

INSTITUTIONAL QUALITY AS A FOUNDATION FOR EDUCATIONAL QUALITY IN THE ERA OF TECHNOLOGICAL DISRUPTION: A SYSTEMATIC LITERATURE REVIEW

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Abstract: *The discourse on quality in higher education has evolved significantly, shifting from input-output models toward more contextual, relational, and governance-oriented frameworks. However, the specific role of institutional quality as a foundational prerequisite for educational quality in the era of technological disruption remains underexplored. This Systematic Literature Review addresses this gap by examining how dimensions of institutional quality shape educational quality and identifying the challenges that emerge amid accelerating digital transformation. Following the PRISMA protocol, articles were systematically identified, screened, and synthesized across reputable international and national databases, with strict inclusion criteria covering publication period, document type, topic relevance, language accessibility, and methodological soundness. Thirteen peer-reviewed articles were included in the qualitative synthesis, organized into three sub-themes: dimensions of institutional quality, the relationship between institutional quality and educational quality, and challenges in the era of technological disruption. The findings consistently demonstrate that institutional quality functions as a structural prerequisite rather than a mere co-determinant of educational quality, with five key dimensions emerging as critical: institutional governance and collaborative networks, service quality and institutional image, quality assurance systems, macro-governance capacity, and data-driven strategic decision-making. Teaching quality emerges as the primary mediator translating institutional capacity into student learning outcomes, reinforcing the necessity of integrated investment in both institutional and pedagogical capacity. These findings become particularly salient in the era of technological disruption, as institutional quality increasingly determines an institution's capacity to integrate emerging technologies meaningfully into learning processes. This review contributes to theory by clarifying the foundational role of institutional quality, and to practice by recommending dual-track strategies for policymakers and institutional leaders that simultaneously strengthen institutional capacity while modernizing quality assurance systems.*

Keywords: *Institutional Quality, Educational Quality, Technological Disruption, Higher Education, Systematic Literature Review.*

Introduction

The global higher education landscape has been drastically changed by the Industrial Revolution 4.0 and the acceleration of digital technological disruption, forcing educational institutions to adjust to the features of automation, digitalization, and the incorporation of artificial intelligence in learning processes (Guerrero-Quíñonez et al., 2023; Pasi & Dhamak, 2026). This shift does not merely touch upon the technological dimension but has restructured the relationship between institutional structure, curriculum, governance, and the quality of education output itself, thereby giving rise to a new paradigm known as Quality 4.0 (Biloshchytskyi et al., 2024; Septio & Madhakomala, 2026). Without a strong institutional foundation in terms of transformational leadership, digital infrastructure, human resource capacity, and adaptive governance, the adoption of advanced educational technology often results in partial and unsustainable implementation (Deacon et al., 2022; Mirata & Bergamin, 2023).

This challenge is increasingly urgent amidst the reality of the global learning crisis, which demonstrates that increased educational access has not been proportionally accompanied by an increase in learning quality, reinforcing the argument that institutional quality is a strategic prerequisite for educational quality (Angrist et al., 2021; Zook & Ryall, 2021). In Indonesia, the gap between the availability of digital infrastructure, equal access, and human resource readiness has become a structural problem that widens the disparity between educational input and outcomes, particularly when educational institutions are demanded to address the dynamics of the Industrial Revolution 4.0 (Yaqin et al., 2026).

Even though the body of research on digital transformation in higher education is still expanding rapidly (Bisri et al., 2023; Fernández et al., 2023), the majority of systematic reviews continue to focus only on certain aspects of technology adoption, such as e-learning, digital leadership, or quality assurance frameworks, without incorporating the perspective of institutional quality as a systemic foundation for improving educational quality in its entirety (Jameson et al., 2022; Septio & Madhakomala, 2026). Additionally, there are currently few empirical studies that explicitly map the relationship between educational quality indicators and institutional quality indicators in the context of technological disruption, especially when employing a thorough Systematic Literature Review approach that adheres to the PRISMA protocol (Bond et al., 2024; Crompton & Burke, 2023). The necessity for a thorough and current mapping of evidence to explain how institutional quality functions as a foundation for educational quality in the context of technological disruption is confirmed by this condition, which highlights a major research gap.

Based on this background, this study aims to systematically review literature regarding institutional quality and educational quality in the era of technological disruption, identify key dimensions of institutional quality that contribute to educational quality, and formulate future research directions for governance and quality improvement in education (Musah et al., 2024; Vélez et al., 2025). This systematization specifically maps the dimensions of transformational leadership, technological infrastructure, human resource capacity, and adaptive governance as institutional pillars that theoretically and empirically have significant contributions to educational quality, while simultaneously presenting policy recommendations and further

research agendas beneficial for strengthening the educational ecosystem in the era of digital transformation (Lualhati, 2026; Nurjanah, 2025).

Literature Review

Institutional Quality

Institutional quality in higher education is understood as an organization's systemic capability to manage resources, policies, and internal processes to achieve operational excellence and strategic relevance. Theoretically, institutional quality is no longer viewed merely as the fulfillment of minimum administrative standards, but rather as a dynamic integration of management capabilities, organizational agility, and the ability to adapt to rapid external changes (Lesnawati, 2025). This reflects a transition from traditional management models towards performance-based governance that positions efficiency and transparency as top priorities within the global higher education ecosystem (Abdelaziz, 2022).

Indicators of effective institutional quality include dimensions of transformational leadership, human resource capacity, as well as strengthening infrastructure and adaptive governance. Transformational leadership acts as a crucial catalyst for change, capable of fostering a vision of innovation amidst the complexity of digital transformation (Kausar et al., 2025). Concurrently, the institution's capacity for continuous improvement and accountable data management becomes a key pillar ensuring that every internal process aligns with established quality goals (Kumar et al., 2025; Lesnawati, 2025).

