

Challenges of the Education System in Indonesia

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Abstract. This research explores the multifaceted challenges in Indonesia's education system, particularly within the national and Islamic education sectors. Using a qualitative library research approach, the study analyzes relevant academic sources, expert opinions, and policy documents to identify core issues and potential strategies. Data analysis is conducted through thematic content analysis, enabling the identification of recurring patterns, concepts, and policy implications across the selected literature. Findings reveal that in the VUCA era, Indonesia's education system faces challenges in economic transformation, socio-cultural shifts, labor market demands, and alignment with Indonesia's 2045 vision. Expert perspectives emphasize the need for cyber-based learning models and a balanced integration of technology and human values. Additionally, the Policy Forum on Education (PfoE) outlines eight major challenges, such as teacher competence, curriculum adaptability, digitalization, and inclusivity. In Islamic education, core issues include limited institutional capacity, weak graduate recognition, and inadequate quality assurance. The research highlights strategies to improve Islamic education through institutional strengthening, curriculum standardization, and quality service delivery. These findings underscore the urgent need for an integrated, adaptive, and inclusive educational framework to prepare Indonesia's future generations.

Keywords: Indonesian Education System, Islamic Education, Educational Challenges, Education Strategy

Introduction

The world is changing rapidly, and economic development demands that organizations grow and adapt to a dynamically evolving economy (Widayanto, 2021). Education, which serves as the primary foundation for building civilization and creating high-quality human resources (HR), must adapt to a world that is volatile, uncertain, complex, and ambiguous—commonly referred to as VUCA. A VUCA world means the world we live in today, where change happens at a very fast pace, unpredictably, influenced by many uncontrollable factors, and where truth and reality become highly subjective. Technological and informational advancements are among the biggest drivers of these changes (Utari, 2023; Apriani et al., 2019). The education sector is also affected by VUCA characteristics within the social, economic, and environmental contexts of nations and societies, at global, national, and local levels (Al-Fikri, 2021).

Amid this VUCA era, Indonesia's education system is vast and diverse. With more than 50 million students and 2.6 million teachers across over 250,000 schools, this system is the third-largest in Asia and even the fourth-largest in the world, following China, India, and the United States (worldbank.org, 2014). Despite significant progress, the Indonesian education sector still faces numerous issues that require serious attention. On the global stage, Indonesian education remains far behind developed countries such as China, the United States, and Singapore. To evaluate a country's educational condition, various parameters are used by international institutions. One of the most important benchmark assessments is the Programmed for International Student Assessment (PISA). PISA is an assessment conducted by the Organization for Economic Co-operation and Development (OECD), which evaluates students' skills in three core areas: mathematics, reading, and science.

According to the 2022 PISA results by the OECD, Indonesia ranked 69th out of 80 participating countries. In Southeast Asia, Indonesia placed 6th out of 7 countries.

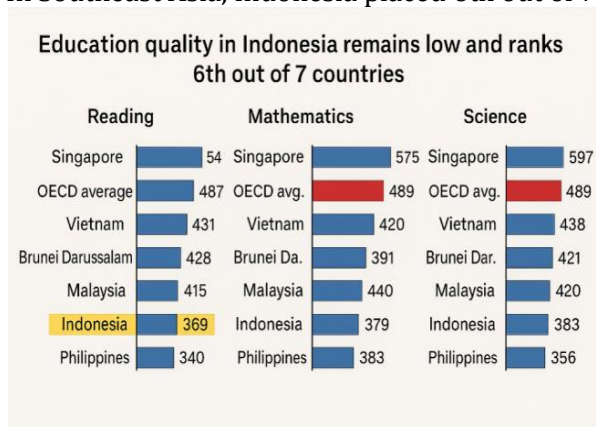


Figure 1.
Indonesia’s PISA Scores in 2022

From Figure 1, the 2022 PISA results show that Indonesian students scored an average of 359 in reading, 366 in mathematics, and 383 in science (Education GPS – Indonesia – Student Performance [PISA 2022], 2023). These PISA research findings demonstrate that the learning outcomes of Indonesia’s primary and secondary education are still inadequate compared to other countries. The PISA results can serve as a foundation for developing more effective educational policies and for identifying areas that require improvement.

