School Organizational Transformation between Global Digital Pressures and Local Cultural Preservation

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Abstract. Digital transformation is quickly changing how schools are governed, how decisions are made, and how daily routines are managed. At the same time, schools must work hard to protect and maintain local community values. Most previous research has treated digital adoption and cultural conservation as separate issues. This misses the real struggle schools face in balancing both demands. Our review addresses this gap. We introduce a new conceptual framework that sees schools as intermediaries at the meso level. This approach highlights how schools not only adopt technology but also adapt global digital trends to fit their local culture. A dataset of 26 Scopus-indexed journal articles published between 2020 and 2026 was examined for this study. By pairing bibliometric mapping with thematic analysis, we successfully tracked publication trends and synthesized the core ideas. Our findings show that lasting school transformation arises from the ongoing tension among four factors: global digital pressures, organizational capacity, multi-stakeholder governance, and local cultural settings. Rather than simply following outside mandates, schools interpret, adjust, and reshape digital changes to fit their traditions and protect their cultural identity. Based on Socio-Technical Systems Theory, our study shows that real change happens through the ongoing connection between technology and social networks. This review offers new ways to think about schools as mediators between global and local needs, and gives practical advice for leaders to create digital strategies that respect local culture.

Keywords: Cultural Identity, Digital Transformation, Multi-Stakeholder Governance, School Organizational Transformation

1. Introduction

Digital technologies have transformed education, affecting classrooms, governance, and policy development. Governments worldwide have invested in digital infrastructure and data systems to improve education, but results have varied. Many international digital

© The Author(s) 2026
K. Chandra Kirana et al. (eds.), *Proceedings of the International Conference on Business, Economic, and Social Sustainability (ICOBES 2026)*, Advances in Economics, Business and Management Research 409,
https://doi.org/10.2991/978-94-6239-811-5_12

reforms are based on broad assumptions. However, schools operate in unique social, cultural, and organizational settings that rarely match these standard models. This creates a gap between global digital agendas and the realities schools face in different local contexts [1].

The use of AIED has accelerated this transformation by supporting personalized learning, better management, and easier access to teaching resources [2]. Frameworks like TPACK have helped teachers use digital technologies more effectively [3]. As schools rely more on smart technologies, there is a greater need for good governance, accountability, and Sustainability. Many AIED systems are built on research from the Global North, which may not match the culture, language, or structure of local schools. This can lead to uniform approaches that overlook local values in education [1], [4].

Digital policies are not always easy to implement in schools. A digital school culture develops through leaders' actions, teacher readiness, shared values, and daily teaching routines [4], [5]. While personalized instruction is a key benefit of AI in education, numbers like software usage rates do not show the teamwork, trust, and core values that shape school life [2]. Statistics like platform engagement cannot fully capture the collaboration and values that define school communities [1], [5].

Research on digital transformation in education has grown quickly in recent years. Studies have looked at artificial intelligence, digital skills, governance, and technology-supported teaching from different angles. For instance, Bergdahl and Sjöberg [2] studied the role of AI in education, while Ng et al. [3] focused on teachers' digital skills as essential for using technology well. Chan [6] suggested an AI policy framework for schools, and Gleiß et al. [4] highlighted the need for strong governance in national digital education platforms. Digital leadership, school culture, readiness, and leadership ability are also important for lasting digital transformation in schools [5], [7], [8], [9].

Despite these advances, the research is still fragmented. Most studies focus either on broad digital policies and governance [1], [4] or on the experiences of teachers, students, and technology use [3], [10]. Less attention is given to organizational processes at the middle level, where schools interpret and adapt global digital agendas to fit local cultures. As a result, we still do not fully understand why similar digital policies lead to different results in schools with different leadership, governance, and cultural settings [4], [5], [7], [11].

To bridge these gaps, our study adopts Socio-Technical Systems Theory (STST) to analyze schools as crucial meso-level mediators. Through a Zoom Out–Zoom In framework, we show how educational institutions adapt global digital demands into teaching and learning practices that respect local cultural contexts. This review builds directly upon the work of Anthonysamy et al. [12], however, we expand the traditional STST boundary by demonstrating how schools concurrently balance technology, organizational capacity, governance, and cultural identity throughout their transformation.

