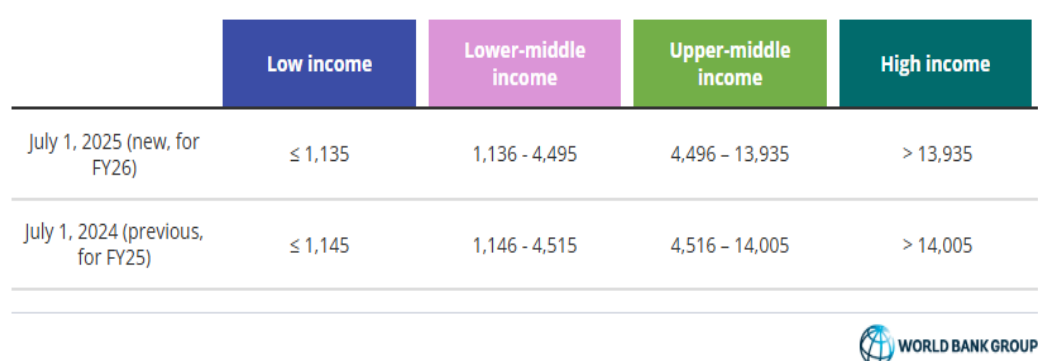


Figure 1 World bank’s group of income classification

The World Bank Group classifies the world economies into four income groups_ low, lower-middle, upper-middle, and high and updates classifications annually on July 1 based on the previous year’s GNI per capita, expressed in U.S. dollars using the Atlas method. This study uses World Bank data updated on July 1, 2025.

Selection Process

The study selection process followed the PRISMA framework. A total of 1,265 articles were initially identified through three database searches, Web of Science (n = 385), Scopus (n = 590), and ProQuest (n = 290). All identified records were imported to the Zotero software, where duplicates (n = 182) were identified and eliminated during the initial screening phase and 1,083 records remained for the screening stage.

The screening process was conducted in accordance with predefined inclusion and exclusion criteria. Only studies explicitly conducted within developing countries, as defined by the World Bank income classification at the time of publication, were included. This classification ensured that the review remained consistent with its aim to explore teacher self-efficacy research within the social, economic, and educational conditions typical of developing countries. Screening with the criteria “in the context of developing countries” removed 861 studies (n = 861) that were not conducted in developing

countries. The criteria "only pre-service teachers in teacher training or teacher education" dismissed 94 studies that employed participants from in-service teachers and students ($n = 94$), and 128 studies remained for further screening for eligibility ($n = 128$). Among them, 82 studies conducted in the "developing countries" context are eligible for this study. At the eligibility stage, a further 52 studies ($n = 52$) were excluded because of being not clearly focused on pre-service teachers' teaching-related self-efficacy. Finally, only 30 studies ($n = 30$) focusing on pre-service teachers' teaching self-efficacy met all the criteria and were included in this review.