Furthermore, institutional quality in the era of technological disruption demands a "Quality 4.0" paradigm, where the integration of digitalization into institutional governance becomes a differentiator in creating competitive advantage (Abnoulgid et al., 2025). Institutions with strong quality not only provide adequate physical infrastructure but also build digital ecosystems that support collaborative learning and responsive academic management (Alé-Ruiz et al., 2023). Thus, institutional quality functions as a systemic framework that ensures the sustainability and relevance of higher education amidst the changing demands of society and the dynamics of the job market (Viviana et al., 2025).

Education Educational Quality

Educational quality is a complex manifestation of the effectiveness of the learning process, curriculum relevance, and graduate outcomes graduates who not only master academic substance but are also capable of adapting to a competitive global ecosystem (A'yun et al., 2025). A paradigm shift in educational quality is occurring in the age of technological disruption, where excellence is now determined by the institution's capacity to incorporate technology to improve the learning process and the applicability of graduate competencies rather than just administrative standards. The current global learning crisis reinforces that increased educational access does not automatically guarantee improved learning quality (Zook & Ryall, 2021). However, the massive integration of technology also faces substantial counter-arguments. Critics argue that the narrative of technological optimism often ignores the risk of degrading humanistic aspects of learning, where social interaction and critical guidance crucial for developing reflective thinking are threatened by procedural efficiency and automation. Furthermore, over-reliance on digital devices has the potential to widen educational inequality for those with limited access, confirming that technology without mature pedagogical transformation can actually become a barrier to educational quality. Therefore, educational quality in the digital era requires a more dynamic approach that balances the strengthening of

digital infrastructure with pedagogical transformation to produce graduates who are resilient, innovative, and ready to face the uncertainties of the future job market (Chrystie & Putri, 2025; Nazyrova et al., 2025)

Technological Disruption in Education

Technological disruption in the education sector is understood as a phenomenon of fundamental shifts that force institutions to undertake strategic, innovative, and rapid adaptation to remain relevant to societal needs (Ainur et al., 2025). This phenomenon involves systemic changes in information accessibility and the development of interactive learning methods based on artificial intelligence, which are capable of providing personalized learning experiences and significantly increasing student engagement (Singh, 2024; Zaharuddin et al., 2024). In order to create adaptive learning ecosystems that dynamically modify content, pace, and learning trajectories to each person's profile and needs, this disruption also propels convergence between cloud computing infrastructure, big data analytics, and machine learning algorithms (Mirata et al., 2020; Rincón-Flores et al., 2024; Tan et al., 2025). In order to move beyond simple procedural digitization and toward comprehensive and long-lasting digital transformation, educational institutions must also completely rebuild their business models, curriculum, and evaluation systems (Hamadi & El-Den, 2023; Shenkoya & Kim, 2023). Disruptive technology adoption is not without structural obstacles, though, including organizational opposition, infrastructure and connection shortages, and structural impediments.

Institutional Quality and Educational Quality

Institutional quality serves as the systemic foundation for educational quality, particularly within the context of technological disruption. The interplay between these domains is central to institutional performance and sustainability. While technology adoption is necessary, its success relies heavily on the underlying institutional structure, including transformational leadership, digital infrastructure, human resource capacity, and adaptive governance (Kausar et al., 2025; Septio & Madhakomala, 2026; Tufa et al., 2026). Without this foundational alignment, technology integration remains partial and unsustainable. Furthermore, current literature indicates that institutional quality is a strategic prerequisite for addressing the global learning crisis, ensuring that the benefits of digital tools translate into tangible improvements in learning outcomes rather than exacerbating existing disparities (Benavides & Rodríguez-Lafuente, 2025).

Methodology

In order to guarantee a transparent, methodical, and repeatable approach of locating, assessing, and synthesizing the available evidence, this study used a Systematic Literature Review (SLR) in accordance with PRISMA 2020 standards. Two scholarly databases, Emerald and Semantic Scholar, were used for the literature search. The terms "educational quality" and "institutional quality" were used in the search method. Based on their titles and abstracts, 923 possibly pertinent publications were found in the first search. The relevance of each study to the research issue was then evaluated using a screening procedure, which made sure that only studies that satisfied the predetermined methodological and eligibility criteria were included in the review

Table 1: Inclusion and Exclusion Criteria

Aspect	Inclusion Criteria	Exclusion Criteria
Document Type	Journal articles	Conference proceedings, opinion papers, editorials and report
Topic	Studies addressing Institutional quality, educational quality, Technological Disruption in Education	Studies not related to accounting education or academic integrity
Publication Year	2022 - 2026	Publication before 2022
Indexing	Internationally indexed journals	Non international journals
Language	English	Languages other than english
Accessibility	Full-text articles available	Abstract only articles or inaccessible full texts

This literature study was conducted systematically through a series of rigorous stages to ensure that the collected data is relevant to the research objectives and meets academic accountability standards.

a. Determination of Article Eligibility Criteria

- Included articles encompass discussions regarding Institutional quality, educational quality, Technological Disruption in Education
- Articles were published within the time range of 2022–2026.
- Articles originate from reputable journals, namely Scopus-indexed international journals.
- Articles are written in English.

b. Determination of Literature Sources : The identification of literature sources was directed at capturing articles with sufficient academic relevance and quality; the data search process was conducted using Emerald and Semantic Scholar.

c. Literature Search and Selection : Articles obtained through searches using the keywords "institutional quality" and "educational quality" were selected through a review of titles and abstracts to assess their suitability with the research objectives. Articles deemed relevant were examined in greater depth to ensure their eligibility before being used as research data, potentially reflecting the scope of the available literature.

d. Data Collection : Based on the eligibility standards set in the preceding phase, articles from the first search results were gradually chosen. The selection procedure was carried out to guarantee that the used papers had sufficient publishing quality and were pertinent to the study subject. The following graphic illustrates the procedure for gathering and choosing articles.

e. Data Analysis : Data analysis in this study was conducted using the content analysis method on the selected scientific articles. This method can be utilized to identify, classify, and compare research findings related to the phenomenon being examined.