This study revolves around three central inquiries. The first question (RQ1) synthesizes existing research trends in school organizational transformation. The second (RQ2) employs a Zoom Out–Zoom In approach to analyze the dynamic relationship between global digital shifts and local cultural identities. The third (RQ3) shifts focus

toward ethics, examining how schools maintain cultural values and utilize multi-stakeholder governance to sustain long-term change. Through this investigation, the study underscores the role of schools as institutional mediators balancing global digital demands with local educational needs. Furthermore, it supplies policymakers, school leaders, and educators with the practical tools needed to enhance organizational capacity, drive collaboration, and maintain cultural integrity amid transformation[12].

2. Literature review

Many researchers see school organizational change mainly as adding technology to classrooms. While this is important, it does not capture the whole story of modern schools. Digitalization has affected teaching, administration, school culture, and leadership. Using technology is just one part; it also changes how schools are structured, how decisions are made, and how values are kept. This review uses STST to explain how technical and social systems interact during organizational change [12].

From the STST perspective, technology alone does not drive organizational change. A school's ability to adapt, learn, and renew depends on its overall capacity. Digital infrastructure is just one part. Factors like organizational strength, teacher skills, governance, and school culture all influence how technology is used. Because these factors differ from school to school, the same digital policy can have very different results. Real transformation depends on how well technology is woven into daily practice, not just on having the tools [3]. Strong leadership helps by making schools more flexible [7].

Many studies on digital transformation still focus more on technology than on how organizations change. Less attention has been paid to how schools manage, coordinate, and sustain transformation over time [3]. Recently, research has started to focus more on the organizational side as key to successful digital change. A school's digital culture shapes how people use technology in ways that match school values [5]. Nagel and Wallin [8] point out that leadership has a big impact on school culture and technology use. Good technology leadership is based on a shared vision, ongoing learning, and strong support [3], [9].

The organizational side is even more important in schools with diverse cultures. Efficiency and standardization, key to digital projects, do not always align with local values like shared responsibility and teamwork in learning. Schools adjust digital changes to support, not weaken, their local identity. Flexible digital governance is now seen as essential for lasting change [4], [5].

Current research looks at two main areas. Micro-level studies examine the experiences of teachers and students, while macro-level studies look at international policies and administration. The organizational meso level connects leadership, governance, and policy during change. Teachers' experiences show that how technology is used depends a lot on school practices and culture [4], [10].

This review bridges this gap by presenting an STST-based Zoom-In–Zoom-Out perspective. Zoom In: This review uses an STST-based Zoom-In–Zoom-Out approach. Zoom In looks at daily interactions among teachers, students, leaders, and digital tools [5].

Williamson & Eynon [1] and Gleiß et al. [4] discuss how international guidelines affect education. These views converge at the organizational level, where schools adapt global digital pressures to fit local culture [10]. hardware. Administrative setups, cultural roots, oversight, and modern tools must be assessed together. Utilizing STST at an intermediate scale reveals how schools bridge the gap between global digital trends and local cultural patterns.

3. Methodology

This study employed a Systematic Literature Review (SLR) to synthesize the existing literature on school organizational transformation in response to global digital pressures and local cultural preservation. The review followed a systematic review process to ensure transparency, consistency, and reproducibility in identifying, selecting, and synthesizing relevant studies.

The literature search was conducted exclusively in the Scopus database because of its comprehensive coverage of peer-reviewed international journals in education, management, and interdisciplinary research. The search strategy combined keywords related to school organizational transformation, digital transformation, organizational change, governance, and local cultural identity using Boolean operators (AND and OR). The search was restricted to English-language journal articles published between 2020 and 2026.

To maintain the relevance and quality of the review, we established predefined inclusion and exclusion criteria before screening. Studies were included if they (1) focused on school organizational transformation or organizational change in educational institutions, (2) discussed digital transformation, leadership, governance, organizational capacity, or cultural identity, (3) were published in peer-reviewed English-language journals indexed in Scopus between 2020 and 2026, and (4) provided conceptual or empirical evidence relevant to the research questions. Studies were excluded if they were conference papers, book chapters, editorials, notes, duplicate records, or publications unrelated to educational organizations.