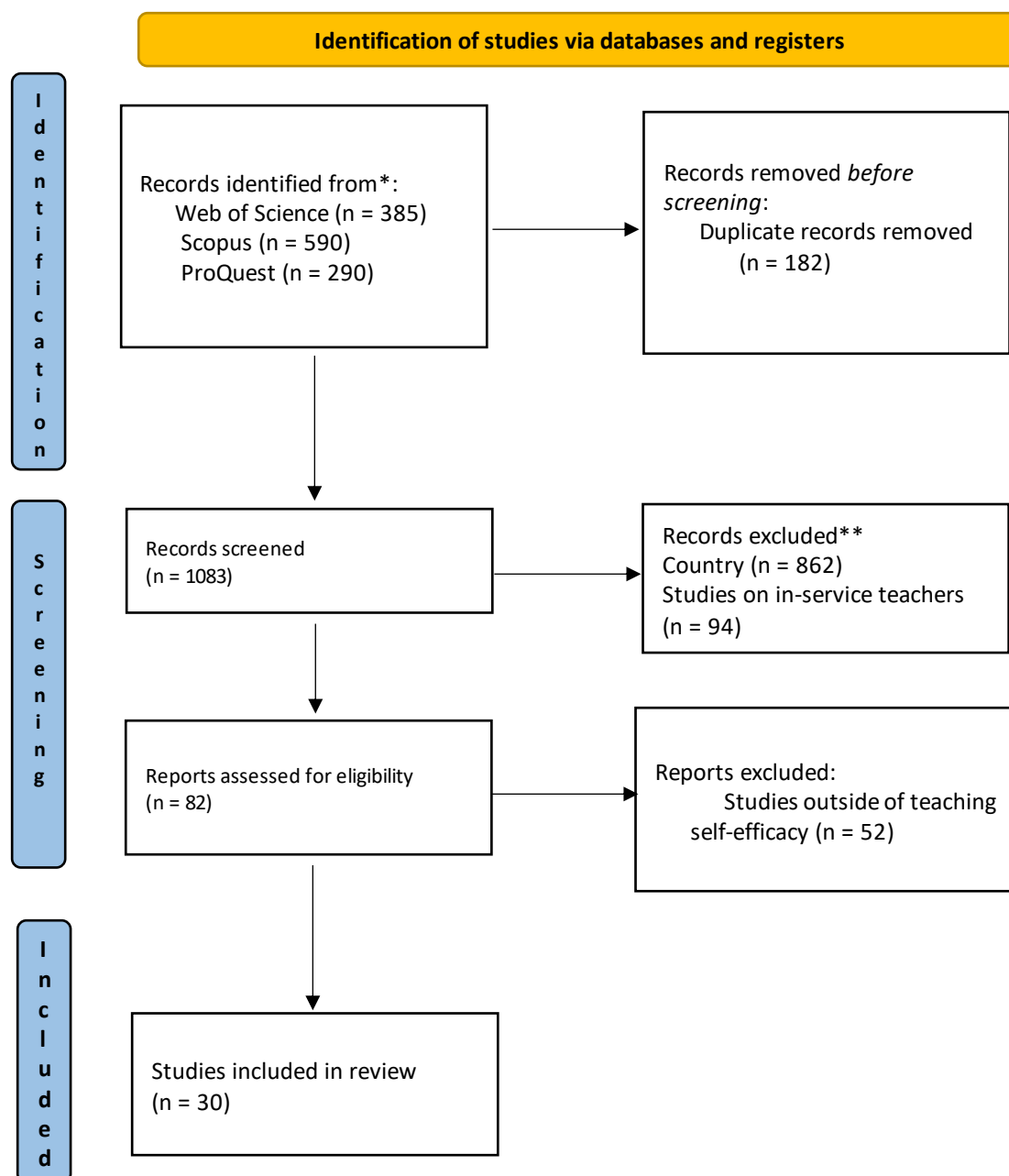


Figure 2 PRISMA flowchart diagram

In this step for synthesis, all 30 studies were read in full text, and the data extraction matrix was created in a Microsoft Excel spreadsheet, including the following elements:

author/year, country, participants, research design, type of self-efficacy scale, research focus, and research findings/conclusion. The data analysis was conducted across these categories to understand the patterns of how teacher self-efficacy has been explored and described in the context of developing countries.

4. Findings

The findings are organized according to two research questions, drawing on the demographic data from the empirical studies, including the information on research location and design, and incorporating the key determinations from Bandura's (1986b) social cognitive theory, which are categorized to provide a comprehensive analysis.

RQ 1: What are the characteristics of self-efficacy studies included in this review?

Our analysis of 30 studies covering the period 2016-2025 is organized by the location where the research is implemented, the research instrument, and the participants from the empirical studies included in this review.

Research Location

This study focused solely on self-efficacy research conducted in developing countries, lower and middle-income economies, according to world bank classification. When the search results were analysed by the 'Countries/Regions' category, this revealed that the studies (n=30) included were conducted across 13 countries.

