

Exploring Challenges and Strategies for Improving the Quality of Education : Integrative Literature Review

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Abstrak

Permasalahan rendahnya kualitas pendidikan dalam skala global, khususnya di Indonesia, menghadirkan tantangan yang beragam mulai dari tingkat pendidikan dasar hingga perguruan tinggi. Studi ini berupaya untuk mengeksplorasi tantangan-tantangan ini secara komprehensif dan menawarkan strategi yang bertujuan untuk meningkatkan kualitas pendidikan. Dengan melakukan tinjauan literatur ekstensif yang terdiri dari 18 artikel yang bersumber dari database ternama termasuk Science Direct, Scopus, Web of Science, EBSCO, dan Google Scholar, serangkaian solusi inovatif telah digambarkan. Hal ini mencakup paradigma pelatihan modular, metodologi manajemen yang efektif di madrasah, penerapan pendekatan kepemimpinan transformasional, metodologi untuk mendorong keterlibatan siswa, integrasi teknologi, dan fasilitasi pendidik inovatif. Terlepas dari rumitnya tantangan yang dihadapi dalam sistem pendidikan di Indonesia, prospek inovasi dan peningkatan masih tetap ada. Keterlibatan aktif para pemangku kepentingan, terutama guru dan kepala sekolah, merupakan hal yang sangat penting dalam mendorong perubahan berkelanjutan. Selain itu, identifikasi kesenjangan penelitian, terutama dalam bidang pendidikan anak usia dini, menggarisbawahi pentingnya agenda penelitian yang lebih luas. Studi ini akan secara signifikan memperkaya pemahaman tentang tantangan pendidikan dan strategi perintis, sehingga meletakkan dasar yang kuat untuk kemajuan kualitas pendidikan di masa depan.

Kata kunci: Tantangan Pendidikan, Strategi Pendidikan, Strategi Inovatif, Tinjauan Pustaka, Kualitas Pendidikan

Abstract

The issue of low-quality education on a global scale, particularly pronounced in Indonesia, presents multifaceted challenges spanning from elementary to tertiary education levels. This study endeavors to explore these challenges comprehensively and proffer strategies aimed at ameliorating education quality. By conducting an extensive literature review comprising 18 articles sourced from esteemed databases including Science Direct, Scopus, Web of Science, EBSCO, and Google Scholar, a range of innovative solutions has been delineated. These encompass modular training paradigms, effective management methodologies within madrasahs, implementation of transformational leadership approaches, methodologies for fostering student engagement, integration of technology, and facilitation of innovative educators. Despite the intricate nature of the challenges encountered within the Indonesian education system, discernible prospects for innovation and enhancement persist. Active engagement of stakeholders, notably teachers and school principals, emerges as pivotal for instigating sustainable changes. Furthermore, the identification of research lacunae, notably in the domain of early childhood education, underscores the imperative for a more expansive research agenda. This study stands to significantly enrich the understanding of education challenges and pioneering strategies, thus laying a robust groundwork for future advancements in education quality.

Keywords: Educational Challenges, Educational Strategies, Innovative Strategies, Literature Review, Quality of Education

History:

Received : January 08, 2024

Accepted : April 06, 2024

Published : April 25, 2024

Publisher: Undiksha Press

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1. INTRODUCTION

In today's rapidly evolving world, the quality of education stands as a critical pillar shaping the future of societies globally. Despite considerable efforts, the educational landscape continues to grapple with multifaceted challenges that hinder its ability to meet the growing demands of the 21st century. From inadequate resources to outdated teaching methodologies, these challenges permeate every level of the education system, underscoring the urgent need for comprehensive solutions. Education quality is a crucial point in today's fiercely competitive era. Preparing students for the future is a fundamental aspect of discourse in every society regarding the role of education (Bateman, 2015; Pouru-Mikkola & Wilenius, 2021). One of the main components of the UN's 2030 sustainable development

agenda is quality education. Education is considered crucial for the success of society's transition towards a sustainable lifestyle. From the outset, sustainability discourse has included the concept of Education for Sustainable Development (ESD) (Barth et al., 2015; Haleem et al., 2022).