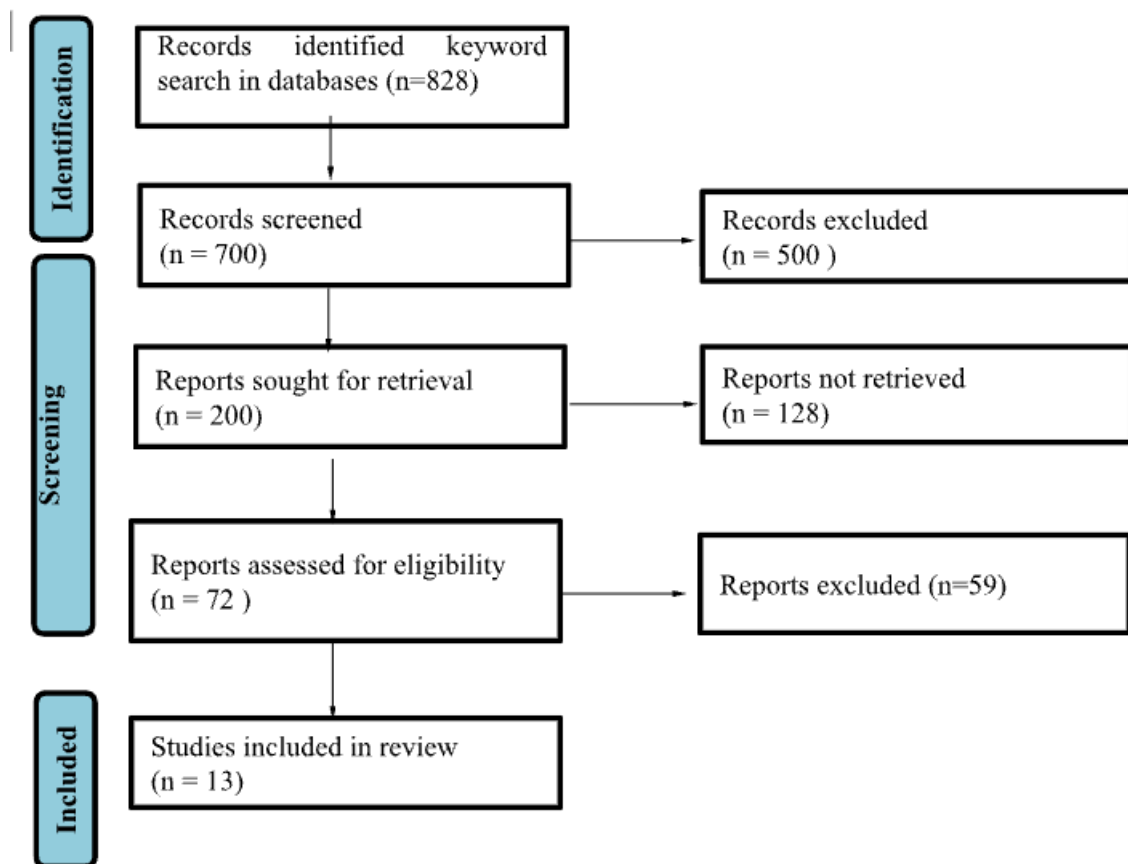


Figure 1: PRISMA Flow

Result and Discussion

Characteristics of Reviewed Studies

The final articles analysed in this Systematic Literature Review numbered thirteen, encompassing broad geographic diversity covering Italy, various Asian economies, European contexts including Portugal, Ethiopia and broader Sub-Saharan Africa, diverse cross-cultural populations, and global-scale bibliometric and systematic review mappings ; varied methodological approaches were likewise represented, spanning cross-sectional surveys, structural equation modelling, panel data econometrics, systematic literature reviews, bibliometric mapping, qualitative interviews, focus group discussions, and comparative cross-country designs. This methodological and contextual plurality enabled a valid thematic synthesis of findings across heterogeneous institutional and educational settings, while simultaneously providing the basis for the in-depth analysis presented in the subsequent sub-chapters that distinguish findings across the dimensions of institutional quality, the determinants and outcomes of educational quality, and the integrative nexus between institutional quality and educational quality in the era of technological disruption. The relatively prominent representation of African cases, particularly Sub-Saharan Africa, further reflects the strategic relevance of the institutional quality educational quality nexus in contexts characterised by resource constraints and ongoing governance reform. In order to facilitate cross-study comparison and the identification of finding patterns that inform the three sub-themes of qualitative synthesis presented in the following sub-chapters, each article that passed the selection is narratively described by presenting article identity, research objective, and key findings relevant to the dimensions of institutional quality, the determinants of educational

quality, and the evolving challenges of higher education quality in the era of technological disruption. These findings are then summarized in an article synthesis table.

Table 2: Literature Riview

No	Article Title	Author(s)	Year of Publication	Research Objectives
1	Student's Co-Creation Behavior in a Business and Economic Bachelor's Degree in Italy: Influence of Perceived Service Quality, Institutional Image, and Loyalty	Roberta Pinna, Gianfranco Cicotto, Hosein Jafarkarimi	2023	To investigate how perceived quality of educational service and institutional image influence students' value co-creation behavior, and the role of loyalty in this process, through studies on an Italian public university.
2	Do institutional governance and state fragility affect institutional quality in Asian economies?	Deyu Miao, Samreen Gillani, Hafiz Syed Mohsin Abbas, Zhan	2023	To investigate institutional quality in 25 Asian countries from 2009 to 2020 by examining the effects of State Fragility and Institutional Governance determinants on Country Policy and Institutional Rating as a proxy for institutional quality.
3	Fundamentals of Institutional Quality and Economic Freedom	Ryan Murphy	2024	To explore the determinants of institutional quality by constructing an index of consensus predictors and examining their relationship with specific dimensions of economic freedom.
4	Determinants of the effectiveness of quality assurance systems and institutional performance in higher education	Orlando Manuel Esteves Serrano, Francisco Javier Miranda González, Joaquim António Belchior Mourato	2025	To analyze the determinants of the effectiveness of Quality Assurance Systems and its impact on institutional performance in HEIs, based on stakeholder theory and the Resource-Based View, examining how management support, infrastructure quality, and faculty and student engagement shape QAS effectiveness and institutional outcomes.
5	Impact of teaching quality on student	Mengistu Anagaw Engida, Ashagrie	2024	To investigate the impact of teaching quality on student achievement, with student engagement and learning

