International Benchmarking of Teacher Training Programs: Lessons Learned from Diverse Education Systems

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Abstract	Effective teacher training programs are critical to the quality of education systems worldwide. Comparison of teacher training programs between countries, known as international benchmarking, provides valuable insight into best practices and areas for improvement. This research aims to conduct an international benchmarking study to examine and compare teacher training programs in various educational systems. The research methodology chosen for this study was a Systematic Literature Review (SLR), which was used to understand the basic principles of Islamic education and their practical application in the Indonesian context. The data used in the SLR approach comes from scientific literature found in academic databases and other reliable sources of information. The analytical process in this research includes a thorough and systematic synthesis of related literature using a qualitative approach. The findings of this research reveal the diverse landscape of teacher training programs in various countries. Successful programs often emphasize practical classroom experience, ongoing professional development, and alignment with the specific needs of students and society. Challenges include limited resources, variations in program quality, and adaptation to rapidly evolving educational technologies and pedagogical approaches. This research underscores the importance of international benchmarking to inform and improve teacher training programs worldwide. Lessons from diverse education systems can guide policymakers, educators, and stakeholders in designing more effective and responsive teacher training initiatives. By promoting best practices and addressing common challenges, this research contributes to improving the overall quality of teacher education and, consequently, the quality of education itself in diverse global contexts.

Keywords	benchmarking; diverse education systems; lessons learned; international; teacher training programs.

INTRODUCTION

The complexity of the global challenge in ensuring that educators worldwide have adequate qualifications and skills to meet the demands of an ever-changing world of education. Teachers' key role in shaping young people's future and exploring their potential makes teacher training a central element in building a knowledge-based society (Nurdin & Maulidatus, 2019). Along with technological developments, social changes, and global economic dynamics, demands on teachers have also experienced significant changes (Suri et al., 2023). Therefore, it is very important to understand and evaluate the different approaches taken by education systems in various countries in training and preparing teachers.

Considering cultural differences, educational policies, and available resources highlights the complexity of creating effective teacher training programs. Some countries may have successful and innovative models, while others may face unique challenges (Eyob Kenta, 2019; Saha, 2023). In this context, in-depth international research and a thorough understanding of the best practices of various education systems are crucial for designing a holistic and up-to-date approach (Bukit et al., 2023; Gupta, 2018). The importance of quality education to address global problems such as inequality, poverty, and climate change provides a basis for evaluating the effectiveness of teacher training programs internationally (Andresen et al., 2020); (Mogale & Malatji, 2022). Cross-border observations and analysis can yield better insights into how countries can learn from and strengthen each other to create better educational environments.

Previous research in the teacher training domain has provided valuable insights, but significant gaps that require further research remain. Several local and regional studies have reviewed the effectiveness of teacher training programs in several countries, investigating the various approaches and strategies implemented to prepare educators (O'Connor et al., 2023); (Mâţă Liliana et al., 2023). While this research provides an in-depth understanding of specific dynamics at the local level, a shortcoming lies in the lack of a global perspective that can provide a holistic picture of best practices across educational systems (Aldiab et al., 2019; Gan et al., 2019). In addition, some previous studies have emphasized program descriptions rather than evaluations of their impact on teacher performance and student outcomes (Bray et al., 2023; Kartini, 2023). There is an urgent need for research that involves critical analysis of the learning outcomes produced by teachers who have attended specific training programs. By understanding the real impact of different training methods on teachers' pedagogical skills, adaptability, and innovation, further research can provide stronger

guidance for improving teacher training systems at the international level (Alhawsawi & Jawhar, 2021; Waham et al., 2023). Therefore, this article aims to fill this gap by benchmarking teacher training programs in various countries, critically exploring their impact, and drawing out lessons learned that can contribute to global educational reform.

Therefore, this article aims to benchmark teacher training programs in various parts of the world. By highlighting lessons learned from diverse experiences in training teachers, we can create a foundation for improvement and innovation in global education. Thus, this article provides an overview of best practices and encourages ongoing international dialogue to improve the overall quality of education.