To enhance education quality, determining factors include the learning process, curriculum, human resources, student affairs, infrastructure, academic atmosphere, finance, research, publication, community service, and governance. With these indicators, institutions are expected to improve their targets to compete both nationally and internationally, thereby enhancing education quality (Koslowski, 2006; Singgih, 2008). Meanwhile, according to previous study education quality is something important to consider and fulfil (Halawa & Mulyanti, 2023). Influenced by factors such as curriculum, education policies, facilities, technology, and human resources, education quality becomes a standard in improving teaching quality. To achieve this standard, educational institutions need to develop teaching materials, learning strategies, learning media, as well as better evaluation and curriculum systems. Monitoring, evaluation, and modern development programs are also necessary to enhance education quality. Other study states that education quality is not the ultimate goal but rather a measure of the standard of the final product set (Sallis, 2016). However, the current education system has not fully met society's expectations. This condition is marked by the low quality of graduates and unresolved educational issues, posing a serious challenge affecting a country's social and economic development.

The quality of education in schools is also considered the most important and complex issue. To prepare the Indonesian generation for the Industry 4.0 era, schools must be ready to face challenges (Lee et al., 2021; Rosyida, 2019). The results of the 2018 PISA survey showed Indonesia's very concerning position, ranking 74th from the bottom. Reading, mathematics, and science skills of Indonesian students were at a low level, reflecting the low quality of learning in schools (Tohir, 2019; Yasinta & Hamsa, 2022). Other study revealed that the quality of teaching in Indonesia is still low, as observed from the perspective of adaptation teaching (differentiation), with a score of 1.74 out of 4 (Irnidayanti & Fadhilah, 2023). According to other study in Indonesia, teacher support for student academic participation plays a significant role (Maulana et al., 2018). Around 45% of the variation in student participation can be explained by various aspects of teaching quality. Although the level of student participation is moderate, research shows that about 85% of it can be associated with the class and teacher levels.

Several factors have contributed to the decline in education quality at all levels of the education system. These factors include the absence of clear vision and mission of institutions, excessive curriculum, low competitiveness of graduates, inadequate facilities and infrastructure, as well as the delay in the adoption of technology and the professionalism of educators and educational staff (André et al., 2020; Rahman & Akbar, 2021). According to previous study the main factor determining the low education quality in Indonesia is the quality of teachers, who play a key role in the learning process (Irnidayanti & Fadhilah, 2023). Recent research confirms that the quality of teachers in Indonesia is still below average compared to other countries. Meanwhile, students' perceptions of teaching behavior in Indonesia are rated lower than in other countries.

Our research contributes to the literature in two ways. First, we highlight the challenges that lead to low education quality, especially in Indonesia, and then develop the literature from the perspective of all levels of education. Second, we contribute to the theoretical literature on educational innovation by proposing a conceptual framework on how strategies can help improve education quality. From a managerial perspective, this research will assist educational organizations in addressing the challenges of low quality and leveraging the potential of innovative strategies. The researchers have not found any

literature discussing educational strategies through a novel literature review in this research. This study aims to provide a better understanding of the challenges hindering education quality while detailing pragmatic strategies to drive improvement. By combining empirical evidence with theoretical insights, we aim to offer a comprehensive understanding of the complexity of the issues involved. Through rigorous analysis and innovative thinking, we hope to make a meaningful contribution to the discourse on education quality, laying the groundwork for informed policies and practices that promote positive change.

2. METHODS

Contains The researchers used an integrative literature review method to conduct a research approach that involved reviewing, criticizing, and synthesizing relevant literature on a topic in an integrated manner and determining the direction of future research. The researchers systematically identified, collected, and evaluated relevant scientific publications from various sources from 2014-2023 to ensure good representation and relevance to the research of the last 10 years. A critique and analysis of the collected literature was conducted, followed by a synthesis to integrate the main findings and build a new framework or innovative perspective (Dhollande et al., 2021; Souza et al., 2010). The research stage is show in Figure 1.



Figure 1. Research Stages

We defined the search strategy through reliable and reputable online databases that are globally recognized. The search process was conducted using the keywords “educational challenges” AND strategy OR “innovative strategy” AND “quality of education” AND “low quality of education AND school AND University.” The search began in early October 2023. An important stage in the literature review was data evaluation (Green et al., 2006; Higgins et al., 2014).