In addition to the underwhelming learning outcomes in Indonesia's primary and secondary education, the competence of Indonesian teachers also remains below expected standards. The effectiveness of communication in the learning process in Indonesia still needs improvement, both in terms of student participation and teacher engagement in delivering material. According to a 2011 study comparing the number of words spoken by students and teachers in 50-minute classes across several countries, Indonesia recorded the lowest word count for both students (3,243 words) and teachers (509 words). Other countries such as the Netherlands, Switzerland, the Czech Republic, Australia, the United States, and Hong Kong showed significantly higher word counts. Hong Kong recorded the highest total at 6,920 words, with teachers contributing 1,018 words. This disparity indicates that verbal interaction in Indonesian classrooms remains low compared to other countries.

At the higher education level, the low participation rate in quality tertiary education remains a challenge, especially among low-income communities. The Gross Enrollment Ratio (GER) for higher education in Indonesia in 2023 was 31.45%, significantly behind developed countries such as Singapore, the United States, and China. Furthermore, based on data from the UNESCO Institute for Statistics (2012–2020), the proportion of Indonesian students continuing their studies abroad is still relatively low compared to many Southeast Asian countries.

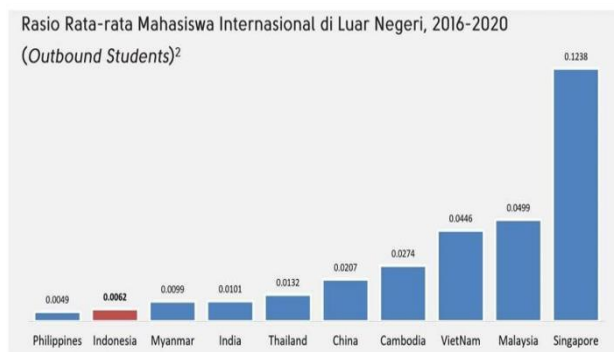


Figure 2.
Mean ratio of International Outbound Students 2016-2020

From Figure 2, it is shown that Indonesia still has a low ratio of outbound students compared to neighboring countries such as Malaysia and Vietnam. Several factors contribute to this, including the cost of education, accessibility to scholarships, government policies, and students' preferences to pursue studies domestically rather than abroad. Meanwhile, countries with higher outbound student ratios, such as Singapore, demonstrate a stronger tendency to send students overseas for better education or international experience.

To strengthen support for Indonesian education on the global stage, it is important to increase the private sector's contribution to education funding in Indonesia. This need arises due to the limited allocation of educational funding from the national budget (APBN). Increasing private sector investment can help improve the quality of education, infrastructure, and access to education for the public.

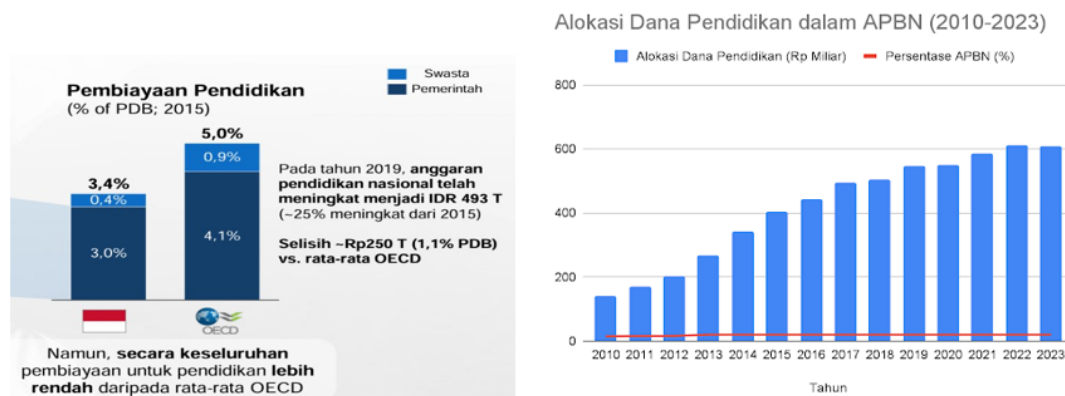


Figure 3.