The study selection process consisted of four sequential stages. First, potentially relevant studies were identified through a structured search in the Scopus database. Second, the retrieved records were screened by reviewing their titles, abstracts, and keywords to assess their relevance to the research topic. Third, the remaining studies underwent an eligibility assessment through full-text examination based on the predefined inclusion and exclusion criteria. Finally, 26 articles met all eligibility requirements and were included in the final synthesis.

We screened the initial literature. From that process, 26 articles were finally selected based on our criteria. A dual-method analysis was then adopted to unpack this dataset. First, we used bibliometric mapping. Through this method, evolving keyword shifts and citation networks were carefully tracked over time. Right after that, we shifted to a deep thematic reading. The core concepts scattered across the papers were integrated through this

qualitative step. This entire investigative process was anchored by Socio-Technical Systems Theory (STST). By using this theoretical framework, we successfully analyzed how tech tools, school capacity, joint governance, and local culture clash or align during transformation.

4. Results and Discussion

4.1 The Gap between Research and Practice of School Organizational Transformation in the Digital Era (RQ1)

Using 26 articles that met the selection criteria, the evolution of scholarship was explored through bibliometric analysis for RQ1. Trends of publications, citations, and dominant research themes were examined. Results show a shift from technology discussions to a systematic, contextually aware understanding of organizational transformation.

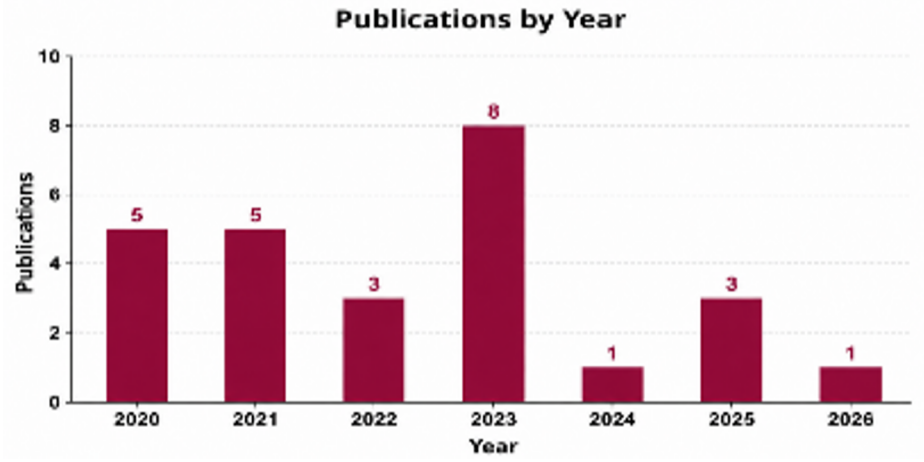


Figure 1. Annual Publication Trends on School Organizational Transformation (2020–2026)

Annual publication trends suggest research will continue to increase through 2026, reflecting an organizational transformation agenda rather than a short-term solution to rapid digitalization. The upward trend indicates ongoing academic interest in educational leadership, organizational innovation, and school governance

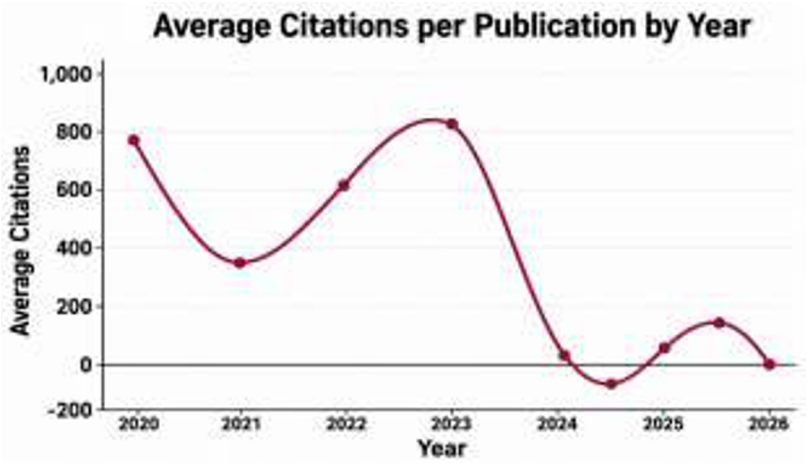


Figure 2. Trends (2020-2026): Average Citations per Publication.

