



## **Social and Technological Transformation: A Literature Review on Learning Challenges in Elementary Schools**

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### **ABSTRACT**

*The purpose of this study is to explore and understand the challenges faced in learning in primary schools in line with the ongoing social and technological transformation. This study uses a literature review method to explore the challenges of learning in primary schools in the context of social and technological transformation. This method involves collecting, assessing, and synthesizing relevant literature to gain a comprehensive understanding of the topic under study. By conducting a literature review, this study aims to identify patterns, findings, and gaps in the existing literature and provide valuable insights into the challenges and solutions in technology-based and social learning. The results of the study indicate that practical strategies and evidence-based recommendations to help educators overcome these challenges, such as inclusive approaches to reducing the digital divide and learning methodologies that utilize technology effectively. Thus, the results of this study are expected to provide comprehensive guidance to improve the quality of education in primary schools, as well as suggest policy and practice measures that can help education systems adapt to social and technological changes. The findings of the study will cover the impact of the digital divide, such as differences in access to technological devices and the internet between students, and how this affects equity in learning.*

**Kata Kunci:** *Transformation, Social and Technology, Literature Review.*

### **1. Introduction**

Rapid social and technological transformations in recent decades have had a significant impact on various aspects of life, including education in primary schools. Changes in social structures, such as urbanization, shifts in cultural

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values, and changes in family structures, have affected the learning environment (Thana & Hanipah, 2023). Children are now growing up in more complex and diverse social contexts than previous generations, creating new challenges for educators in adapting their teaching methods to remain relevant and effective (Anisa et al, 2022). On the other hand, advances in digital technology have revolutionized the way we communicate and access information, and education is no exception to this influence (Timotheou et al, 2023). Technologies such as computers, tablets, and educational software offer a variety of benefits, including easy access to information and interactive learning tools. However, the presence of technology also brings new challenges, such as the need to train digital skills and manage potential disruptions that may arise (Mihit, 2023).

The digital divide is one of the main challenges in technology-based learning (Jaya et al, 2023) (Salsabila et al, 2020) (Kaliongga et al, 2023). Unequal access to technological devices and the internet can widen the gap between students who have access and those who do not (Moscato & Embre, 2023). Addressing this gap is essential so that technology can be used effectively to support learning at all levels of society (Ihsan, 2023) (Oliveira et al, 2019). In addition, the curriculum in primary schools must also adapt to social and technological changes. Integrating digital literacy, problem-solving, and collaboration skills into the curriculum is becoming increasingly important (Lubis et al, 2022) (Luo et al, 2021) (Montiel & Gomez-Zermeño, 2021). Curricula must be updated to reflect the needs and skills relevant to the digital age, and to ensure that the content taught is relevant to the latest social and technological developments (Haryati et al, 2022).

Unequal access to technology not only impacts students' technical skills, but also impacts broader academic disparities (Muzdalifa, 2022). Students who have adequate devices and internet access are often able to engage in online learning, complete assignments more easily, and gain additional information that enriches their understanding (Suhandi & Robi'ah, 2022). Conversely, students who do not have access may be left behind, missing out on opportunities to fully participate in increasingly technology-dependent learning activities (Yamin & Syahrir, 2020). Addressing the digital divide is essential to effectively using technology to support learning across all levels of society (Burden et al, 2019). Efforts to provide more equitable access, such as device assistance programs and improvements to internet infrastructure, can help reduce these disparities (Audrin & Audrin, 2022). By creating equal opportunities for all students to access technology, we can ensure that the benefits of technology-based learning are enjoyed by all students, regardless of their economic background (Asad et al, 2021).