Comparison of Education Funding with OECD Countries and Allocation of Education Budget in Indonesia's APBN

From Figure 3, we see that in terms of education funding (% of Gross Domestic Product [GDP], 2015), Indonesia allocated 3.4% of its GDP to education, with 0.4% coming from the private sector and 3.0% from the government. In comparison, OECD countries allocated an average of 5.0% of GDP to education, with 0.9% from the private sector and 4.1% from the government. This indicates that Indonesia's education funding remains significantly lower than the OECD standard, especially in terms of private sector contributions. Meanwhile, regarding the allocation of education funding in the APBN, the graph shows a trend of increasing education budget allocation from 2010 to 2023. Although it has increased, the allocation remains limited, making it essential to enhance private sector contributions to support the development of education in Indonesia. Incentive policies for the private sector to invest in education could be a solution to accelerate the improvement of education quality in the country.

Considering the educational gap between Indonesia and OECD countries, it is crucial that this paper discusses the challenges within Indonesia's education system in the VUCA era and how issues in Islamic education can contribute to realizing quality education for all Indonesian citizens. Therefore, the research questions are as follows:

1. What are the key challenges faced by Indonesia's education system in the context of global and domestic changes?
2. How do experts perceive the challenges in Indonesia's education system, and what solutions do they propose?
3. What are the main issues in Islamic education in Indonesia, and how do they impact its quality and accessibility?

Materials and Methods

This study employs a qualitative library research approach to explore the challenges, issues, and strategic directions in the Indonesian education system, with a particular focus on Islamic education. Qualitative library research is used to analyze and interpret data from various

credible and relevant sources, including academic journals, government policy documents, expert opinions, and institutional reports (Saldana, J., 2013). The data analyzed includes the national education law, expert perspectives from figures such as Dedi Mulyasana and Dinn Wahyudin, as well as policy recommendations from the Policy Forum on Education (PFoE). Additionally, documents such as the Indonesian Education Roadmap 2025–2045 and statistical data on educational participation and competency achievements in institutions under the Ministry of Religious Affairs are used to provide comprehensive insights. The research instrument in this study consists of document analysis guides based on thematic coding frameworks, which help systematically identify recurring issues, strategic priorities, and policy implications. Data analysis is carried out through thematic content analysis, enabling the researcher to extract key themes, patterns, and arguments relevant to the transformation and challenges of Islamic and national education systems. These eligible sources support an in-depth understanding of how current policies and institutional capacities shape the trajectory of education in Indonesia, particularly Islamic education, and highlight the necessary strategies to address ongoing challenges in achieving quality, relevance, and inclusiveness in education (Denzin, N.K., & Lincoln, Y.S., 2018).

Results and Discussion

Results

1. Challenges in the National Education System in the VUCA Era

The Indonesian national education system is navigating a complex transformation shaped by the VUCA environment. The shift from a resource-based to a service- and knowledge-based economy demands a comprehensive reform of education delivery. This includes the integration of digital literacy, adaptability, and critical thinking skills into the curriculum (Utari, Ita., 2023). Socio-demographic trends such as urbanization, the emergence of a middle class, and the demographic bonus call for more inclusive and flexible educational policies.