	achievement: student evidence	Sharew Iyasu, Yalemwork Mossu Fentie		motivation as mediators, using partial least squares structural equation modeling.
6	Teaching Quality and Students' EFL Achievements in Ethiopia: Analysis From the Perspective of the Basic Dimensions of Teaching Quality	Jean- Baptiste M.B. Sanfo, Inoussa Malgoubri	2021	To analyze the relationship between teaching quality and students' learning achievements in Ethiopian primary education, examining how instructional quality can close socioeconomic learning achievement inequalities.
7	Quantifying quality: The impact of measures of school quality on children's academic achievement across diverse societies	Bruce Rawlings, Helen Davis, Adote Anum, et al.	2023	To assess whether children's numeracy and literacy performance across populations improves with age, examine correlations between several school quality measures, and test whether these are associated with academic achievement in 10 culturally and geographically diverse populations.
8	Critical examination of the measurement quality of student outcomes: a systematic review	L. Grützmahe r, B. Herbert, D. Holzberger, A. Naumann, M. Steffensky, S. Vieluf	2025	To systematically review the measurement quality of student outcomes assessment tools used in educational research and to evaluate their psychometric properties.
9	Evaluating education quality as a research instrument: A systematic review	Mohamad Ali Alhussam, Sasmita Samanta, Arun Kumar Ray, B. Kar, N. Dibiat	2024	To investigate the concept of quality in education and the assessment methods used, drawing on previous studies to provide a comprehensive understanding of educational quality and the available evaluation tools.
10	On the effect of military spending on education in Africa: what role	Isiaka Akande Raifu, Damian Chidozie	2024	To examine the role of institutional quality as a moderator in the relationship between military spending and

	does institutional quality play?	Uzoma-Nwosu, Alarudeen Aminu		educational outcomes across African countries.
11	Role of institutional quality in the public education financing–educational quality nexus: evidence from Sub-Saharan Africa	Abubakar Musah, Godfred Aawaar, Eric Nkansah	2024	To investigate how institutional quality moderates the relationship between public education financing and educational quality in Sub-Saharan African countries.
12	Higher education management in developing countries: a bibliometric review	Sunday Adewale Olaleye, Saheed A. Gbadegesin, Oluwafemi Samson Balogun, et al.	2024	To investigate scholarly works on higher education management from emerging economies by retrieving metadata from the Web of Science for bibliometric analysis, identifying how HE management has evolved in developing countries.
13	The role of higher education institutions networks in shaping the SDG agenda (full title verification required)	Macaione, Salomone, Caeiro	2026	To examine the role of higher education institution networks in shaping the SDG agenda, particularly focusing on how multi-level networks influence institutional capacity.

Dimensions of Institutional Quality

Institutional Governance, Networks and Service Quality

The study by Macaione, Salomone, and Caeiro (2026) on the role of HEI networks in shaping the SDG agenda demonstrates that the institutional capacity of higher education institutions is no longer merely individual, but relies heavily on the quality of multi-level networks managed adaptively. This finding suggests that institutional quality should be understood as a multidimensional construct that extends beyond internal organisational arrangements, incorporating external collaboration and network governance as strategic resources for institutional development. Such a perspective provides a broader conceptualisation of institutional quality, particularly in higher education systems facing increasingly complex societal and technological demands.

According to Miao et al. (2023), state fragility and institutional governance jointly influence institutional quality across Asian economies. Government effectiveness, rule of law, and corruption control emerged as key determinants of institutional quality, with implications that

extend to the quality of higher education services through broader governance mechanisms. These findings complement Macaione et al.'s perspective by demonstrating that institutional quality is shaped not only by organisational networks at the institutional level but also by governance conditions operating at the national level. Together, these studies indicate that institutional quality is influenced by both internal institutional capacity and external governance environments.

According to research by Miao et al. (2023) in Heliyon, state fragility and institutional governance work together to influence the quality of institutions in Asian nations. This study used an econometric model that accounts for macroeconomic influences and was generated from a cross-country panel investigation across Asia. It has been demonstrated that factors including government efficacy, the rule of law, and corruption control are important indicators of institutional quality in the public sector. These factors also influence the quality of higher education services through a cascade effect.

The contribution of Pinna, Cicotto, and Jafarkarimi (2023) in the context of the undergraduate Business and Economics program in Italy adds the perspective that perceived service quality and institutional image are not only outcomes but also antecedents of institutional quality itself, as both shape student co-creation behavior which directly improves or worsens the institution's reputation and capacity over time.

Collectively, the reviewed studies demonstrate that institutional quality is not determined by a single organisational factor but emerges through the interaction of governance quality, collaborative networks, and stakeholder-oriented service practices. Although each study examines different institutional contexts, they consistently indicate that institutional quality depends on the ability of higher education institutions to integrate internal governance mechanisms with external relationships and broader governance environments. This synthesis reinforces the argument that institutional quality represents a systemic capability that underpins institutional resilience and long-term educational performance, particularly in the context of technological disruption.

Quality Assurance Systems and Institutional Performance

The study by Serrano et al. (2025), published in *Cogent Education*, demonstrates that the effectiveness of quality assurance systems is a key dimension of institutional quality in higher education. The findings indicate that institutional leadership, internal auditor capability, and the integration of quality assurance (QA) data into strategic decision-making are the primary determinants of QA system effectiveness. These findings suggest that quality assurance should not be viewed merely as an administrative compliance mechanism but as a strategic governance instrument that strengthens institutional capacity and supports continuous organisational improvement.