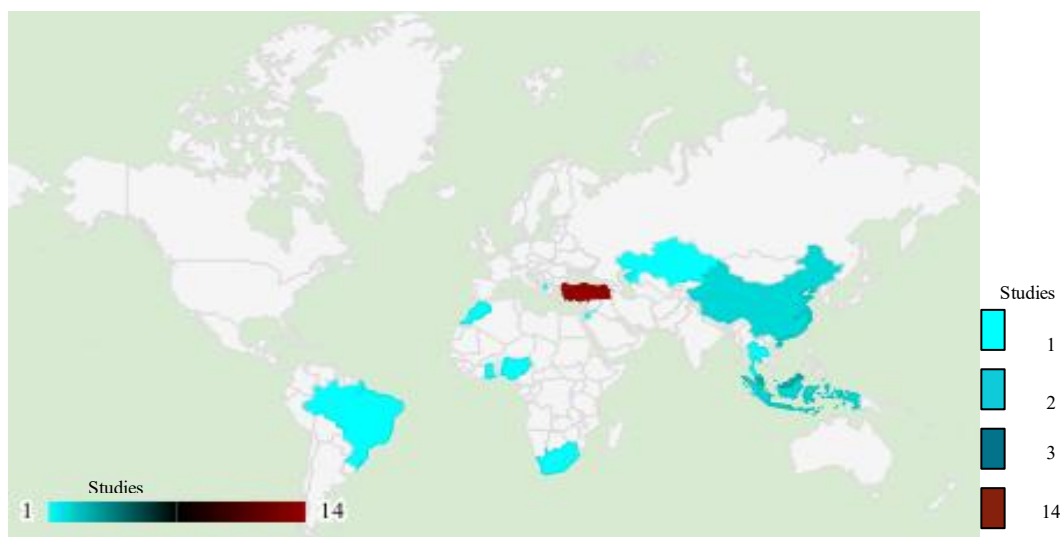


Figure 3. Studies by geographical location

Figure 3 shows the countries that have conducted the most research on pre-service teachers' self-efficacy. The findings presented that many studies have been implemented mostly in Turkey than other countries. Turkey accounted for nearly half of all studies (n = 14), followed by Malaysia with 3 studies (n = 3), Indonesia and China have 2 studies each (n=4), meanwhile a number of countries reported only one study each, representing

the least publication output, including Brazil, Ghana, Nigeria, South Africa, Jordan, Morocco, Albania, Kazakhstan, and Thailand (n = 9).

Table 2: Studies by region, country, and income.

Study	No	Region	Country	Country by income
Kuhn et al., 2020	1	South America	Brazil	Upper middle-income
Hendricks et al., 2024	1	Sub-Saharan Africa	South Africa	
Kwarteng & Servoh (2024)	1		Ghana	Lower middle-income
Ene et al. (2020)	1		Nigeria	
Altarawneh, et al. (2023)	1	Middle East & North Africa	Jordan	
El Ouahabi et al., 2025	1		Morocco	
Sogutlu, 2022	1	Europe & Central Asia	Albania	Upper middle-income
Baltaoglu & Güven (2019), Dikici & Yavuzer (2025), Elkatmis (2018), Cansiz & Cansiz (2019), Kaleli (2020), Atalay (2019), Saracoglu (2022), Tünkler et al. (2026), Altay (2023), Ozben & Kilicoglu (2021), Yildirim et al. (2025), Arslan (2019), Bars & Oral (2017), Muşlu Kaygisiz et al. (2020)	14		Turkey (14)	
Shuakbayeva et al., 2025	1		Kazakhstan	
Chan & Lay (2021), Ismail et al. (2024), Ngui & Lay (2020)	3	Asia-Pacific	Malaysia (3)	
Mustadi et al. (2023), Saputro et al. (2020)	2		Indonesia (2)	
Sonsupap et al., 2025	1		Thailand (1)	
Ma & Cavanagh, 2018, Zheng et al., 2024	2		China (2)	
Total	30 studies		13 countries	

The table 2 summarizes 30 studies conducted across 13 countries, revealing a clear imbalance in regional and economic representation. Most studies are concentrated in Europe and Central Asia, largely due to Turkey's dominant contribution of 14 studies, nearly half of the total while other regions such as Sub-Saharan Africa, the Middle East

and North Africa, and South America are represented by only one or a few studies per country. The Asia-Pacific region shows moderate participation, particularly from Malaysia, Indonesia, and China.