2. Expert Perspectives on Future Education Directions

Experts emphasize the need for a paradigm shift in education governance. Dedi Mulyasana highlights the lack of preparedness for a fully digital, Cyberface educational model, stressing the urgency of infrastructure and human resource adaptation. Dinn Wahyudin, on the other hand, calls for an approach that integrates human values with technological fluency, thus balancing character education with innovation.

The Policy Forum on Education (PFoE) identifies eight key challenges for future reforms, which are summarized in the following table:

Table 1.
Challenges identified by The Policy Forum on Education (PFoE)

No.	Challenge Identified by PFoE
1	Inclusivity in access and participation
2	Teacher competence and professional development
3	Curriculum relevance to current/future needs
4	Dynamic and flexible learning ecosystems
5	Effective digital transformation
6	Strong parental and community involvement
7	Strategic leadership and governance
8	Emphasis on soft skills and life competencies

3. Persistent Issues in Islamic Education

Islamic education continues to face structural challenges, particularly regarding institutional capacity, graduate recognition, and quality assurance. Many pesantren and faith-based institutions operate with minimal resources, and their graduates struggle with transitioning

into higher education or formal job markets due to curriculum mismatches and a lack of standardized credentials.

4. Strategic Solutions from the Education Roadmap 2025–2045

The Indonesian Education Roadmap offers comprehensive strategies to revitalize Islamic education:

Table 2.
Strategies of Islamic Education Revitalization

Strategic Area	Key Initiatives
Service Quality	Infrastructure development, teacher training, operational support
Graduate Recognition & Competence	Curriculum standardization, certification systems, higher education pathways
Quality Assurance	Institutional accreditation, integrated information systems, regular performance audits

These interventions aim to bridge the gap between Islamic and general education, ensuring relevance, competitiveness, and spiritual integrity.

Discussion

Challenges in Indonesia's Education System

The education system in Indonesia is governed by Law Number 20 of 2003 concerning the National Education System. Countries around the world are adapting their education systems to meet the needs of change to progress into the future, and Indonesia's education system must also adapt to such changes. The challenges in Indonesia's education system consist of:

1. **The Changing Indonesian Economy**
Currently, Indonesia's economy is still largely driven by resource-based and industrial sectors such as agriculture, fisheries, mining, and utilities. These sectors contribute significantly to the Gross Domestic Product (GDP) and absorb a large portion of the workforce, especially in rural areas. However, in the coming decades, Indonesia's economic structure is predicted to shift toward a service-based sector. To address these changes, the education system must be able to adjust its curriculum and learning methods so that graduates possess skills that are relevant to the needs of a service- and technology-based economy.
2. **Socio-cultural and Demographic Changes in Indonesia**
Socio-cultural and demographic changes are important factors in determining the direction of education policy. Several ongoing changes in Indonesia include:
 - a. The rise of the middle-income class led to increased demands for better quality education and access to higher education.
 - b. The migration of people from rural to urban areas has altered employment patterns and labor needs. Education must adjust to meet the demand for urban labor that is more oriented toward technology and services.
 - c. Indonesia is experiencing a demographic bonus, in which the number of people of productive age (15–64 years) is greater than the non-productive population. If not properly managed, this demographic bonus could become a demographic disaster, such as rising unemployment and social inequality. Therefore, the education system must play a role in preparing a competent and productive workforce.
3. **The Diverse Landscape of Indonesia's Labor Market**
With technological advancement and shifts in industrial patterns, the skills required in the labor market are also changing. The three main skill categories that must be mastered by the future workforce are:

- a. Basic Skills, which include reading, writing, and listening comprehension. These are fundamental for increasing literacy and competitiveness in the workforce.
- b. Interactive Skills, such as negotiation and persuasion, which are essential in the digital and globalization era, particularly in business, management, and marketing sectors.
- c. Information Technology (IT) Skills, including programming, data analysis, and system design, which are key to facing the industrial revolutions 4.0 and 5.0. Technology-based professions such as data scientists, software engineers, and cybersecurity experts are increasingly in demand across various sectors.