This perspective is reinforced by Murphy (2024), who argues that institutional quality is fundamentally associated with broader governance conditions and economic freedom. While Serrano et al. emphasise organisational processes within higher education institutions, Murphy extends the discussion by demonstrating that institutional quality is also shaped by macro-level institutional environments.

Taken together, these studies indicate that institutional quality is a multidimensional construct operating across both organisational and systemic levels. Effective quality assurance systems

therefore depend not only on strong internal leadership and institutional management but also on supportive governance environments that enable strategic decision-making and sustainable institutional development.

Institutional Quality and Educational Quality

The study by Raifu, In the Journal of Business and Socio-Economic Development, Uzoma-Nwosu and Aminu (2024) investigate how institutional quality functions as a moderator in the connection between military spending and educational results in Africa. This study demonstrates that the beneficial effects of defense expenditure on education are only maximized when institutions in those nations have sufficient institutional quality, using panel data from 31 African nations for the years 2005–2020 and a panel model with variable interaction. To put it another way, military expenditure may be a useful source of funding for education, but only if it is transferred via organizations with excellent administrative skills, accountability, and openness. The SLR's central hypothesis that institutional quality acts as a prerequisite for the efficacy of public policy in the education sector is directly supported by these results. These findings imply that financial investment alone is insufficient to improve educational outcomes unless supported by effective institutional governance. Rather than acting as an independent determinant, institutional quality appears to function as an enabling condition that determines whether public investment can be translated into meaningful educational improvement.

The research by Musah, Aawaar, and Nkansah (2024), published in *Cogent Economics & Finance* in 2024, further strengthens this evidence. This cross-country empirical study in Sub-Saharan Africa found that increasing education financing without a corresponding increase in institutional quality does not yield a proportional improvement in educational quality. More precisely, at the 1% significance level, the relationship between institutional quality and education finance shows a substantial positive correlation on educational quality. The idea that institutional quality is a structural necessity for educational excellence rather than just a supplement is strengthened by our data, which clearly show that funding is a required input but not a sufficient condition without a solid institutional basis. The consistency between the findings of Raifu et al. (2024) and Musah et al. (2024) strengthens the argument that institutional quality moderates the effectiveness of financial resources across different policy contexts. Although both studies examine different forms of educational investment, they converge in demonstrating that institutional quality determines the extent to which financial inputs generate improvements in educational quality.

According to Sanfo & Malgoubri's (2021) these findings suggest that teaching quality represents the primary mechanism through which institutional quality influences student learning outcomes. Consequently, improvements in institutional governance are unlikely to produce meaningful educational gains unless they are accompanied by investments in instructional quality and teacher capacity.

Rawlings et al (2023). show that variations in school quality measures consistently affect children's academic achievement across diverse societies, with the most significant effects on the dimensions of teacher quality and instructional resources. The comparative cross-societies approach employed in this study allows for limited generalization across cultural and economic contexts. This evidence complements the findings of Sanfo and Malgoubri (2021), indicating that educational quality is influenced not only by instructional practices but also by the broader availability of institutional resources that support effective teaching. Together, these studies

demonstrate that institutional quality and teaching quality are mutually reinforcing rather than independent dimensions of educational improvement.

Grützmacher et al.(2025) provide a methodological contribution through a systematic review of student outcomes measurement quality, demonstrating that many commonly used indicators have not been fully validated psychometrically. This serves as an important caveat for the interpretation of educational research findings globally.

Overall, the reviewed studies consistently indicate that institutional quality does not influence educational quality directly but operates through several interconnected mechanisms, particularly teaching quality, institutional governance, resource allocation, and quality assurance systems. While Raifu et al. (2024) and Musah et al. (2024) emphasise the moderating role of institutional quality in transforming financial resources into educational outcomes, Sanfo and Malgoubri (2021) together with Rawlings et al. (2023) demonstrate that teaching quality serves as the primary mechanism through which institutional capacity affects student achievement. Furthermore, the methodological observations of Grützmacher et al. (2025) suggest that future evaluations of educational quality require more rigorous measurement frameworks to ensure valid assessment across different educational contexts. Collectively, these findings reinforce the argument that institutional quality should be conceptualised as a multidimensional and systemic capability that underpins sustainable educational quality, particularly in the context of technological disruption.

Challenges in the Era of Technological Disruption

The most consistent finding from the entire SLR is the fragmentation between research on institutional quality and educational quality and research on technological disruption. A bibliometric review by Olaleye et al. on higher education management in developing countries further strengthens this observation: the majority of research on HE management in developing countries still focuses on governance, finances, and student services using conventional analytical frameworks, while the dimension of technological disruption remains inadequately addressed. The implication for this SLR is that there is a research gap, as evidence regarding how technological disruption alters the relationship between institutional quality and educational quality remains very limited and requires further exploration. Although not the main focus, it implicitly discusses the risk of quality degradation in the era of disruption.

Empirical evidence further indicates that technological disruption magnifies existing institutional weaknesses rather than creating entirely new challenges. Raifu et al. (2024) demonstrate that institutions with limited institutional quality are unable to utilise additional financial resources effectively for educational improvement. Similarly, Musah et al. (2024) show that increasing educational financing without simultaneously strengthening institutional quality results in inefficient resource allocation rather than improved educational outcomes. Serrano et al., (2025) further demonstrate that institutional readiness for technological disruption depends heavily on the effectiveness of quality assurance systems. Their findings indicate that quality assurance is no longer limited to monitoring institutional compliance but increasingly functions as a strategic mechanism for supporting organisational learning and evidence-based decision making. This organisational perspective is complemented by Miao et al., (2023) who highlight the importance of macro-level governance in shaping institutional performance. While Serrano et al. focus on institutional capacity within higher education institutions, Miao et al. demonstrate that broader governance quality also determines an institution's ability to respond to technological change. Collectively, these studies indicate that successful adaptation to technological disruption requires institutional capacity at multiple

levels. Internal quality assurance mechanisms, strategic leadership, and supportive governance environments operate together to strengthen institutional resilience and enable sustainable digital transformation.