In terms of economic classification, the majority of studies originate from upper middle-income countries (n=16), with relatively few from lower middle-income countries (n=4) and none from low-income contexts. Turkey's disproportionately high contribution may be explained by factors such as a strong national research focus the teachers' self-efficacy, a well-developed higher education and academic publishing system, and greater access to research funding and institutional support compared to many other countries in the dataset. Overall, this uneven distribution suggests that research activity is influenced by regional and economic factors and highlights a lack of global representativeness, indicating the need for more geographically and economically diverse studies in future research.

Table 3: Distribution by study area

COUNTRY	AUTHORS/ YEAR	AREA
TURKEY	Tünkler et al. (2016)	Instructional Technologies and Material Development ITMD course
TURKEY	Bars & Oral (2017)	Teacher Education (TE)
CHINA	Ma & Cavanagh, 2018,	TE
TURKEY	Atalay (2019)	English as a Foreign Language
TURKEY	Arslan (2019)	TE
TURKEY	Cansiz & Cansiz (2019)	TE
TURKEY	Baltaoglu & Güven (2019)	TE
TURKEY	Cansiz & Cansiz (2019)	TE
TURKEY	Kaleli (2020)	Music teaching
TURKEY	Muşlu Kaygisiz et al. (2020)	Science Teaching,
MALAYSIA	Ngui & Lay (2020)	TE
INDONESIA	Saputro et al. (2020)	TE
BRAZIL	Kuhn et al., 2020	Physical Education
NIGERIA	Ene et al. (2020)	TE
TURKEY	Ozben & Kilicoglu (2021)	Mathematics Teaching
MALAYSIA	Chan & Lay (2021),	Science Teaching

TURKEY	Saracoglu (2022)	Mathematics Teaching
ALBANIA	Sogutlu, 2022	English as a Foreign Language program
TURKEY	Altay (2023)	English as a Foreign Language Education
JORDAN	Altarawneh, et al. (2023)	TE
INDONESIA	Mustadi et al. (2023),	TE
MALAYSIA	Ismail et al. (2024)	Islamic Education
CHINA	Zheng et al., 2024	Language Teaching
SOUTH AFRICA	Hendricks et al., 2024	Mathematics Teaching
GHANA	Kwarteng & Servoh (2024)	accounting teacher education
TURKEY	Yildirim et al. (2025)	English as a Foreign Language
TURKEY	Dikici & Yavuzer (2025)	TE
KAZAKHSTAN	Shuakbayeva et al., 2025	Inclusive Teaching
THAILAND	Sonsupap et al., 2025	TE
MOROCCO	El Ouahabi et al., 2025	Gender -sensitive teaching practice

All studies in this review focused mainly on teacher education. Among them, English as a foreign language (EFL) teacher education is the most frequently studied discipline, particularly in Turkey, Albania, and China. Mathematics and science teacher education are well-presented. Inclusive education, gender-sensitive pedagogy, Islamic education, physical education, and instructional technology are emerging trends in the studies,

Turkey dominates earlier studies between (2016-2019), and between 2020 and 2023. Self-efficacy studies diverse geographically to Brazil, Malaysia, Indonesia, Jordan and South Africa. Recent studies from 2024 and 2025 indicate a growing interest in specialized areas such as inclusive, gender-sensitive teaching, language teaching, from general teacher education.

Overall, the table indicates that self-efficacy studies has expanded over multiple countries and educational disciplines over the years. However, Turkey remains dominant in the contribution. Although general teacher education is mainly the research focus, recent studies showed the growing number of studies in subject-specific areas such as Language, mathematics, science, inclusive teaching. Nevertheless, research on pre-service teachers' self-efficacy in developing countries remains limited in both volume and disciplinary coverage. The existing studies are geographically dispersed and unevenly

distributed across educational fields, highlighting the need for more empirical evidence from a wider range of developing country contexts.

Participants

Participants in this study were pre-service teachers from diverse disciplines, specializations, and program levels; all are in preparation for various teaching contexts. Most studies focused on pre-service teachers recruited from single institutions, particularly those specialized in subject areas such as science education, language education, physical education, and diversity of education level-programs such as primary, secondary, and early childhood education. In some studies, pre-service teachers were in their final year of undergraduate degrees. Two studies examined the comparison of self-efficacy between pre-service teachers and in-service teachers. (Elkatmis, 2018; Sogutlu, 2022).