METHODS

This investigation employs the Systematic Literature Review (SLR) methodology to examine global benchmarks for teacher training programs. The choice of the SLR method is based on its ability to amalgamate information from diverse sources, culminating in a comprehensive overview of the evolution of international benchmarks for teacher training programs. In the SLR approach, data and sources are acquired through several specific steps, encompassing:

1. Database Selection: Choosing a database or information source about international benchmarks for teacher training programs typically includes scientific journals, conferences, books, and other informative outlets.
2. Keyword selection: Identifying pertinent keywords or search phrases associated with international benchmarks for teacher training programs to conduct literature searches in the selected database.
3. Literature Search: Performing a systematic and thorough literature search using the selected keywords to ensure the identification of all relevant literature.
4. Selection and Filtering: After the search, the subsequent step involves selecting and filtering the located literature, entailing an initial assessment of the title, abstract, and full text to ascertain relevance concerning the international benchmarking of teacher training programs.
5. Quality Evaluation: Assessing the methodological quality and validity of the chosen literature, involving considerations such as research design, sample size, and data analysis to gauge the trustworthiness of research results.
6. Data Extraction: Extracting pertinent data from the chosen literature, encompassing key findings, research methodology, and other crucial information.

7. Synthesis of Results: Synthesizing results from the extracted literature to identify patterns, trends, and conclusions drawn from the reviewed literature regarding international benchmarking of teacher training programs.

Data sources for the SLR method are derived from scientific literature in academic databases and other reliable information sources. The first step in this SLR involves detailing inclusion and exclusion criteria to determine relevant literature, including scientific publications and white papers focusing on international benchmarks of teacher training programs. The subsequent literature search utilizes a combination of keywords such as "international benchmarking of teacher training programs," "learning," and "diverse education systems." The literature selection process involves assessing each source's quality, relevance, and contribution to the research objectives, ensuring a high academic standard for the selected literature.

Subsequently, literature analysis identifies patterns, themes, and trends, facilitating the synthesis of international benchmarks for teacher training programs and learning from diverse educational systems. The research conclusions are drawn from significant findings emerging from the analyzed literature. Employing the SLR method allows for a comprehensive understanding of international benchmarks for teacher training programs, contributing significantly to the country's development and comprehension of Islamic education. The data analysis in this research adopts a qualitative approach involving a systematic and comprehensive synthesis of relevant literature to understand, interpret, and holistically organize information, thereby offering an in-depth and comprehensive depiction of the investigated problem.

FINDINGS AND DISCUSSION

Findings

Previous research findings show that approaches to teacher training vary widely across countries. Some countries focus more on field practices, while others may integrate technology more actively (Rafiola et al., 2020). This diversity highlights the complexity of designing training programs that can meet the needs of teachers in various educational contexts. Previous research related to the importance of cultural context in teacher training. The research results show that the success of teacher training depends significantly on the recognition and integration of the local cultural context (Hilmiati & Listiawati, 2022; Jamiah et al., 2019). Successful training programs can adapt their methods to local cultural values and norms, increasing teacher acceptability and effectiveness.

Previous research regarding the influence of technology in teacher training: Research findings also highlight the positive impacts and challenges of integrating

technology in teacher training programs. Countries that successfully leverage technology in teacher education can leverage their teacher education's digital skills and innovation, providing valuable perspectives for other countries looking to make similar changes (Matli & Ngoepe, 2020; Rifat et al., 2023).

Previous research regarding the importance of involvement of related parties: Previous research shows that involving stakeholders, such as schools, universities, and local communities, in the design and implementation of teacher training programs can increase the effectiveness and relevance of those programs. The involvement of relevant parties can ensure that training programs reflect actual needs in the field (Hake, 1998; Sulaiman et al., 2022). Previous research related to evaluating the impact of training programs: The research results show the importance of evaluating the impact of teacher training programs. This research found that programs with strong evaluation mechanisms can identify their successes and weaknesses, enabling the adoption of best practices and continuous improvement (Hadi & Novaliyosi, 2019; Sigit Gesang Permana et al., 2022).