Hence, education must integrate these skills into the curriculum so that graduates can be competitive in the global labor market.

4. Indonesia 2045 Vision

In 2045, Indonesia will celebrate 100 years of independence. One of the goals established by the government under the Indonesia 2045 Vision is the Development of Human Resources (HR) and Mastery of Science and Technology, aimed at improving the quality of education and training to produce a competent and innovative workforce, and to ensure Indonesia is globally competitive in science, technology, and innovation. To achieve this vision, education must serve as the main pillar in producing excellent human resources ready to face future challenges (Kementerian PPN/Bappenas, Kemendikbud. Kemenag., 2024).

With the above challenges, Indonesia's education system must adapt to global changes to remain relevant. The Merdeka Belajar (Freedom to Learn) program and the National Education System Law serve as the main instruments for building students' competencies for the future. Meanwhile, the Indonesian Education Roadmap 2025–2045 serves as a strategic direction for addressing challenges and preparing superior human resources.

Challenges in Indonesia's Education System According to Experts' Perspectives

Experts view the challenges within Indonesia's education system from their distinct perspectives. Dedi Mulyasana, a Professor at Universitas Langlang Buana Bandung, identifies the challenge in Indonesia's education system as the fact that Human Resources (HR) and all components of the education system have not been prepared to enter the era of industrial revolution, which brings about disruption. This is due to the shift of education from the physical classroom to the virtual world, while the education system, learning theories, curriculum, education management policies, national education standards, and others have not yet been designed under the Cyberface Model. The Cyberface Model refers to the concept of a person's digital representation or cyber identity in the virtual world. This model is often associated with cybersecurity, artificial intelligence technology, and human-machine interaction across various aspects of life, including education, business, and social media.

Dinn Wahyudin, a Professor at Universitas Pendidikan Indonesia, states that a future challenge in the desired direction of the national education system is to integrate human touch and technological touch in a balanced manner. The aim is to create education that strengthens competence, character, and spiritual competencies. Technology should be utilized with a human focus and Big Data orientation, moving toward the realization of an Indonesian nation characterized by a super smart society, leading to a just and prosperous Indonesian society based on Pancasila (Humas UPI., 2021).

From another perspective, the Policy Forum On Education (PFoE)—a collaboration of 17 education-focused institutions including UNICEF, Tanoto Foundation, Puskapa UI, SEAMEO CECCEP, SMERU, Indonesia Mengajar, Inspirasi, Center for Digital Society UGM, INOVASI, Quizizz, PSPK, Rumah Kepemimpinan, CSIS, CIPS, Filantropi Indonesia, KIPIN, and Article 33 Indonesia—has outlined eight educational challenges in the effort to improve the quality of education in Indonesia ("Policy Forum on..", 2023). These challenges include:

- a. Educational inclusivity
- b. Teacher and lecturer competence

- c. Curriculum and teaching-learning methods A dynamic learning ecosystem educational digitalization Parental and community involvement Impactful and meaningful leadership soft skills development

The recommendations presented by the Policy Forum on Education (PFoE) highlight the importance of a holistic approach to improving the quality of education in Indonesia. Educational inclusivity ensures that every individual, including marginalized and special-needs groups, gains equal access to learning. Improving the competence of teachers and lecturers is key to creating an effective learning process, supported by an adaptive curriculum and innovative teaching methods.

Issues in Islamic Education

Islamic education faces various challenges in the modern era, influenced by social, economic, technological, and globalization dynamics. The main issues in Islamic education include the relevance of the curriculum to contemporary needs, the integration of religious knowledge and science, adaptive learning methods, and the role of Islamic education in shaping students' character and morality. In addition, challenges such as the digitalization of education, the quality gap among Islamic educational institutions in different regions, and government policies in accommodating education based on Islamic values are also of concern. Therefore, appropriate strategies are needed to ensure that Islamic education remains relevant, of high quality, and capable of addressing the challenges of the times without losing its essence and fundamental values.