Regarding the instruments employed in the self-efficacy studies included in this review, findings revealed that the Teacher Sense of Self-efficacy Scale developed by Tschannen-Moran and Woolfolk-Hoy (2001), also called the Ohio State Teacher Efficacy Scale, is the most frequently used scale (15 out of 30 studies). The scale measured the self-efficacy of pre-service teachers across three dimensions: instructional strategies, classroom management, and student engagement. A single study in this review employed the Scale for Teacher Self-Efficacy (STSE), developed with three sub-scales in teaching: instructional strategies, classroom management, and student engagement. Of the studies reviewed, the remaining 14 studies applied a range of teacher self-efficacy scales through adaptation to the specific context of their studies.

Research Methodologies

This section provides an overview of the research methodologies of the empirical studies examined in this review.

Figure 4 showed that among 30 studies of this review, 22 studies predominantly used quantitative approaches ($n = 22$, 73.3 %), and seven studies adopted mixed methods ($n=7$, 23.3%), and seven studies applied mixed methods ($n=7$, 23.3%). A single study (Ma and Cavanagh, 2018), which employed both quantitative and qualitative methods through surveys with open-ended questions, was not labelled as mixed methods. Most of the reviewed studies were conducted by survey research design with cross-sectional surveys (e.g, Kwarteng & Servoh, 2024), and comparative relational research (Kaleli, 2020; Sogutlu, 2022). A descriptive census survey was implemented by (Zhang et al., 2022), and quasi-experimental research was employed in the study of (Saputro et al., 2020).

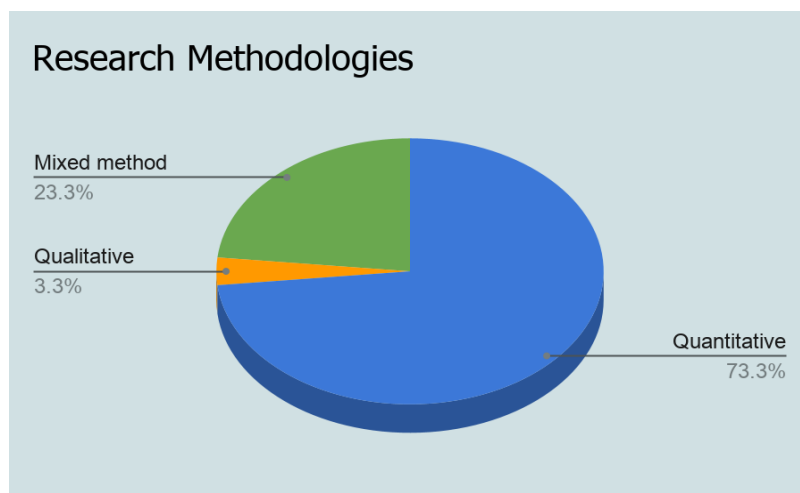


Figure 4. Research methodologies employed in the studies

In the period preceding 2020, eight studies focused exclusively on pre-service teachers' self-efficacy using quantitative methods (Arslan, 2019; Atalay, 2019; Baltaoglu & Güven, 2019; Bars & Oral, 2017; Cansiz & Cansiz, 2019; Elkatmis, 2018; Ma & Cavanagh, 2018; Tünkler et al., 2016). During this period, research primarily relied on survey-based numerical data without qualitative integration. From 2020 onwards, mixed-method designs gain prominence as seen in the studies of (Ozben & Kilicoglu, 2021; Altarawneh et al., 2023; Ismail et al., 2024; Shuakbayeva et al., 2025).

2. What are the key themes of pre-service teachers' self-efficacy research in developing countries?

In this session, the second research question is addressed through the analysis of the 30 self-efficacy studies included in this review under the key theme of the self-efficacy research. These themes are explained by the factors influencing self-efficacy.

In organizing the factors affecting self-efficacy of pre-service teachers, the authors applied Bandura's triadic reciprocal model. This model explains that human behaviour is influenced by three continuous and dynamically interactive components: (1) personal factors (Cognitive, affective, motivational, and demographic attributes), (2) behavioural factors (observable teaching-related actions and intentions), and (3) environmental factors (social and institutional context that impact behaviour) (Bandura, 1991).