To evaluate the data, we used inclusion and exclusion criteria, consideration of the quality and reliability of the sources, and evaluation of the strength of evidence, consistency of findings, and contribution to the knowledge derived from the literature reviewed. The screening, eligibility and inclusion process was used to strengthen the research results with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) guidelines. The PRISMA guidelines make it easy for readers to understand the process of selecting articles to be reviewed (H.-H. Wang et al., 2020).

The researcher conducted screening of 6429 articles, removed 1596 duplicates, and retained 4833 articles. In the screening phase, 903 articles were excluded for not meeting the inclusion criteria, which were publications between 1995 and 2013. A total of 3930 articles remained, which were then selected based on relevance. In the second screening phase, 2672 articles were excluded; 2032 were not empirical research, and 640 were not in English or

Indonesian. In eligibility phase I, the remaining 1258 articles were selected based on their relevance to the field, title, and abstract related to general education. A total of 456 articles were excluded for discussing other fields, such as agriculture, engineering, health, or elderly services. In eligibility phase II, 802 articles were reviewed again for title and abstract, and 698 articles had irrelevant samples. Finally, 104 articles underwent full-text screening, and 17 articles were selected as sources of research data. The screening process is depicted in Figure 2.

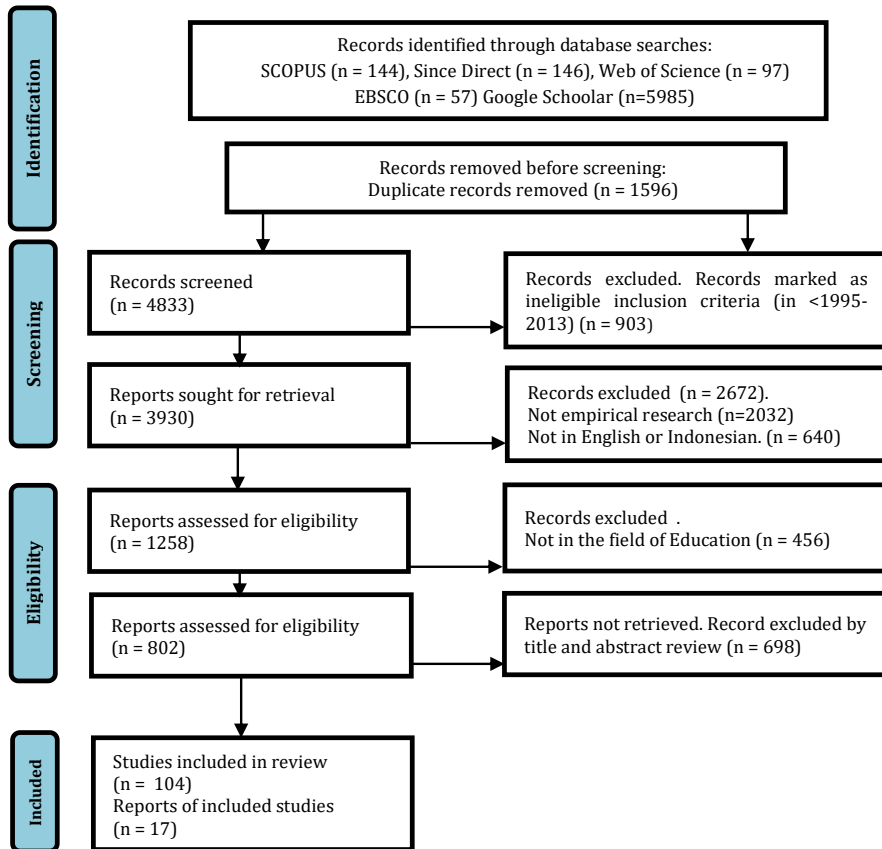


Figure 2. Identification of Studies Through Database using PRISMA 2020

3. RESULTS AND DISCUSSION

Result

Data from the integrative literature review, which was conducted with a selection process according to the guidelines, from 104 articles that were reviewed according to the selection results through data analysis. Through proper analysis, 17 articles were found, as shown in Table 1.

Table 1. Article Analysis

Author, Country	Sample	Method	Challenges	Strategies	Findings
(Alina et al., 2021), Romania	369 BUES students	Survey	COVID-19 impact on higher education	Digital tools, online platforms, multimedia resources	Contributes to a modern and effective education system.

