

Adaptive School Management in Facing Technological Disruption in Elementary Schools in Mataram

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Abstract: *This study aims to analyze Adaptive School Management in Facing Technological Disruption in Elementary Schools in Mataram. The focus of this study is to examine the implementation of adaptive school management, the principal's strategy in managing digital transformation, supporting and inhibiting factors, and their implications for improving the quality of education. This study uses a qualitative approach with a case study method. Data were collected through in-depth interviews, observation, and documentation, then analyzed using an interactive model that includes data reduction, data presentation, and drawing conclusions. The results show that the implementation of adaptive school management in elementary schools in Mataram City is carried out through the transformation of the principal's adaptive leadership, digitalization of school administration, strengthening an innovative organizational culture, improving teachers' digital competence, and collaboration with educational stakeholders. The principal's strategy in managing change is carried out through digital vision-based leadership, data-driven decision-making, and strengthening human resource capacity. The main supporting factors include education policy, infrastructure support, and teacher competence, while inhibiting factors include the digital literacy gap and resistance to change. The implications of this study indicate that adaptive school management can improve the effectiveness of governance, the quality of learning, and the quality of education sustainably in the era of technological disruption. This study concludes that adaptive school management is an important strategic approach in increasing the adaptability of elementary schools to technological change.*

Keywords: *Adaptive School Management, Technological Disruption, Elementary Schools, Educational Leadership, Educational Quality.*

Introduction

The development of digital technology in the era of the Industrial Revolution 4.0 and Society 5.0 has brought about major changes in various sectors of life, including education. Technology no longer functions merely as a learning aid but has become an integral part of modern education management systems. Schools are required to adapt to rapid changes, ranging from the use of digital platforms, technology-based administration systems, online and hybrid learning, to strengthening digital literacy for teachers and students. This situation places educational institutions in a situation of technological disruption that demands continuous organizational adaptability. Elementary schools, as the foundation of formal education, have a crucial responsibility in preparing students to face future challenges. However, in practice, many elementary schools still face various limitations in responding to technological changes. These problems include human resource readiness, limited teacher digital competency, suboptimal technology-based school governance, minimal managerial innovation, and disparities in digital facilities between schools. This situation means that the education management process is unable to fully keep up with the dynamics of rapidly evolving social and technological change.

On the other hand, technological disruption also presents new challenges for elementary school management. Principals are not only required to be able to carry out administrative functions but also to possess adaptive leadership skills in managing organizational change. Schools require a management system that is flexible, innovative, collaborative, and responsive to technological developments to maintain

educational quality. In this context, the concept of Adaptive School Management is relevant because it emphasizes the school organization's ability to adapt to environmental changes through strengthened leadership, innovation, dynamic decision-making, and the development of an adaptive organizational culture. This phenomenon of change is also occurring in elementary schools in Mataram. As one of the educational cities in West Nusa Tenggara Province, Mataram City is experiencing rapid development in educational technology. Various educational digitalization programs have begun to be implemented, such as the use of school administration applications, digital learning platforms, and the implementation of the Independent Learning policy. However, the level of readiness of each elementary school to face this transformation varies. Some schools have been able to adapt quickly through innovations in school management, while others still face obstacles in aspects of leadership, infrastructure, organizational culture, and teacher competency.

These conditions indicate that a school's adaptability is not solely determined by the availability of technology but also by the management patterns implemented by the school. Schools with adaptive leadership tend to be more capable of creating innovation, building collaboration among school members, and developing a work culture open to change. Conversely, schools that still use conventional management patterns tend to struggle with the dynamics of digital transformation. Therefore, an in-depth study is needed to examine how elementary school management adapts to technological disruption, particularly within the socio-cultural context of education in Mataram City. Research on educational management to date has generally focused more on aspects of principal leadership, educational quality management, and the partial implementation of learning technology. Meanwhile, studies specifically discussing Adaptive School Management in the face of technological disruption at the elementary school level are still relatively limited, particularly those using qualitative approaches that explore experiences, strategies, organizational culture, and the dynamics of school adaptation in depth. This approach is crucial for understanding how schools develop adaptive mechanisms to address complex and ongoing technological change.

Rapid technological change has given rise to various perspectives on how educational institutions must adapt to the digital era. Experts emphasize that school management can no longer be carried out conventionally but must be adaptive, innovative, and responsive to changes in the educational environment. According to Ruloff and Petko (2021), digital transformation in schools is heavily influenced by the principal's leadership style. They explain that principals who implement transformational leadership are better able to accelerate digital change than those who employ transactional leadership. The primary focus of adaptive leadership is not simply on providing technology but on the ability to build a school culture that supports innovation and sustainable change.