Conclusion

A synthesis of evidence from this entire Systematic Literature Review consistently demonstrates that institutional quality functions as a structural prerequisite for educational quality in contemporary higher education, rather than merely an independent co-determinant. Analysis of empirical evidence shows that the positive impact of all educational inputs—ranging from increased financing and technological investment to the development of teaching capacity is only optimal when institutions possess an adequate level of institutional quality in terms of governance, collaborative networks, auditor capacity, and adaptive management (Musah et al., 2024 ; Septio & Madhakomala, 2026). Institutional quality itself is proven to be not a monolithic variable but a multi-dimensional construct that requires simultaneous strengthening across five main pillars: institutional governance and collaborative networks, service quality and institutional image, quality assurance systems, macro-governance capacity, and data-driven strategic decision-making. Partial investment in one dimension without considering others has proven ineffective in producing sustainable improvements in educational quality (Benavides & Rodríguez-Lafuente 2025). Furthermore, teaching quality emerges as a critical point of transmission that translates institutional capacity into student achievement at the micro level, thereby further affirming that improving educational quality cannot be achieved solely through increasing inputs but requires simultaneous dual investment in institutional capacity and teaching capacity (Sari et al., 2024; Kumar et al., 2025).

The findings of this SLR are increasingly relevant when situated within the context of global technological disruption in higher education, where such disruption reinforces, rather than diminishes, the role of institutional quality as a prerequisite for educational quality (Yangchen & Xuejian, 2025). Institutions with limited digital capacity risk falling significantly behind in the digital transformation era; furthermore, large-scale investments in educational technology absent the simultaneous strengthening of institutional capacity will prove to be an inefficient allocation of resources, as institutions lacking the necessary managerial capacity cannot meaningfully integrate technology into learning processes (Musah et al., 2024; Septio & Madhakomala, 2026; Yangchen & Xuejian, 2025). Future improvements in the quality of higher education will therefore require an integrative approach that combines the development of teaching capacity and the modernization of quality assurance systems to accommodate new quality metrics in the digital age with the strengthening of institutional quality, which includes transformational leadership, digital infrastructure, human resource capacity, and adaptive governance (Bond et al., 2024; Kausar et al., 2025; Kumar et al., 2025; Rincón-Flores et al., 2024). This SLR suggests a future research agenda that includes design-based research to produce useful, evidence-based interventions for quality improvement, cross-contextual longitudinal studies to test the long-term stability of these relationships, comparative studies between the Global North and Global South to identify contextual mechanisms, and the creation of new constructs for digital institutional quality.

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References

- Abdelaziz, S. (2022). The Relation between Good Governance and Improving Performance in the Higher Education -HE- Institutions. *Business and Management Studies*, 8(2), 24–24. <https://doi.org/10.11114/bms.v8i2.5789>
- Abnoulgid, F., Aouhassi, S., Mansouri, K., & Akef, F. (2025). Quality 4.0 in higher education: integrating industry 4.0 technologies in higher education quality management practices. *Frontiers in Education*, 10. <https://doi.org/10.3389/feduc.2025.1594377>
- Ainur, N., Cahyani, S., Novianti, F., & Kusumaningrum, H. (2025). Strategi Adaptasi Lembaga Pendidikan terhadap Dinamika Perubahan Lingkungan Eksternal di Era Digital. *Jurnal Nakula Pusat Ilmu Pendidikan Bahasa Dan Ilmu Sosial*, 3(6), 115–124. <https://doi.org/10.61132/nakula.v3i6.2317>
- Alé-Ruiz, R., Abad, F. M., & Moral-Marcos, M. T. D. (2023). Academic engagement and management of personalised active learning in higher education digital ecosystems. *Education and Information Technologies*, 29(10), 12289–12304. <https://doi.org/10.1007/s10639-023-12358-4>
- Angrist, N., Djankov, S., Goldberg, P., & Patrinos, H. A. (2021). Measuring human capital using global learning data. *Nature*, 592(7854), 403–408. <https://doi.org/10.1038/s41586-021-03323-7>
- A'Yun, Q., Lestari, A. S., Hernadi, N. A., Hernadianto, H., Wicaksono, G. (2025). *Manajemen penjaminan mutu perguruan tinggi*. Damayanti, E. (Ed.). CV Widina Media Utama.
- Benavides, L. A. M., & Rodríguez-Lafuente, Á. (2025). Educational Quality: A Systematic Review Using the Prisma Method. *Revista de Gestão Social e Ambiental*, 19(2). <https://doi.org/10.24857/rgsa.v19n2-100>
- Benavides, L. M. C., Arias, J. A. T., Serna, M. A., Branch, J. W., & Burgos, D. (2020). Digital Transformation in Higher Education Institutions: A Systematic Literature Review. *Sensors*, 20(11), 3291–3291. <https://doi.org/10.3390/s20113291>
- Biloshchytskyi, A., Omirbayev, S., Mukhatayev, A., Kuchanskyi, O., Hlebena, M., Andrashko, Y., Mussabayev, N., & Faizullin, A. (2024). Structural models of forming an integrated information and educational system “quality management of higher and postgraduate education.” *Frontiers in Education*, 9. <https://doi.org/10.3389/feduc.2024.1291831>
- Bisri, A., Putri, A., & Rosmansyah, Y. (2023). A Systematic Literature Review on Digital Transformation in Higher Education: Revealing Key Success Factors. *International Journal of Emerging Technologies in Learning (iJET)*, 18(14), 164–187. <https://doi.org/10.3991/ijet.v18i14.40201>
- Bond, M., Khosravi, H., Laat, M. de, Bergdahl, N., Negrea, V., Oxley, E., Pham, P., Chong, S. W., & Siemens, G. (2024). A meta systematic review of artificial intelligence in higher education: a call for increased ethics, collaboration, and rigour. *International Journal of Educational Technology in Higher Education*, 21(1). <https://doi.org/10.1186/s41239-023-00436-z>
- Chrystie, D., & Putri, S. M. A. (2025). Innovation in Education: Improving the Quality of Learning in The Digital Era. *Jurnal Teknologi Pendidikan*, 2(4). <https://doi.org/10.47134/jtp.v2i4.1931>
- Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: the state of the field. *International Journal of Educational Technology in Higher Education*, 20(1). <https://doi.org/10.1186/s41239-023-00392-8>
- Deacon, B., Laufer, M., & Schäfer, L. O. (2022). Infusing educational technologies in the heart of the university—A systematic literature review from an organisational perspective. *British Journal of Educational Technology*, 54(2), 441–466. <https://doi.org/10.1111/bjet.13277>