The role of teachers has also undergone significant changes in the digital era. In addition to teaching subjects, teachers must be able to integrate technology into learning, manage digital environments, and provide additional support for students who struggle with technology (Astini, 2020). Teachers need to continually update their skills to keep up with rapid technological developments (Pare & Sihotang, 2023). Innovative learning methods, such as project-based learning, flipped learning, and the use of digital learning tools, have emerged in response to technological transformation (Nabung & Edu, (2022). These methods offer a more dynamic and interactive approach to learning, but also require adjustments in the planning, implementation, and evaluation of the teaching-learning process (Rahayu & Iskandar, 2023).

Social and technological transformations also impact students' social and emotional well-being. Excessive exposure to technology can lead to stress, mental health problems, and negative impacts on social interactions. Therefore, it is important to consider how technology affects students' well-being and how schools can support their emotional health. Collaboration between schools and parents becomes increasingly important in the context of these changes. Parents need to be involved in the learning process and support the healthy use of technology at home. Schools must build strong partnerships with parents to ensure that technology is used effectively to support students' learning.

The literature review on the challenges of learning in primary schools in the context of social and technological transformations provides valuable insights into the impact of these changes on education. Social transformations, such as shifts in family values and structures, and rapid technological advances, have influenced the way children learn and interact in schools. By understanding how these factors interact, we can gain a clearer picture of the challenges educators face in creating effective and inclusive learning environments.

This research is important because it provides a deeper understanding of how social and technological changes affect the learning process in primary schools. These changes affect not only teaching methods, but also the way students interact with subject matter and each other. By identifying the challenges that arise from these changes, educators can be better prepared for the difficulties that may arise and adapt their approaches to meet the evolving needs of students. In addition, this literature review is also useful in developing strategies that can help educators take advantage of the opportunities offered by technology. Technology offers a variety of new tools and methods that can improve the quality of education, but it also requires adaptation and training to be implemented effectively. By designing appropriate strategies, educators can optimize the use of technology to support learning and overcome the challenges faced in a changing educational environment.

## **2. Methods**

This study uses a literature review method to explore the challenges of elementary school learning in the context of social and technological transformation. This method involves collecting, assessing, and synthesizing relevant literature to gain a comprehensive understanding of the topic under study (Arliman, 2020). By conducting a literature review, this study aims to identify patterns, findings, and gaps in the existing literature and provide valuable insights into the challenges and solutions in technology-based and social learning (Hernández et al, 2021). The data used in this study is information obtained from the literature that has been collected. This data includes findings, theories, and previous research results related to the challenges and solutions in elementary school learning related to social and technological transformation.

Research instruments in the literature review method include: 1) Bibliography: Collecting and compiling a list of references from various sources such as books, journal articles, research reports, and academic documents related to the topic under study, 2) Literature Quality Assessment Form: This tool is used to assess the quality and relevance of the sources reviewed based on criteria such as reliability, validity, and contribution to the research topic; 3)

Caption Card: To record the main findings, conclusions, and relevant information from each source reviewed.

Data collection techniques in literature review research include: 1) Literature Search: Using academic databases, digital libraries, and other reliable sources to search for literature relevant to the research topic, 2) Selection and Assessment: Filtering literature based on relevance, quality, and contribution to the topic, then assessing selected sources using a quality assessment form, 3) Recording and Documentation: Recording important information from each source, including citations, findings, and additional notes using caption cards or reference management software, 4) Data Organization: Organizing the collected data in a systematic form to facilitate analysis and preparation of research reports.

Data analysis techniques in the literature review method involve: 1) Grouping literature based on relevant themes or topics, such as technological challenges, social impacts, and learning strategies; 2) Compiling information from various sources to find patterns, similarities, and differences in research findings; 3) Evaluating the quality and strength of arguments presented in the literature, and identifying gaps and areas for further research; and 4) Compiling a summary and interpretation of the analysis results to provide comprehensive insights into learning challenges in the context of social and technological transformation.