As shown in Table 3, individual characteristics such as age, gender, teaching experience, and family background are frequently examined in studies of pre-service teacher self-efficacy. However, findings showed that the influence of these variables is inconsistent across contexts. For example, no significant differences of pre-service teachers' self-efficacy were found regarding high school type or parents' educational level.

On the other hand, psychological and experiential variables appear to have a more consistent and meaningful relationship with self-efficacy. Factors such as motivation, resilience, emotional intelligence, and attitudes toward teaching are frequently

associated with stronger efficacy beliefs. Similarly, skill-based competencies such as reflective thinking, problem-solving, and instructional strategies are often linked to higher perceived teaching competence.

Table 3: Personal, Environmental, and Behavioural Factors Influencing Teacher Self-Efficacy

Personal factors		Behavioural factors	Environmental factors
Cognitive/Affective/ Motivational variables	Individual characteristics	Behavioral intentions in teaching science, Problem-based learning (as a <i>teaching practice</i>), Mathematics instruction (actual teaching behaviour), Teaching strategy, Teaching methods/techniques, Determining taxonomy (if referring to the <i>teacher's assessment/classification behaviour</i>)	Program dimensions (features of the program), Social support, Class time (evening or daytime class) ***** Year of training, Program (e.g.; specialization) University Teaching profession
Motivation, Perceptions, Emotional intelligence, Resilience, Multicultural teaching competence, Teaching career preference, Learning styles, Learning strategies, Constructivist and Traditional Beliefs	Gender, Age, Teaching experience, Ethnicity, Marital Status, Educational level		

However, research on practicum experience presents mixed-results. While some studies report that hands-on practicum experiences significantly enhance pre-service teachers' self-efficacy (Altarawneh et al., 2023), others find no direct correlation between teaching experience and perceived efficacy (Sogutlu, 2022). Finally, validation studies conducted in different cultural contexts highlight the importance of examining self-efficacy within specific educational and cultural environments.

Most studies on pre-service teacher self-efficacy in developing countries were conducted in Turkey, with smaller contributions from Malaysia, Indonesia, China, and other nations. Research predominantly used quantitative methods, with mixed-method designs increasing since 2020, and the Teacher Sense of Self-Efficacy Scale was the most commonly employed instrument. Psychological and experiential factors (e.g., motivation, resilience, instructional skills) were more consistently associated with self-efficacy than demographic variables, while practicum experiences showed mixed results across contexts.

5. Discussion

Most studies were conducted in Turkey (n = 14), with fewer contributions from Malaysia, Indonesia, China, and other countries. This concentration likely reflects country-specific factors such as academic promotion policies, institutional incentives, and indexed

publication pressures (Önder & Kasapoğlu-Önder, 2011), suggesting that findings may predominantly reflect context-specific educational and institutional characteristics rather than generalizable trends. Furthermore, while the World Bank income classification provides a useful framework for identifying developing countries, it may obscure substantial political, cultural, institutional, and educational differences that shape self-efficacy. Countries grouped under the same income level can offer vastly different teacher training experiences, mentorship opportunities, and institutional support, highlighting the need for broader, cross-national investigations to capture diverse pre-service teacher experiences.

Quantitative approaches dominated the reviewed studies ($n = 22$), with cross-sectional surveys being most common. Mixed-method designs are increasingly adopted ($n = 7$) since 2020, yet longitudinal and qualitative research remains limited. This trend reflects a shift toward integrating numerical measures with qualitative depth for richer insight into self-efficacy, indicating the need to better contextualize findings in teacher education research. The methodological pattern limits understanding of how self-efficacy develops over time and of what factors make changes in self-efficacy. The dominance of standardized instruments, such as the Teacher Sense of Self-Efficacy Scale (Tschannen-Moran & Woolfolk-Hoy, 2001), facilitates measurement comparability but may bias attention toward measurable personal and instructional factors while underrepresenting broader environmental influences, including institutional culture, policy contexts, and cultural norms.