The portrait of disparity between Islamic education and formal education can be seen through various data, such as the Gross Enrollment Rate (GER) and Net Enrollment Rate (NER) of educational units under the Ministry of Religious Affairs compared to national GER and NER.

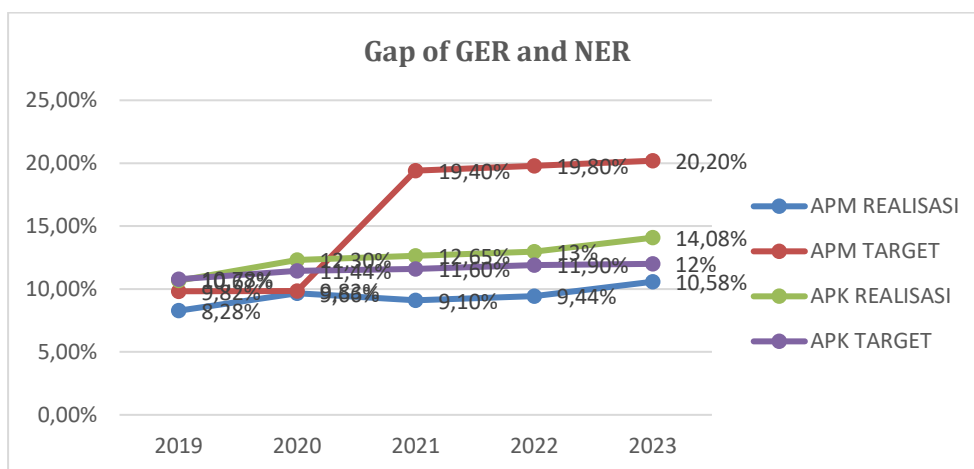


Figure 4.
Portrait of the Contribution Gap of GER and NER of Educational Units under the Ministry of Religious Affairs to National GER and NER

From the data above, it can be concluded that although the contribution of GER from educational units under the Ministry of Religious Affairs to national GER has increased, there are still challenges in achieving targets, especially in NER. Further efforts are needed to improve net enrollment to reach the predetermined targets.

Among the many issues in Islamic education, the *Indonesian Education Roadmap 2025–2045* outlines three main issues in Islamic education concerning pesantren and religious education institutions. These issues are:

1. Suboptimal Capacity of Pesantren and Religious Education Institutions
The capacity of pesantren and religious education institutions in Indonesia remains

suboptimal. Most of these institutions are established and managed by communities with limited resources. Many are still family-based and have not fully adopted professional and accountable management systems. This impacts the quality of education delivered, including curriculum, teaching staff, and facilities.

2. Weak Recognition of Pesantren and Religious Education Graduates
 Graduates of pesantren and religious education institutions face weak recognition, making it difficult for them to pursue higher education and access formal job markets. Despite the fact that pesantren and religious education institutions serve around 6.3 million students, their graduates still lack equal recognition with those of formal education. This is due to differences in curriculum, a lack of nationally recognized competency standards, and limited access to certifications recognized in the labor market.
3. The Need to Improve Quality Assurance in Pesantren and Religious Education Services
 Improving the quality assurance of pesantren and religious education services is essential to ensure that graduates possess competencies equivalent to those from formal education systems.



Figure 5.

Achievement of Minimum Competency of Students in Educational Units under the Ministry of Religious Affairs

Figure 5 shows an increase in reading literacy from 48.4% (2021) to 58.1% (2023). However, achievement in numeracy remains low, rising only from 29.8% (2021) to 50.9% (2023), indicating a continued need to improve learning quality in numeracy within educational units under the Ministry of Religious Affairs. Additionally, many pesantren remain unaccredited, with only **70 out of 1,998 Pesantren Salafiyah** institutions offering equivalent education (PKPPS) being accredited. This highlights that educational quality standards in many pesantren still require improvement. Meanwhile, the institutional quality assurance results for *Ma'had Aly* level show that out of **79 institutions**, **21** received the predicate *muhtaz* (equivalent to A), **41** received *jayyid* (equivalent to B), and **8** received *maqbul* (equivalent to C), indicating that many institutions still need to improve the quality of their education services (Brief, 2020).