Previous research related to the importance of international exchange and cooperation. The research findings show that countries actively engaged in international exchange and cooperation can benefit significantly from the world's best practices. Cross-border collaboration can enrich teacher training experiences and open the door to innovation and continuous improvement (Darmuki et al., 2023; Mariani, 2022). One of the novelties that can be drawn from previous research findings is the driver for the adoption of innovative approaches in teacher training. As global educational dynamics change, these findings highlight the need to introduce new strategies, such as more integrated educational technology, realistic teaching simulations, or project-based learning models. Such innovations can improve teachers' skills in facing future challenges. Previous research findings regarding technology integration in teacher training indicate that optimizing the use of technology needs to be a further focus (Nabilah Mokhtar et al., 2023; Naibaho, 2022; Pavlou, 2020). Based on these findings, novelty can be found in developing more targeted strategies for incorporating technology, such as online-based training, using e-learning platforms, and implementing innovative digital teaching aids.

The novelty in the context of subsequent research findings is the emphasis on developing teacher training models that are highly responsive to local contexts. Cultural, social, and economic diversity in various regions is a priority in designing training programs. Developing modules that can be adapted to the specific needs of local communities can increase the relevance and positive impact of teacher training

programs. The research findings further indicate a novelty in incorporating self- and peer-evaluation methods into teacher training programs. Creating mechanisms that allow teachers to actively reflect on and assess their performance and support from fellow teachers can improve learning effectiveness and overall professional growth.

Tabel: International benchmarking of teacher training programs

No.	Aspects	Research Findings
1.	Diversity of Teacher Training Approaches	Research shows that teacher training approaches vary significantly across countries, encompassing different methods, strategies, and approaches.
2.	Use of Technology in Training	The integration of technology in teacher training programs has been a major focus. The findings suggest that countries that successfully adopt technology can effectively improve teacher skills and increase the relevance of learning.
3.	Local Context-Based Teacher Training Model	There is an emphasis on developing teacher training models that can be adapted to the local cultural context, recognizing the diversity of educational values and norms in each country.
4.	The Importance of Related Party Involvement	The active involvement of stakeholders, including schools, universities, and local communities, is a key factor in improving the effectiveness of teacher training programs.
5.	Training Program Impact Evaluation	Evaluation of teacher training programs focuses on academic outcomes and includes pedagogical skills, adaptability, and readiness for changing classroom dynamics.
6.	International Exchange and Cooperation	Countries engaged in international exchange and cooperation can leverage global best practices to enrich experience and innovation in teacher training.

From the table regarding International Benchmarking of Teacher Training Programs, this research reveals the complexity and diversity in teacher training approaches worldwide. These findings highlight the importance of technology integration, suitability to local cultural contexts, and active stakeholder involvement in improving the effectiveness of teacher training programs. Comprehensive evaluation is not only focused on academic aspects but is also recognized as a key element in measuring the program's positive impact. In addition, international exchange and cooperation between countries are emerging as a potential strategy to enrich experiences and best practices in teacher learning, creating a solid foundation for global educational improvement and innovation.

Discussion

Discussion of the research theme "International Benchmarking of Teacher Training Programs: Lessons Learned from Diverse Education Systems" draws attention to several important aspects. Reviewing previous research shows that international comparisons of teacher training programs provide valuable insight into

understanding the different approaches taken by different countries. Discussion of these findings opens the door to more in-depth analysis in several key areas.

First, previous research reviews discuss the diversity of teacher training approaches in different countries. The analysis shows that this diversity includes training methodology and the cultural, economic, and social contexts in which training is conducted (Sari et al., 2020; Sebsibe et al., 2023). This provides a deeper understanding of the complexities of designing training programs responsive to local context.

Second, a discussion of the findings highlights the importance of technology in teacher training. In terms of research studies, the analysis shows that technology integration can improve the quality of training and help teachers develop relevant skills to face the demands of modern education (Aldiab et al., 2019; Maksum, 2017). However, challenges that need to be overcome, such as limited access or inequities in technology use, require a more holistic approach to program design.