Author, Country	Sample	Method	Challenges	Strategies	Findings
(Aguiar-Castillo et al., 2020), Spain	300 students	Experiment	Lack of student engagement in learning	Gamification (HEgameApp)	Implementation of innovative technology, deeper student engagement.
(Rincón-Flores et al., 2020) Mexico, USA	640 participants	Quantitative and qualitative	Lack of engagement in energy courses	Gamification in MOOC, Challenge-based strategies in online courses	Personalizing and enhancing learning opportunities from massive open online courses.
(Alegría et al., 2023), Spain	403 IE University Students	Quasi-Experimental	Academic performance gap during COVID-19	Introduction of hybrid learning system (liquid learning)	Digital skills, motivation, socio-economic conditions influence online vs. offline learning and exam scores.
(Laisa, 2019), Indonesia	Elementary school teacher students	Qualitative	Limited facilities and infrastructure in East Indonesia	IT utilization with collaboration for technology understanding	Improved ability to use computer applications; increased student interest in computer-based learning.
(Lidiastuti et al., 2019), Indonesia	102 elementary school students	Quantitative	Global pressure on school systems for active generation	Student creation of digital games for learning (MAGICAL with GBL)	Supports 21st-century skills; holistic student involvement.
(Lidiastuti et al., 2019), Indonesia	30 8th-grade Junior High School students	Research and Development	Low human resources quality in coastal areas	EXAIR learning model based on Brain-Based Learning	Significant improvement in problem-solving skills.

Author, Country	Sample	Method	Challenges	Strategies	Findings
(Hernawan & Bosra, 2020), Indonesia	30 elementary school teachers	Research and Development	Low education quality due to teachers' abilities	Development of a training model for pedagogical competencies	High feasibility, effective improvement in teachers' pedagogical competence.
(Andriyani & Suhartono, 2019), Indonesia	250 elementary school teachers	Qualitative	Low quality of education due to lack of attention from teachers	Reflection study for continuous improvement	Reflective learning makes teachers aware of strengths and weaknesses in teaching.
(Guo & Yang, 2019) Cina	20 teachers in rural locations	Design-based research method	Educational inequality due to low professional skills	Network-Based Training with Decreasing Interventions	Improved ICT teaching, increased confidence, and self-development motivation.
(Lin et al., 2022), Taiwan	44 lecturers, 1,417 students	Quantitative	COVID-19 impact on higher education	Teaching innovation with systematic evaluation	Innovative teaching methods by lecturers positively correlated with student evaluations of teaching.
(Kurniawan et al., 2023), Indonesia	School community of MI Al-Musthofa Majalaya	Case Study	Low quality of Madrasah not meeting standards	Strengthening education strategy planning	Efficient resource use, improved Madrasah quality.
(Thoah & Taufikurrahman, 1975), Indonesia	15 individuals from Madrasah officials	Qualitative (natural setting)	Threats to MD sustainability and low interest	Institutional revitalization in organizational, curriculum, HR, and finance changes	Maintained curriculum, increased community involvement.
(Fransisca Fortunata et al., 2021),	School Principal, Curriculum	Qualitative	Low-quality students not	Six Sigma in teaching factory	Improved student quality in

Author, Country	Sample	Method	Challenges	Strategies	Findings
Indonesia (Purba, 2018), Indonesia	Vice Principal, teachers 278 Teachers of SMA Private Zone I North Jakarta	Quantitative	meeting industry needs Low teacher work quality influenced by leadership issues	learning program Improvement of Transformational leadership and work environment	line with industry needs. Positive influence between leadership, work environment, and teacher work quality. Contributes to a modern and effective education system. Implementation of innovative technology, deeper student engagement.
(Kholis et al., 2014), Indonesia	369 BUES students	Qualitative (phenomenology)	COVID-19 impact on higher education	Digital tools, online platforms, multimedia resources	
(Sari et al., 2020), Indonesia	300 students	Qualitative (Field research)	Lack of student engagement in learning	Gamification (HEgameApp)	

Discussion

The literature review summarizes empirical evidence involving various countries, with Indonesia being the main focus (n=10), but accompanied by contributions from Spain, Romania, Mexico, Italy, and China, Taiwan. The emerging trends in education research cover various levels of education, primary education (n=9), secondary education (n=3), higher education (n=5). There is a striking gap regarding empirical research in the field of early childhood education. The majority of the studies come from Indonesia, and this highlights the current state of education in the region, both at the primary (SD/MI/MD: elementary school/elementary Islamic school/preparatory Islamic school), secondary (SMP/MTS, SMA/SMK: junior high school/junior Islamic school, senior high school/vocational high school) and higher education levels. The literature review highlights the challenges and innovation needs in education, spanning from primary to tertiary levels, as they face significant hurdles.