Citation analysis shows a significant increase in average citations to earlier articles, indicating they laid conceptual foundations that later research has built upon (Figure 2). The decrease in average citations for recent publications is due to "citation lag." Earlier research provided conceptual foundations, and later research expanded this to include organizational context and implementation practices.



Figure 3. This Word Cloud was created from the Title. This Word Cloud was developed from the words in the Title.

Terminology in article titles shows changes in scholarly priorities. Terms such as digital, education, transformation, school, heritage, and culture indicate that digital transformation is now considered an aspect of organizational change formed by interactions among technology, organization, and socio-cultural environment.

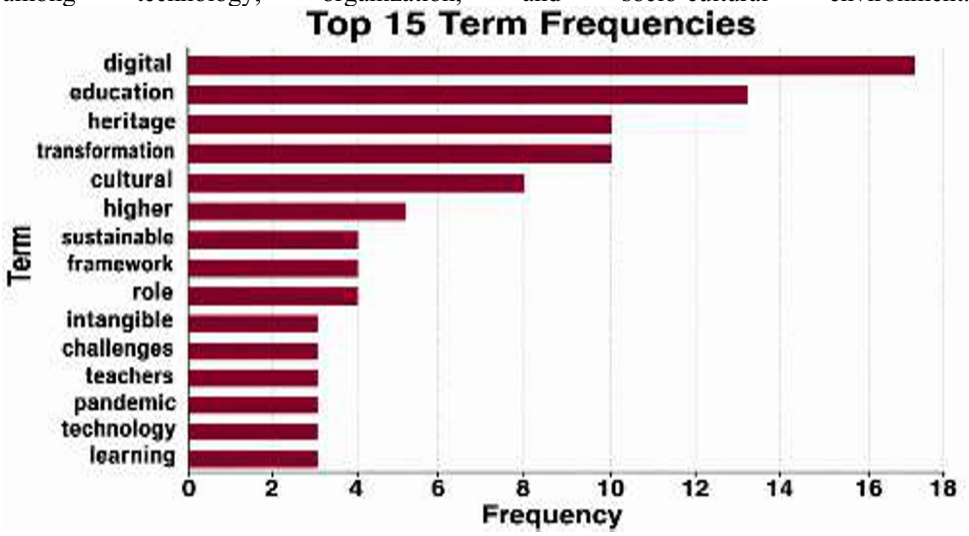


Figure 4. The most frequently used terms in School Organizational Transformation and Cultural Identity.

The authors' keywords reflect a change in research interests. Recent studies pay more attention to school management, governance, Sustainability, and the preservation of local cultural heritage. Earlier studies mainly viewed digitalization as a technological improvement, whereas more recent research considers how schools are managed, how change can be sustained, and how local culture can be protected.

The bibliometric results show how research in this field has developed over time. Publication trends indicate continued researcher interest, while citation patterns suggest the main ideas have become more established. The analysis of article titles and keywords also shows that the discussion has expanded beyond technical issues to include broader and more context-sensitive perspectives. This development provides the foundation for addressing RQ2.

4.2 How Do Global Digital Pressures and Local Cultural Preservation Shape School Organizational Transformation Through the Zoom Out–Zoom In Analytical Lens? (RQ2)

Contemporary scholarship shows that understanding of school organizational transformation has evolved from an emphasis on adopting technology to a focus on

governance, leadership, institutional capacity, and data-driven decision-making [3], [13]. Internal readiness plays a key role in how schools respond to external digital pressures. Al-Moaid & Almarhdi [14] support this, showing that institutions with a versatile skill set are in a much stronger position to make flexible adjustments. McCarthy et al. [15] state that educational reform depends on management styles, digital blueprints, and overall oversight instead of isolated hardware rollouts. Technical tools support institutional adjustment and long-term advancement. Technology enables organizational adaptation and long-term development [16], [17]. Policy guidelines encourage schools to strengthen institutional capacity and develop adaptive governance.