Findings indicate that demographic characteristics, such as age, gender, teaching experience, and family background, generally play a secondary role in shaping pre-service teachers' self-efficacy. In contrast, self-efficacy is more strongly influenced by dynamic and developable capacities including motivation, resilience, emotional intelligence, attitudes toward teaching, reflective thinking, problem-solving, and instructional skills. Practicum experiences emerged as a critical but contextually sensitive factor. Positive effects were often linked to high-quality supervision, constructive feedback, and opportunities for mastery experiences, whereas large class sizes, limited resources, and restricted mentor support in some developing-country contexts negatively affected self-efficacy development. These findings highlight that self-efficacy develops from the interaction of personal capabilities, behavioural engagement and environmental supports, aligning with Bandura's (1997) concept of reciprocal determinism. Notably, most of the studies overemphasize personal and behavioural factors, while environmental influences such as institutional support, mentorship quality and cultural contexts remain underexplored.

Institutional support including professional development, mentorship, and leadership guidance, was consistently associated with stronger self-efficacy. However, its availability and effectiveness vary widely across developing-country contexts, further illustrating the interplay between environmental conditions and individual beliefs. This highlights the concept that "pre-service teachers' self-efficacy is highly context-

dependent” and mastery experiences are the most effective when embedded within supportive institutional structures and systematic feedback mechanisms.

Based on these findings, several conceptual contributions emerge. First, self-efficacy development is less influenced by personal or individual factors and more developed by experiential and environmental factors, emphasizing the importance of program design and practicum quality. Second, methodological choices shape knowledge production, as cross-sectional surveys dominate the field, potentially underrepresenting longitudinal dynamics, and the influence of systematic factors. Third, contextual factors ranging from institutional resources to cultural norms mediate how interventions are enacted and shape the extent to which mastery experiences foster the development of teacher self-efficacy.

These findings suggest directions for future research. Longitudinal and qualitative studies are needed to unpack the causal mechanisms underlying self-efficacy development. Expanding research to underrepresented developing countries would enhance global representativeness, and continued validation of measurement instruments ensures cross-cultural reliability and applicability. Moreover, future studies should examine a broader range of teacher education experiences such as coursework, peer teaching, mentor feedback, and classroom practices and explore systemic factors such as policy, family support, and institutional culture. Integrating these dimensions will provide a more detailed understanding of how personal, behavioural, and environmental factors interact to shape pre-service teachers’ self-efficacy, offering stronger alignment with Bandura’s social cognitive theory and advancing the conceptual foundation of teacher self-efficacy research in developing-country contexts.

Despite these findings, it is important to acknowledge that our study has several limitations. As the scope of this review was limited to only open-access articles from the WoS, Scopus and ProQuest databases, relevant empirical studies not indexed in these databases may have been excluded. Including additional studies may influence the overall findings, as this review could not examine the methods and findings in each included study in detail. Therefore, we recommend more review studies of pre-service teachers’ self-efficacy indexed in other databases like ScienceDirect, and EBSCO (host) databases to provide a more comprehensive overview of pre-service teachers’ self-efficacy research in developing countries.

6. Conclusion

In conclusion, this review synthesized research on pre-service teachers’ self-efficacy in developing countries between 2016 and 2025. The findings reveal a strong influence of self-efficacy research from Turkey, predominance of quantitative cross-sectional designs, and limited attention to longitudinal development within comprehensive teacher education programs. Across the review, pre-service teachers’ self-efficacy in developing countries is less influenced by demographic factors, and more strongly by psychological, experiential and contextual factors. Effective practicum experiences and institutional

support are crucial, and interventions to enhance self-efficacy must be tailored to local conditions rather than relying on universal models. Overall, the evidence presented in this review highlights the need for more context-sensitive and methodologically diverse research to advance understanding in this field. In addition, compared with Western and high-income and developed countries, there is a notably smaller number of studies on teachers' self-efficacy conducted in low- and middle-income countries. Therefore, future studies in developing countries should be encouraged to generate a broader range of contextual evidence and enhance the global understanding of teacher self-efficacy. Providing support to researchers in these countries and promoting greater international cooperation are important for strengthening research capacity, facilitating knowledge exchange, and increasing their contributions to global research.

Generative (AI) Statement: The authors used ChatGPT (OpenAI free version) to assist with language editing and to improve the clarity and readability of the manuscript. The authors reviewed and edited all AI-generated suggestions and took full responsibility for the content of the manuscript.

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