### **3. Findings and Discussion**

#### **3.1 Findings**

The results of this study are expected to reveal key findings related to the challenges faced in learning in primary schools as a result of social and technological transformations. These findings will include an in-depth analysis of how the digital divide affects students' access to technological devices and the internet, and its impact on equity in learning experiences. In addition, this study will explore how social changes, such as shifts in family values and social structures, affect classroom dynamics, interactions between students and teachers, and students' motivation and engagement in learning. In addition to identifying challenges, the results of the study will also provide insights into effective strategies for addressing and overcoming these issues. This study aims to provide evidence-based recommendations on how educators and policymakers can optimize the use of technology in education, reduce the digital divide, and adapt teaching methods to the social changes that are occurring. Thus, the results of the study are expected to provide practical guidance for improving the quality and inclusiveness of education in primary schools in the midst of social and technological transformations.

#### **Identifying Specific Impacts of the Digital Divide**

Identifying the specific impacts of the digital divide in the context of learning challenges in primary schools is important to understanding how inequities in access to technology affect the quality of education. The digital divide can result in significant differences in learning experiences between students who have access to modern technology and those who do not. Literature studies show that this gap often exacerbates inequities in academic achievement and digital skills development, which are increasingly important in today's digital age.

First, one specific impact of the digital divide is students' lack of access to technology-based learning resources. Students who do not have access to digital devices such as computers or tablets are often hampered in engaging with learning materials that require technology, such as e-learning or educational applications. This can result in gaps in understanding the subject matter and the ability to participate in technology-based classroom activities.

Second, the digital divide also impacts students' digital skills development. In the digital age, skills such as software usage, basic programming, and information literacy are essential. Students who do not have access to modern technology may not have the same opportunities to develop these skills, which can ultimately affect their readiness to continue their education to a higher level or enter the job market.

Third, the impact of the digital divide is seen in differences in the quality of interactions between students and teachers. Technology enables richer forms of interaction, such as video conferencing or online forums. Students who do not have access to these technologies may miss out on opportunities to participate in discussions or consultations with teachers outside of school hours, limiting their understanding of the subject matter and reducing their engagement in the learning process.

Fourth, the digital divide can also impact students' motivation and engagement in learning. Access to technology is often associated with new, engaging and interactive ways to learn, such as gamification or simulations. Students who do not have access to these tools may feel less motivated and engaged in their learning, which can impact their overall academic achievement.

Fifth, the digital divide can exacerbate existing issues related to social and economic disparities. Students from disadvantaged backgrounds may not only have less access to technology but also less support at home to use it effectively. This can magnify existing gaps in their educational attainment and future opportunities.

Sixth, the impact of the digital divide also includes challenges in training and supporting teachers. Teachers who do not have access to adequate technology training may not be fully prepared to leverage digital tools in their teaching. This can limit their ability to implement effective and innovative teaching methods that can benefit all students.

Seventh, the impact of the digital divide can be seen in the difficulty in monitoring and assessing student progress. Technology provides tools that make it easier for teachers to track student progress, provide quick feedback, and identify areas that need more attention. Without access to technology, teachers may struggle to carry out these functions effectively, which can impact the quality of instruction and support provided to students.

Eighth, overall, the digital divide highlights the need for comprehensive solutions to ensure that all students, regardless of their background, have an equal opportunity to leverage technology in their learning. This includes efforts to increase access to devices, provide training for teachers, and create policies that support the use of technology in education. By addressing this gap, we can help create a more equitable and effective learning environment for all students.

## **Social Changes Affecting the Learning Environment**

Social changes have a significant impact on the learning environment in primary schools, and understanding this is important to adapt educational practices to meet current needs. The literature review shows that changes in family structure, technology, economy, and culture directly affect the dynamics of learning and how students interact in the school environment.

First, changes in family structure, such as the increase in single-family families or changes in parental work patterns, affect the learning environment in primary schools. Children from families with irregular work schedules or from single-family families may face additional challenges in terms of home support and parental involvement in their education. This can impact the consistency and quality of learning they receive in school.