At the Primary Education Level (SD/MI/MD)

Previous study from Italy address global pressures to prepare an active and critical generation (Earp et al., 2016). However, the use of technology in education shows limited significant change, prompting the introduction of the MAGICAL concept, supporting 21st-century skills such as collaboration, creativity, problem-solving, and ICT literacy, involving students holistically: cognitively, affectively, and socially. In Indonesia, previous study express concerns about the quality of primary school teachers, proposing effective solutions through the development of modular training models and reflective studies to enhance pedagogical competence and teacher awareness (Hernawan & Bosra, 2020; Irnidayanti & Fadhilah, 2023). Similarly, previous study introduce a network-based training method to

enhance teachers' skills in rural areas (Guo & Yang, 2019), aligned with other study focus on overcoming educational limitations in East Indonesia through the utilization of Information Technology to improve teacher capabilities and student interest (Laisa, 2019).

Previous study specifically address the role of school principals in enhancing teacher professionalism, emphasizing the need for strategic leadership to improve education quality (Sari et al., 2020). Given the supporting and inhibiting factors in quality improvement, active participation by school principals and the entire school community can be strengthened by findings on transformational leadership and the positive influence of school principals' leadership styles on teacher performance (Meidelina et al., 2023; Nurbaya Ali & Zahri Harun, 2015). On the other hand, previous study highlight the importance of management strategies in improving the quality of education in madrasahs (Kurniawan et al., 2023), echoing other study on resistance to the destruction of Madrasah Diniyah (MD) and revitalization strategies through changes in organizational structure, curriculum, human resources, and financial resources (Thoah & Taufikurrahman, 1975). In the context of educational management, previous study demonstrate the importance of stakeholder participation culture, including participation in planning, implementation, and evaluation of school programs, to enhance school quality (Kholis et al., 2014). As previously explained, the quality of education is closely tied to the quality of teachers, with a primary focus on evaluating their qualifications, teaching experience, and participation in professional development (Goe et al., 2008). Enhancing education quality involves maximizing the role of educational elements, especially teachers as the main asset (Hernawan & Bosra, 2020; Riowati et al., 2022). Therefore, according to previous study, periodic evaluations of teachers' knowledge and pedagogy are required to establish a strong relationship with the concept of institutional evaluation and the personal transformation of students, educators, and education staff (Rahman & Akbar, 2021; Yuniati & Prayoga, 2019).

Addressing the challenges and opportunities in enhancing education quality requires a diverse approach involving various stakeholders, including teachers, school principals, and government officials. Strategies such as introducing innovative learning concepts, implementing effective training models, leveraging technology, and strategic leadership play crucial roles in improving education quality. Furthermore, ongoing evaluation of teachers' pedagogical knowledge and skills is essential for building a strong foundation for institutional improvement and fostering personal growth among students, educators, and educational staff. Overall, the development of teacher professionalism emerges as a critical factor in advancing education quality and preparing for the complexity of the future educational landscape.

At the Secondary Education Level (SMP/MTS, SMA/SMK)

Previous study investigated the educational challenges in coastal areas of Indonesia by developing the EXAIR learning model based on Brain-Based Learning (BBL) to enhance students' problem-solving skills, which significantly improved the overall quality (Lidiastuti et al., 2019). Therefore, teachers should be aware that learning itself and external motivation are key factors in fostering academic enthusiasm. Consequently, teachers can create a series of designs based on the following principles: the curriculum design should be rich and engaging, learning tasks should be challenging and innovative, the learning atmosphere should be conducive to independent learning, and learning outcomes should be appreciated. By combining these elements, teachers will be able to enhance students' academic enthusiasm and engagement (Stoeber et al., 2011; Zhao et al., 2021).

Furthermore, studies by Jiwen et al. (2015) highlight the role of academic engagement in Chinese education, which has significant implications for academic achievement and student behavior. Empirical evidence shows that academically engaged students tend to

achieve higher academic performance and have lower dropout rates or incidents of misbehavior (Carter et al., 2012; M. T. Wang & Fredricks, 2014).