Many global policy models assume that administrative practices can be applied in the same way across different settings. The studies reviewed in this analysis suggest a different picture. Schools respond to these policies in different ways because they vary in staff preparedness, leadership, institutional capacity, and social context [17]. Global policies may provide broad strategic direction, but implementation depends on the conditions and decisions within each school.

STST outlines how workplace adjustment flows from ongoing internal communication rather than technical advancement alone. Tech-savvy management an improve institutional speed. Viewed through the Zoom Out–Zoom In analytical viewpoint, international digital trends influence school organizations through ongoing interactions between global policy expectations and local organizational responses [7].

School organizational transformation occurs within institutional contexts formed by specific social and cultural structures. Schools interpret and integrate digital policies inside learning activities in keeping with locally held values [11]. School leaders provide direction and coordination for technology integration aligned with institutional aims [7], [18]. Culture is a key driver of organizational responses to digital transformation; schools are guided by cultural values, educational traditions, and community characteristics [19], [20].

Recent evidence challenges the idea that maintaining traditions runs counter to digital progress; local heritage is often repurposed as an institutional asset. If uniform blueprints are deployed without attention to local conditions, severe rigidity can restrict cultural visibility. Local heritage serves as an important resource that reinforces public acceptance of structural adjustments. STST offers a unified viewpoint: structural reform happens through a continuous loop between machinery and social groups, allowing schools to evolve in ways that are technically sound, publicly approved, and respectful of local traditions [18].

Institutional change does not just happen; it builds through a continuous back-and-forth between big global goals and what actually happens in classrooms every day. In this process, schools act as meso-level socio-technical mediators, interpreting international digital policies and adapting them to local school contexts [12]. Ultimately, how a school manages this shift depends on its unique mix of internal skills, student backgrounds, cultural values, and the local community's expectations [21].

Foreign novelties and indigenous traditions coexist during structural updates. Long-term progress calls for a flexible equilibrium; an assortment of participants—including principals, instructors, youth, families, area residents, and regulators—all have stakes in

carrying out these digital plans. Inclusive oversight structures help maintain these reform efforts across all tiers of administration and assist [20], [22].

STST shows that organizational transformation is a continuous process in which technical and social systems evolve concurrently. School organizations act as meso-level socio-technical mediators, balancing global digital innovation with local cultural identity [5], [12]. Global pressures and local dynamics, through interactions, are the main drivers of school organizational change. Viewed through the Zoom Out–Zoom In analytical viewpoint, sustainable school organizational transformation depends on the ability to connect global digital innovation alongside local organizational and cultural realities [12].

4.3 How Can Cultural Identity Protection Mechanisms and Multi-Stakeholder Governance Foster Ethical and Sustainable School Transformation? (RQ3).

Digital technologies and supporting policy systems are not the only factors driving sustainable school organizational transformation. Organizational capacity is a constant theme shaping a school's ability to respond to a changing digital environment; empowerment is an organizational tool that strengthens adaptive capacity at the human, institutional, and cultural levels. Teachers are at the center of this, but an individual's digital skills are rarely enough to make long-term institutional changes stick. Technical knowledge leads to lasting transformation only when paired with flexible leaders, a shared workplace culture, and regulations that reward teachers for trying new things. AlNuaimi et al. [7] verify that forward-thinking administrative styles can boost a school's operational speed. Technical skills yield real improvement only when combined with broad institutional capabilities, flexible oversight, and helpful educational networks [23], [24].

Consulting stakeholders and engaging diverse schooling actors in the development and evaluation of digital transformation efforts improve organizational capacity. Teachers, school leaders, administration, students, and the community all improve organizational learning capacity, inter-institutional partnership, and participation in decision-making [20], [23]. Schmitz et al. [25] indicate that teachers are more willing to apply technology meaningfully when led by transformational leaders. Building capacity involves sustained partnerships among leadership, collaboration, governance, and individual members.

STST offers a socio-technical perspective: organizational capacity results from continuous adjustment among technical and social systems. Empowerment embeds an organization's capacity for development by introducing digital innovation into day-to-day operations. Organizations investing in collective learning, collaboration, and meaningful stakeholder engagement are well positioned to respond to digital innovation without undermining their identity [25].