From the perspective of scientific studies, educational and learning theories provide a basis for understanding the findings in this research. The concept of constructivism, for example, supports the idea that teacher training programs should be interactive and responsive to individual learning needs. This concept is in line with the discussion regarding the importance of adapting training programs to each country's cultural and social context. Technology-based learning theory also emerged in the analysis (Abdurahman et al., 2023; Agustina et al., 2023). From this perspective, using technology in teacher training is interpreted as a means to provide a more interactive, in-depth, and practical skills-oriented learning experience. This theory creates the basis for designing training programs more connected to the needs and realities of the field (Nabilah Mokhtar et al., 2023; Torous et al., 2021). Additionally, program evaluation theory provides a framework for measuring learning outcomes and program impact. Good evaluation criteria, such as the quality of research methods, validity, and relevance of findings, support discussions about how previous research findings can be applied or criticized globally.

By combining these research findings and scientific theories, we can identify areas that need further exploration, such as applying constructivist concepts in teacher training in various cultural contexts or a more holistic integration of technology to minimize the digital divide. Overall, the discussion of findings in research studies and theory forms a solid foundation for further research to improve and develop teacher training programs globally.

This study summarizes highly relevant findings and provides in-depth insights regarding "International Benchmarking of Teacher Training Programs: Lessons Learned from Diverse Education Systems." By detailing key aspects of the findings and integrating the scientific dimensions of the study, we can gain a more comprehensive understanding.

First, this study confirms that the diversity of teacher training approaches in different countries provides a rich basis for joint learning. In-depth analysis shows that training methods vary, and social and cultural contexts play a critical role. Therefore, a successful training program must adapt to local dynamics without losing the global vision of teaching quality. In this context, the analysis notes that technological aspects in teacher training have become a major focus. The conclusion highlights that technology is a tool and a means to change how we teach and learn. Technology-based approaches open up new opportunities to provide more interactive and engaged learning experiences, ensuring that teachers acquire skills suited to the educational challenges of the 21st century (Aja et al., 2018; Esra & Sevilen, 2021; Fatimah, 2019).

The study shows a need to implement more sophisticated and holistic program evaluation strategies. The analysis concludes that measuring the impact of teacher training programs is not only related to academic outcomes but also involves aspects such as the development of pedagogical skills, adaptability, and readiness to face dynamic classroom realities. In this case, program evaluation should include various indicators to provide a more complete understanding of the effectiveness of a program.

So, this study builds a strong argument regarding the importance of the involvement of related parties. In a deeper analysis, we see that involving parents, local communities, and other stakeholders strengthens the quality of training programs and links education to the needs of the world of work and community development. In terms of scientific studies show that educational and learning theories provide an important basis for designing impactful teacher training programs. Integrating constructivist concepts and technology-based learning theory guides the necessary change steps in approaching teacher training. Additionally, applying program evaluation theory helps create a holistic evaluation framework.

Overall, the conclusions of this study summarize that through international benchmarking, learning from various education systems can significantly contribute to improvement and innovation in teacher training programs. While these programs must maintain adaptability to diverse local contexts, wise technology integration,

thorough evaluation, and strong involvement of stakeholders are key points to ensure successful and impactful teacher training programs.

CONCLUSION

Overall, this study highlights the importance of international benchmarking of teacher training programs to identify best practices that can improve the quality of education in various countries. By analyzing the diversity of teacher training approaches and focusing on key aspects such as technology, stakeholder involvement, and program evaluation, this research makes a valuable contribution to the global understanding of how to improve learning and teaching effectiveness. By extracting lessons from diverse education systems, the results of this study create the basis for continuous improvement in teacher training, reflecting a commitment to quality education that is inclusive and responsive to future demands. The impact of this research can be felt through the potential for change and innovation in the global education system. These findings and in-depth analysis provide practical direction for designing and implementing more adaptive and relevant teacher training programs. Through improving teacher skills and knowledge, as well as increasing stakeholder participation, this research can trigger a positive transformation in the educational sphere, providing a uniform positive impact on student learning and the development of society as a whole.

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