Research on the importance of leadership and Six Sigma integration in improving educational quality has been highlighted in recent studies. For example, previous study emphasize this role in enhancing educational quality with a focus on improving student quality (Fransisca Fortunata et al., 2021). Similar findings are also evident in study which emphasizes the importance of transformative leadership and conducive work environments in enhancing the quality of teacher work (Purba, 2018). Consistent with study which shows the positive impact of academic supervision by school principals as leaders and teachers' commitment to enhancing their professional competence (Syafitri et al., 2023). However, educational transformation is not an easy task. This process requires in-depth understanding and active participation from all stakeholders. Consistent with the research state the competence of teachers in the six domains of teaching behavior can serve as an indicator of improved teaching quality in the classroom (Irnidayanti & Fadhilah, 2023). By enhancing teacher competence, it can also enhance student engagement oriented towards learning outcomes.

On the other hand, collaborative and participatory approaches are identified as keys to success in designing long-term changes. In this context, teachers can design various learning approaches based on proven successful principles. For example, curriculum design that is engaging, learning tasks that are challenging, and a learning atmosphere that encourages independence (Palmer et al., 2023; Zhao et al., 2021). The research presented in this paragraph highlights various approaches and strategies aimed at enhancing educational quality, particularly in the context of Indonesian coastal areas. It emphasizes the significance of factors such as the EXAIR learning model, academic engagement, leadership, and Six Sigma integration in improving teaching quality and student outcomes. Additionally, it underscores the importance of collaborative and participatory approaches in facilitating long-term educational changes. Overall, these findings suggest a comprehensive framework for educators and policymakers to address educational challenges and promote student success in diverse learning environments.

At the Tertiary Education Level

Research conducted in Romania highlights the importance of effectively utilizing digital tools and online platforms triggered by the COVID-19 crisis to support the educational process (Alina et al., 2021). As a result of these changes, online learning relies on novel methods such as content delivery via the Internet and emphasis on digital communication and digital learning resources. In Spain, previous study addressed the challenge of low student engagement successfully through a gamification approach using HgameApp (Aguilar-Castillo et al., 2020). Conversely, in Mexico, other study integrated gamification into Massive Open Online Courses (MOOCs) to enhance participant engagement and introduce innovative strategies in energy education (Rincón-Flores et al., 2020).

Student engagement, as a complex concept, has been a focal point in educational research due to its correlation with learning outcomes (Bond et al., 2020; Hu & Li, 2017). Previous study in Spain compared the academic performance of online and offline students and recommended the development of a new hybrid learning system (Alegría et al., 2023). Meanwhile, from Taiwan innovatively utilized a student evaluation framework to enhance student performance and motivation (Lin et al., 2022). Therefore, the significance of technology in evaluation and assessment becomes evident.

Amidst the challenges of online teaching, educators must be able to think creatively to find solutions. By implementing innovative strategies as highlighted learning can become more engaging, enjoyable, and ultimately more effective (C. S. Barber, 2018; C. Barber &

Smutzer, 2017). Universities need to support innovative educators, and governments should formulate education policies that promote the integration of technology into the learning process (Habibi et al., 2020; Salas-Pilco et al., 2022). Overall, the research discussed highlights the importance of leveraging digital tools and innovative approaches, such as gamification and hybrid learning systems, to address the challenges faced in education, particularly in the context of online teaching triggered by the COVID-19 crisis. These studies emphasize the significance of student engagement, the integration of technology in evaluation and assessment, and the need for educators to adopt creative solutions. Furthermore, there is a call for universities to support innovative educators and for governments to develop policies that encourage the effective integration of technology into the educational process.

4. CONCLUSION

This literature review provides a comprehensive overview of the challenges and innovative strategies in education, with a primary focus on the situation in Indonesia and contributions from several other countries. At the elementary education level, research highlights the importance of teacher quality and school leadership in improving education quality. Efforts to address these challenges include the development of teacher training models, effective management approaches in madrasahs, and the implementation of transformational and participatory leadership strategies. Meanwhile, at the secondary education level, research emphasizes the importance of student engagement and engaging learning designs. Additionally, the integration of 21st-century skills and the role of technology in student evaluation and assessment are becoming increasingly important. At the tertiary education level, adaptation to online learning in response to the COVID-19 pandemic is a primary focus, with research highlighting the utilization of digital tools and innovative approaches to enhance student engagement.

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