Second, advances in information and communication technology have brought about major changes in the way learning is conducted. With easy access to the internet and digital devices, students can now learn outside the classroom and access a variety of educational resources online. However, this also introduces new challenges, such as the need to teach digital literacy skills and address distractions caused by personal device use during school hours.

Third, economic changes also impact the learning environment. Economic instability or socio-economic disparities can affect the quality of education received by students. Schools in poorer economic areas may have limited resources, which affects the facilities and learning materials available to students. This can affect the quality of the learning experience and student achievement.

Fourth, changing social and cultural dynamics also affect the learning environment. Increasing cultural diversity in primary schools requires teaching approaches that are more inclusive and sensitive to the diverse backgrounds of students. Changes in social norms and cultural values can affect interactions between students, as well as between students and teachers, and require adjustments in teaching strategies to create a harmonious and supportive environment.

Fifth, shifts in educational policies and curricula designed to respond to social change can affect the way learning is conducted. Educational reforms often involve adjustments in curriculum standards, assessments, and teaching methods that seek to reflect changes in societal needs and expectations. This can affect how subject matter is delivered and understood by students.

Sixth, changes in the way parents are involved in their children's education also affect the learning environment. With the increasingly busy pace of modern life, there is an increasing tendency for parents to be less involved in school activities or in supporting their children's learning at home. This can affect student motivation and performance, as well as the relationship between school and home.

Seventh, the challenge of adapting the learning environment to social change is also seen in the need to update teaching and evaluation methods. Effective education requires innovation in teaching to include the latest developments in educational psychology, technology, and pedagogy. Therefore, educators must continuously adapt and learn to meet the new demands that arise from social change.

Eighth, overall, the social changes that affect the learning environment indicate the need for an adaptive and responsive approach to education. To meet these challenges, schools must create strategies that take into account the social changes that are occurring, ensuring that all students have equal access and the support needed to succeed in a dynamic learning environment. Through appropriate adaptation, education can continue to evolve to meet the changing needs and expectations of society.

### **Teachers' Challenges in Integrating Technology into the Curriculum**

Integrating technology into the curriculum in elementary schools is a significant challenge faced by many teachers today. A review of the literature on learning challenges suggests that while technology offers many opportunities to enhance the learning experience, there are a number of barriers that educators must overcome to maximize the benefits of technology in education.

First, one of the main challenges is the lack of adequate training for teachers in the use of technology. Many teachers may feel unprepared or lack confidence in integrating digital tools into their curriculum due to a lack of training or professional support. Without adequate training, they may struggle to use technology effectively in their teaching and to deal with technical issues that arise.

Second, the limited technology infrastructure in schools is also a significant barrier. Many schools, especially those in remote areas or with limited budgets, may not have adequate hardware or internet connections. These limitations can limit teachers' ability to incorporate technology into their teaching and provide consistent learning experiences for all students.

Third, the challenge of selecting and integrating appropriate technology tools into the curriculum is also often faced by teachers. With so many educational software and applications available, teachers must be able to determine which tools best suit their learning goals. This requires a deep understanding of the various tools and how they can be effectively integrated into teaching materials.

Fourth, classroom management issues related to the use of technology are also a challenge. Technology can introduce new distractions into the classroom, such as students not focusing or using devices for non-educational purposes. Teachers need to develop strategies to ensure that technology is used productively and to manage student behavior when using digital tools.

Fifth, issues of access and the digital divide between students must also be considered. Not all students have the same access to devices and the internet at home. Teachers must find ways to ensure that the technology used in the classroom does not exacerbate existing gaps and that all students are equally engaged in learning, regardless of their access conditions at home.

Sixth, challenges in measuring the effectiveness of technology in learning are also a concern. Teachers often face difficulties in assessing the impact of technology on student achievement and how technology affects learning outcomes. Effective assessment requires methods that can accurately evaluate the contribution of technology to student development.