- Fernández, A., Gómez, B., Binjaku, K., & Meçe, E. K. (2023). Digital transformation initiatives in higher education institutions: A multivocal literature review. *Education and Information Technologies*, 28(10), 12351–12382. <https://doi.org/10.1007/s10639-022-11544-0>
- Grützmacher, L., Herbert, B., Holzberger, D., Naumann, A., Steffensky, M. & Vieluf, S., 2025. Critical examination of the measurement quality of student outcomes: A systematic review. *School Effectiveness and School Improvement*, 36(2), 211–241. <https://doi.org/10.1080/09243453.2025.2482579>.
- Guerrero-Quíñonez, A. J., Bedoya-Flores, M. C., Mosquera-Quíñonez, E. F., Ango-Ramos, E. D., & Mesías-Simisterra, Á. E. (2023). Higher Education 4.0: brief considerations. *Ibero-American Journal of Education & Society Research*, 3(1), 272–275. <https://doi.org/10.56183/iberoeds.v3i1.628>
- Hamadi, M., & El-Den, J. (2023). A conceptual research framework for sustainable digital learning in higher education. *Research and Practice in Technology Enhanced Learning*, 19, 1–1. <https://doi.org/10.58459/rptel.2024.19001>
- Jameson, J., Rummyantseva, N. L., Cai, M., Markowski, M., Essex, R., & McNay, I. (2022). A systematic review and framework for digital leadership research maturity in higher education. *ResearchSPace (Bath Spa University)*, 3, 100115–100115. <https://doi.org/10.1016/j.caeo.2022.100115>
- Kausar, S., Arif, M., & Sebgag, S. (2025). Transformational Leadership and the Challenges of Educational Digitalization: A Systematic Literature Review (2020–2025). *Nidhomul Haq Jurnal Manajemen Pendidikan Islam*, 10(2), 312–332. <https://doi.org/10.31538/ndhq.v10i2.196>
- Kumar, V., Singh, A., Sharma, N. K., Verma, P., & Kaswan, M. S. (2025). Improving educational quality: the role of quality 4.0 in higher education institutions. *The TQM Journal*, 1–39. <https://doi.org/10.1108/tqm-12-2024-0527>
- Lesnawati, L. (2025). Inovasi Manajemen Pendidikan Berbasis Kualitas: Upaya Membangun Daya Saing Perguruan Tinggi Berkelanjutan. *JUPEIS Jurnal Pendidikan Dan Ilmu Sosial*, 4(3), 637–646. <https://doi.org/10.57218/jupeis.vol4.iss3.1864>
- Lualhati, G. P. (2026). Enhancing Educational Programme Quality in Higher Education through Adaptive Curriculum Leadership in the Digital Era. *Journal of Learning for Development*, 13(1), 162–174. <https://doi.org/10.56059/jl4d.v13i1.1912>
- Macaione, I., Salomone, R., & Caeiro, S. (2026). The role of higher education institutions networks in shaping SDG agendas: mapping types, scales and priorities. *International Journal of Sustainability in Higher Education*, 25(3), 425–446. <https://doi.org/IJSHE-01.1108/IJSHE-01-2026-0075>
- Miao, D., Gillani, S., Abbas, H. S. M., & Zhan, H. (2023). Do institutional governance and state fragility affect institutional quality in Asian economies? *Heliyon*, 9(4). <https://doi.org/10.1016/j.heliyon.2023.e15467>
- Mirata, V., & Bergamin, P. (2023). Role of organisational readiness and stakeholder acceptance: an implementation framework of adaptive learning for higher education. *Educational Technology Research and Development*, 71(4), 1567–1593. <https://doi.org/10.1007/s11423-023-10248-7>
- Mirata, V., Hirt, F., Bergamin, P., & Westhuizen, C. van der. (2020). Challenges and contexts in establishing adaptive learning in higher education: findings from a Delphi study. *International Journal of Educational Technology in Higher Education*, 17(1). <https://doi.org/10.1186/s41239-020-00209-y>
- Musah, A., Aawaar, G., & Nkansah, E. (2024). Role of institutional quality in the public education financing–educational quality nexus: evidence from Sub-Saharan Africa. *Journal of Economics and Development*, 26(3), 236–