To ensure the provision of quality pesantren and religious education services, strategies are needed to address the three main issues in Islamic education. These strategies are outlined below:

Table 3.

Issues-Strategies in Islamic Education for Ensuring Quality Pesantren and Religious Education Services

ISSUE	STRATEGY	FOCUS
The need to strengthen educational services in pesantren and religious education	Improving the quality of educational services in pesantren and religious education	<ol style="list-style-type: none"> 1. Provision of affirmative assistance for students in pesantren and religious education institutions located in underdeveloped, frontier, and outermost (3T) regions, from marginalized groups, or with special needs. 2. Provision of operational assistance to pesantren and religious education institutions. 3. Revitalization of facilities and infrastructure in pesantren and religious education institutions.

		<ol style="list-style-type: none"> 4. Enhancement of the capacity of educators and education personnel in pesantren and religious education institutions. 5. Improvement of the competence of educators and education personnel in non-formal pesantren institutions. 6. Development and implementation of recognition of prior learning schemes/services for educators in pesantren and religious education institutions.
The recognition of educators and graduates of pesantren education is still insufficient	Enhancing the quality and recognition of graduates from pesantren and religious education	<ol style="list-style-type: none"> 1. Development of student transfer schemes between types and/or pathways of education 2. Equivalence of qualifications for graduates of pesantren and religious education with those of equivalent general education 3. Development and implementation of competency standards and curricula for religious and pesantren education aligned with general education 4. Development of diploma recognition schemes for graduates of tiered non-formal pesantren and religious education 5. Advocacy to the Business and Industrial World (Dudika) for the recognition of equivalency of graduates from pesantren and religious education
The need to improve quality assurance services in pesantren and religious education	Strengthening quality assurance of educational services in pesantren and religious education	<ol style="list-style-type: none"> 1. Development of curricula and learning models that are essential, adaptive, contextual, inclusive, moderate, and nationally oriented 2. Strengthening of assessments in pesantren and religious education institutions 3. Development of an integrated information system for pesantren and religious education data

Table 3 shows that pesantren and religious education face three main issues. Most pesantren are still independently managed with limited resources, requiring service enhancement strategies through affirmative aid, operational support, and improvements in facilities and infrastructure. Furthermore, improving the competence of teachers and education personnel is a key focus to ensure better learning quality.

To address the weak recognition of pesantren graduates, which hampers access to higher education and formal employment, the strategic focus includes:

- a. Equating graduate qualifications with those from general education,
- b. Developing aligned competency standards and curricula, and
- c. Advocating with businesses and industries.

For improving the quality assurance of services, strategies involve strengthening curricula, assessment systems, and developing integrated pesantren education information systems to ensure that pesantren education becomes more qualified and widely recognized.

Conclusion

In the VUCA era, the challenges faced by Indonesia's education system include changes in the country's economic landscape, sociocultural and demographic shifts, transformations in the labor market, and the pursuit of the Indonesia 2045 vision. These challenges require an adaptive and forward-looking approach in shaping educational policies and practices. In Islamic education, several critical issues remain. These include the suboptimal capacity of pesantren and religious educational institutions, weak recognition of graduates from these institutions, and the urgent need to improve the quality assurance of educational services within pesantren and religious schools. These issues hinder the institutions' ability to deliver competitive and relevant education in today's dynamic world. To address these challenges, several strategic steps must be taken. These include enhancing the quality of educational services, improving the quality and recognition of graduates, and strengthening quality assurance systems in pesantren and religious

education. Through these strategies, Islamic education can continue to thrive and contribute meaningfully to national development while preserving its core values and identity.

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