Seventh, there are also concerns about the privacy and security of data from students using technology. With the increasing use of digital tools, there is

a need to protect students' personal data and ensure that the tools used comply with relevant security regulations. Teachers must understand and manage these risks to protect students' sensitive information.

Eighth, overall, the challenges in integrating technology into the curriculum point to the need for greater support for teachers in the form of training, adequate infrastructure, and effective management strategies. By addressing these challenges, technology can be more effectively integrated into the curriculum, providing maximum benefit to students' learning experiences and helping to prepare them for the evolving digital world.

### **Effective Strategies To Overcome Challenges**

Integrating technology into the elementary school curriculum offers great potential to enhance the learning experience, but teachers often face challenges in implementing technology effectively. A review of the literature on learning challenges identified several key barriers that educators must overcome to maximize the benefits of technology in education.

First, lack of training and professional development is often a major barrier. Many teachers do not receive adequate training in the use of educational technology. Without adequate training, they may feel unsure about integrating digital tools into their curriculum, which can impact the effectiveness of technology use in learning.

Second, limited technology infrastructure in schools is a significant challenge. Many schools, especially in less developed areas or with limited budgets, struggle to provide adequate hardware and stable internet connections. These limitations can limit teachers' ability to use technology effectively and make it difficult to implement learning activities that rely on digital tools.

Third, selecting and integrating appropriate technology into the curriculum is a complex challenge. With so many tools and applications available, teachers must choose the technology that best fits their learning goals. This process requires a deep understanding of the various technology options and how they can be effectively integrated with existing teaching materials.

Fourth, classroom management in the context of technology use can be challenging. Technology can introduce new distractions into the classroom, such as students who are not focused or using devices for non-educational purposes. Teachers need to develop strategies to manage technology use and ensure that students remain engaged in productive learning activities.

Fifth, the digital divide among students is also a significant challenge. Not all students have the same access to devices and internet connections at home, which can affect their engagement in technology-based activities. Teachers must find ways to address these differences in access and ensure that all students have equal opportunities to utilize technology in their learning.

Sixth, measuring the effectiveness of technology in the learning process is an additional challenge. Teachers often struggle to assess the impact of technology on students' academic achievement. To ensure that technology is delivering the intended benefits, assessment methods are needed that can effectively evaluate the contribution of technology to learning outcomes.

Seventh, student data privacy and security are important concerns in technology integration. With the increasing use of digital tools, protecting

students' personal data must be a priority. Teachers need to understand and comply with relevant data security regulations to protect students' sensitive information from potential risks.

Eighth, overall, the challenges in integrating technology into the curriculum point to the need for greater support for teachers. This includes increased training, development of adequate infrastructure, and effective classroom management strategies. By addressing these challenges, technology can be used more effectively in the curriculum, providing maximum benefit to students' learning experiences and preparing them for an increasingly digital world.

### **3.2 Discussion**

#### **Identifying Specific Impacts of the Digital Divide**

The digital divide in elementary schools is an increasingly pressing issue amidst rapid technological transformation. The literature review shows that specific impacts of the digital divide include significant differences in access to and use of technology between students from different economic backgrounds. Students from low-resource families often experience limited access to devices and stable internet connections. This results in their inability to take advantage of the many online learning platforms that are increasingly common in the classroom. As a result, they lag behind in learning compared to their peers with better access, hindering their development of essential skills and knowledge. In addition, the digital divide also impacts students' digital literacy skills, which are essential for success in the modern era. Studies show that students who do not have adequate access to technology often lack the skills to use digital tools, which impacts their ability to complete schoolwork, collaborate on online projects, and access additional learning materials. This not only widens the gap between students in terms of academic achievement but also affects their readiness to adapt to the demands of an increasingly digital workforce. Addressing the digital divide is therefore a crucial step to ensure that all students have equal opportunities in their education and skills development.