Safeguarding local cultural identity during deep institutional shifts is rarely a solo effort; it demands active backing from multiple stakeholders. While giving schools more autonomy definitely sparks their capacity to adapt, real and lasting change cannot happen without a solid governance framework one that actually gets diverse actors working on the same page toward shared goals. Collaboration becomes stronger when governments, school leaders, teachers, families, and local communities work together. Governments set the

overall policy direction, school leaders coordinate change within schools, and teachers bring practical knowledge from everyday educational practice. At the same time, insights from community members, students, parents, and external partners keep this transformation deeply relevant. School leaders develop a culture embracing an open mindset for innovation [26]. Long-term continuity relies on joint effort and joint decision-making, which add to organizational legitimacy.

Governance helps schools balance cultural identity and technology. Digital innovation does not undermine cultural values when broad stakeholders are involved in decision-making, creating implementation momentum and improving legitimacy [4], [5], [20]. Schools that include local cultural values in institutional planning, implementation, and evaluation are better able to elicit stakeholder support.

According to STST, governance provides the mechanism through which technical innovation aligns with social values during organizational change. Rather than depending solely on technological investment, sustainable transformation happens when governance structures enable schools to integrate innovation alongside local cultural values and organizational practices.

Multi-stakeholder governance places school governance institutions between global digital pressures and local educational realities. Through collaboration, organizational learning, and safeguarding cultural identity, schools can respond to global transformation agendas while remaining coherent with existing school environments. School organizational transformation is a multidimensional, socio-technical process driven by the interplay of globalization pressures, organizational capabilities, collaborative governance, and local cultural settings. The governance-based socio-technical model illustrates the importance of institutional capacity to coordinate different actors and carry out culturally based organizational change across multiple system levels.

The thematic synthesis further suggests that sustainable school organizational transformation operates through an interconnected socio-technical mechanism rather than isolated organizational factors. The evidence indicates that school leadership initiates organizational change by establishing a collective digital vision and strengthening institutional capacity. Strengthened organizational capacity encourages broader stakeholder engagement, allowing teachers, students, parents, and local communities to participate actively in planning and implementing digital initiatives. This joint engagement reinforces multi-stakeholder governance, which facilitates aligning technological innovation with local cultural values and educational traditions. Such cultural alignment increases organizational legitimacy and stakeholder commitment, eventually supporting sustainable school organizational transformation. Viewed through the Zoom Out–Zoom In analytical lens, this mechanism clarifies how global digital pressures translate into locally meaningful organizational practices through schools' socio-technical mediation.

Overall, the findings show that schools respond better to global digital pressures when leadership, organizational capacity, stakeholder engagement, collaborative governance, and local cultural values reinforce one another throughout the transformation process.

5. Conclusion

Transforming a school's organization means much more than just adopting digital tools. This review shows that sustainable change relies on close interaction among leadership, internal capacity, shared governance, and deep-rooted local cultures. Although technology is a vital enabler, it works long-term only when schools seamlessly weave technical innovations into their specific social fabric.

Interestingly, schools rarely react to global digital pressures in the same way. These variations come down to individual leadership styles, institutional readiness, and unique community backgrounds. Through a Zoom Out–Zoom In analytical lens, we can see that digital transformation is never a one-way street of top-down policies. Instead, schools constantly interpret, bend, and refine these external demands to fit what they actually need on the ground.

This process is deeply interconnected. Strong leadership builds organizational capacity, which naturally draws in stakeholders and strengthens collaborative governance. Once this collaboration takes root, schools can adopt digital tools without erasing the cultural traditions that define them. Essentially, schools function as meso-level socio-technical mediators, bridging global tech movements with local realities.

For policymakers and school principals, this means throwing money at digital infrastructure alone will not trigger real institutional change. You must invest just as heavily in leadership development, organizational learning, and governance that respects local heritage. This dual focus gives schools the breathing room to evolve digitally while keeping their identity intact.

Naturally, this review has its limits. We analyzed only English-language articles indexed in Scopus from 2020 to 2026, so valuable insights from other languages and databases were left out. Moving forward, future research should jump into empirical studies across diverse socio-cultural landscapes. This will give us a much clearer, real-world picture of how schools reshape global agendas into meaningful local practices.

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