252. <https://doi.org/10.1108/jed-07-2023-0133>
- Nazyrova, A., Miłosz, M., Bekmanova, G., Omarbekova, A., Aimicheva, G., & Kadyr, Y. (2025). The Digital Transformation of Higher Education in the Context of an AI-Driven Future. *Sustainability*, 17(22), 9927–9927. <https://doi.org/10.3390/su17229927>
- Nurjanah, N. (2025). Transformation of Learning Leadership in the Digital Era: A Qualitative Analysis Based on Literature Studies on Adaptive Educational Management Models. *Journal of Dialogos*, 2(4), 27–39. <https://doi.org/10.62872/k2vs8p48>
- Pasi, B. N., & Dhamak, P. (2026). Transforming higher education for the fourth industrial revolution: a strategic review of digital integration and institutional readiness. *Journal of Science and Technology Policy Management*, 1–29. <https://doi.org/10.1108/jstpm-03-2025-0101>
- Pinna, R., Cicotto, G. & Jafarkarimi, H., 2023. Student's co-creation behavior in a business and economic bachelor's degree in Italy: Influence of perceived service quality, institutional image, and loyalty. *Sustainability*, 15(11), p.8920
- Raifu, I. A., Uzoma-Nwosu, D. C., & Aminu, A. (2024). On the effect of military spending on education in Africa: what role does institutional quality play? *Journal of Business and Socio-Economic Development*, 5(3), 222–239. <https://doi.org/10.1108/jbsed-10-2023-0081>
- Rawlings, B., Davis, H., Anum, A., Burger, L., Chen, L., Copland, A., d'Ettorre, P., Fischer, R., Gari, A., Kazi, S., Lew-Levy, S., McDarby, S., Messer, E. J. E., Morandi, I., Neldner, K., O'Duill, M., Ross, C. T., Salali, G. D., Sealy, J., . . . Vignoles, V. L. (2023). Quantifying quality: The impact of measures of school quality on children's academic achievement across diverse societies. *Developmental Science*, 26(6), <https://doi.org/10.1111/desc.13434>
- Rincón-Flores, E. G., Castano, L., Solis, S. L. G., Lopez, O. O., Rodríguez-Hernández, C. F., Lara, L. A. C., & Aldape, P. (2024). Improving the learning-teaching process through adaptive learning strategy. *Smart Learning Environments*, 11(1). <https://doi.org/10.1186/s40561-024-00314-9>
- Rodríguez-Ponce, E., Araneda-Guirriman, C., Pedraja-Rejas, L., & Rodríguez-Ponce, J. (2019). The impact of quality of service on institutional quality in universities: Empirical evidence from Chile El impacto de la calidad del servicio sobre la calidad institucional en las universidades: Evidencia empírica desde Chile. *Universidad de Chile*. <https://repositorio.uchile.cl/handle/2250/165341>
- Sanfo, J. M. B., & Malgoubri, I. (2021). Teaching quality and students' EFL achievements in Ethiopia: Analysis from the perspective of the basic dimensions of teaching quality. *Theory and Practice in Language Studies*, 11(10), 1163–1172. <https://doi.org/10.1507/tpsl.111.01>
- Sari, H. E., Tumanggor, B., & Efron, D. (2024). Improving Educational Outcomes Through Adaptive Learning Systems using AI. *International Transactions on Artificial Intelligence (ITALIC)*, 3(1), 21–31. <https://doi.org/10.33050/italic.v3i1.647>
- Septio, G., & Madhakomala, R. (2026). Paradigms, Strategies, and Challenges of Quality Control in Higher Education in the Digital Era: A Systematic Literature Review. *Dinasti International Journal of Education Management And Social Science*, 7(2), 2224–2241. <https://doi.org/10.38035/dijemss.v7i2.5817>
- Serrano, O. M. E., Miranda González, F. J., & Mourato, J. A. B. (2025). Determinants of the effectiveness of quality assurance systems and institutional performance in higher education. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2025.2581411>
- Shenkoya, T., & Kim, E. (2023). Sustainability in Higher Education: Digital Transformation of the Fourth Industrial Revolution and Its Impact on Open Knowledge. *Sustainability*, 15(3), 2473–2473. <https://doi.org/10.3390/su15032473>

- Singh, P. (2024). Artificial Intelligence and Student Engagement. In *Advances in educational technologies and instructional design book series* (pp. 201–232). IGI Global. <https://doi.org/10.4018/979-8-3693-5633-3.ch008>
- Tan, L., Hu, S., Yeo, D. J., & Cheong, K. H. (2025). Artificial intelligence-enabled adaptive learning platforms: A review. *Computers and Education Artificial Intelligence*, 9, 100429–100429. <https://doi.org/10.1016/j.caeai.2025.100429>
- Tufa, M. A., Estifanos, A. B., & Demissie, D. (2026). E-leadership approach and technology integration as predictors of quality of education at colleges of teacher education in Ethiopian. *Discover Education*, 5(1). <https://doi.org/10.1007/s44217-026-01293-4>
- Vélez, D. C. V., Reto, A. J. P., & Peña, E. C. (2025). Institutional Governance in Educational Units: A Systematic Review of the Literature of the Last Five Years. *Revista de Gestão Social e Ambiental*, 19(2). <https://doi.org/10.24857/rgsa.v19n2-096>
- Viviana, L. B., Elisabeth, Hugo, G. T., Víctor, Jessenia, Á. L., Tania, & Esteban, R. T. (2025). Cambios contemporáneos en las dimensiones y componentes de la calidad en la Educación Superior. *Dialnet (Universidad de la Rioja)*. <https://dialnet.unirioja.es/servlet/oaiart?codigo=10471141>
- Yangchen, W., & Xuejian, G. (2025). The Impact of AI-Driven Educational Integration on High-Quality Economic Development: An Analytical Study. *Tehnicki Vjesnik - Technical Gazette*, 32(6). <https://doi.org/10.17559/tv-20250220002404>
- Yaqin, L. N., Nugraha, R. A., & FADHILAH, N. A. (2026). Transformasi Pendidikan Digital dan Reproduksi Ketimpangan Sosial: Studi Empiris di Indonesia. *PERSEPTIF Jurnal Ilmu Sosial Dan Humaniora*, 4(1), 27–35. <https://doi.org/10.70716/perseptif.v4i1.458>
- Zaharuddin, Chen, Y., & Yao, G. (2024). Enhancing Student Engagement with AI-Driven Personalized Learning Systems. *International Transactions on Education Technology (ITEE)*, 3(1), 1–8. <https://doi.org/10.33050/itee.v3i1.662>
- Zook, L., & Ryall, C. (2021). Effectiveness of I'm Learning for achieving quality learning environments. *Nordic Journal of Comparative and International Education (NJCIE)*, 5(3), 74–95. <https://doi.org/10.7577/njcie.4054>