#### **Social Changes Affecting the Learning Environment**

Rapid social changes in modern society have had a significant impact on the learning environment in primary schools. The literature review identified that shifts in family structures, such as the increasing number of single-parent families or those with both parents working, are affecting patterns of parental support and involvement in children's education. These changes often result in less time and resources available to support children with learning activities at home, which in turn can affect their academic performance and social development. In addition, rapid urbanization has created additional challenges, such as increasing class sizes and inequalities in access to quality educational facilities. In addition to these factors, globalization and technological advancements have brought about major changes in the way students learn and interact. Increasingly advanced technology is disrupting traditional learning methods, with the increasing use of digital tools and online learning platforms in the classroom. While this may increase access to educational resources, it also places additional pressure on schools to modernize their infrastructure and curriculum, often facing challenges in terms of teacher training and effective technology integration. These social changes require adaptation from various parties, including educators, policy makers, and communities, to ensure that

learning environments remain relevant and effective in facing these new challenges.

### **Teacher Challenges in Integrating Technology into the Curriculum**

The integration of technology into the primary school curriculum poses significant challenges for teachers. The literature review shows that one of the main challenges is the lack of adequate training and professional support. Many teachers feel unprepared or under-skilled in using modern technology, which hinders their ability to effectively integrate digital tools into their learning. In addition, existing curricula are often inadequate to systematically incorporate technology elements, leaving teachers struggling to adapt teaching materials to suit technological needs. Limited training can result in suboptimal use of technology, which ultimately impacts students' learning experiences. In addition to training challenges, infrastructure constraints are also a major issue. Many schools, especially in resource-limited areas, face limited access to the necessary hardware, stable internet connections, and appropriate software. This makes technology integration a difficult and often inconsistent process. Teachers must navigate these challenges while attempting to leverage technology to enhance learning. The literature review shows that without adequate infrastructure support, technology integration efforts tend to be hampered, reducing the potential benefits of technology in improving the quality of education and teaching in primary schools.

### **Effective Strategies to Address Challenges**

To address the challenges of learning in primary schools, the literature review shows that the implementation of effective strategies is essential to achieve optimal results. One key strategy is to enhance professional training for teachers, involving workshops, seminars, and courses that focus on the use of technology and modern learning methods. This ongoing, needs-based training can improve teachers' skills in integrating technology into the curriculum, as well as help them overcome challenges that may arise in the teaching process. In addition, support from school administration and technology providers in the form of adequate facilities and access to additional resources is also key to ensuring that teachers can utilize technology effectively. Another strategy is to involve the community and parents in the learning process to support students who may face challenges at home. Parental engagement programs, such as technology training sessions and home learning support, can help bridge the gap and provide additional support for students. In addition, developing a flexible and responsive curriculum to technological changes can ensure that teaching materials remain relevant and up-to-date. Collaboration between schools, communities, and educational institutions can create more adaptive and effective learning environments, address existing challenges, and facilitate quality learning for all students.

## **4. Conclusion**

Conclusions in this study are: The literature review on learning challenges in primary schools identified several specific impacts of the digital divide, social change, and challenges in technology integration. The digital divide results in significant differences in access to and use of technology between students from different economic backgrounds, which often leads to lags in academic achievement and digital literacy skills. In addition, social changes such as shifts

in family structures and urbanization impact parental support and the quality of educational facilities, adding pressure to the learning environment in primary schools. These changes affect student and teacher engagement in the learning process, often resulting in inequities in the educational experiences received by students. In facing these challenges, teachers often face issues related to lack of professional training and support and limited technological infrastructure. To address these challenges, effective strategies identified in the literature include improving teacher training, providing technical support, and developing flexible curricula. Involving communities and parents in the educational process and ensuring equitable access to technology are important steps to reduce disparities and improve the quality of learning. By implementing these strategies, it is hoped that primary schools can overcome existing challenges and create more inclusive and adaptive learning environments for all students.

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