This view aligns with Fajri Dwiayama's (2025) opinion, which states that school-based management in the era of digital transformation must be reconstructed through the integration of adaptive leadership and educational technology. He emphasized that schools need to implement more flexible, collaborative, and data-driven governance to effectively respond to the dynamics of technological change. From this perspective, schools are not merely administrative institutions but also learning organizations that continue to evolve with the changing times. Meanwhile, Sudiansyah (2024) views adaptive schools as part of the transformation of educational quality towards learning organizations based on Industry 5.0. According to him, a school's success in facing technological disruption is influenced by the synergy between transformational leadership, organizational culture, adaptive curriculum, and technology integration. He emphasized that schools that are able to build an innovative culture will be better prepared to face global change than schools that still maintain traditional bureaucratic patterns.

Furthermore, Anwar et al. (2025) explained that principals in the digital era must act as visionary, adaptive, and transformational digital leaders. According to them, digital leadership is not only related to the use of technology, but also the ability to integrate technology into school management systems,

decision-making, and the development of educational human resources. Thus, a school's adaptability is largely determined by the quality of the principal's digital leadership. In contrast to previous opinions that emphasized the leadership aspect, Gaffar et al.'s (2025) research observed that adaptive educational management must be built through synergy between digital leadership, data-driven planning, and collaboration with all educational stakeholders. They emphasized that an adaptive school is one that is able to create an educational system that is flexible, responsive to change, and remains oriented towards student welfare.

Furthermore, research published in *Computers in Human Behavior* in 2020 emphasized that the success of a school's digital transformation is influenced by the principal's ability to build a digital culture within the school environment. The principal's strategic leadership is considered more effective than a bureaucratic approach in encouraging the integration of educational technology. This research also shows that technical support, organizational culture, and openness to innovation are important factors in creating adaptive schools in the digital era. Based on these conditions, this research is important to conduct in-depth understanding how elementary schools in Mataram City develop adaptive management in the face of technological disruption. This research is expected to provide theoretical contributions to the development of adaptive education management studies, while also providing practical contributions for schools, local governments, and education policymakers in designing more innovative, flexible, and sustainable school management strategies in the era of digital transformation.

Formulation of the problem

1. What is the form of application of adaptive school management in facing technological disruption in elementary schools in Mataram?
2. What is the principal's strategy in managing digital change and transformation in elementary schools in Mataram?
3. What are the supporting and inhibiting factors for adaptive school management in facing technological disruption in elementary schools in Mataram?
4. What are the implications of adaptive school management for improving the quality of education in elementary schools in Mataram?

Relevant Concepts and Theories

2.1 Educational Management

Educational management is the process of effectively and efficiently managing all educational resources to achieve educational goals. In the development of modern education, the concept of educational management focuses not only on school administration but also on the ability of educational organizations to face dynamic environmental changes. According to Bush (2020), educational management is the process of decision-making and management of educational organizations oriented towards improving school quality through leadership, organizational culture, and the effectiveness of the educational system. Bush emphasized that modern schools require a flexible and adaptive management approach to be able to respond quickly to social and technological changes.

This opinion is reinforced by Hallinger (2021), who stated that educational management in the digital era must be able to integrate instructional leadership, organizational development, and technological innovation within the school management system. According to him, schools can no longer use traditional, bureaucratic management patterns but must instead move towards becoming learning organizations. Meanwhile, DwiYama (2025) explained that educational management in the era of digital transformation demands collaborative, technology-based, and change-responsive school governance. Schools are required to develop management systems that support learning innovation, strengthen digital literacy, and increase the capacity of educational human resources. Based on these various opinions, it can be understood that

educational management is the process of managing an educational organization that emphasizes not only administrative aspects but also the school's ability to adapt to the ever-changing educational environment.

2.2 Adaptive School Management

The concept of Adaptive School Management emerged in response to global changes affecting the education system, particularly the development of digital technology. This concept emphasizes the ability of schools to adapt to change through adaptive leadership, organizational innovation, and flexible school management. According to Heifetz, Grashow, and Linsky (2019), adaptive management is an organization's ability to face complex changes through learning, innovation, and decision-making processes that are responsive to environmental challenges. In the educational context, schools must be able to build organizational systems that are open to change and capable of creating innovative solutions to various educational challenges. Furthermore, Ruloff and Petko (2021) explain that adaptive school management is closely related to the leadership of the principal in driving digital transformation in the school environment. Adaptive principals are able to create an organizational culture that supports technological innovation and collaboration among school members. They emphasize that the success of school transformation is greatly influenced by the ability of school leaders to manage change strategically.

A similar opinion was expressed by Sudiansyah (2024), who stated that adaptive schools are educational organizations that exhibit high flexibility in facing technological and social changes. According to him, adaptive school management focuses not only on the use of technology but also on strengthening organizational culture, collaboration, and developing educational human resources. Meanwhile, Gaffar et al. (2025) explained that adaptive school management in the digital era must be built through synergy between digital leadership, data-driven management, and the participation of all educational stakeholders. Adaptive schools will be better able to maintain educational quality amidst technological disruption. Thus, adaptive school management can be understood as a school management approach that emphasizes the ability of educational organizations to adapt to change through adaptive leadership, innovation, collaboration, and strengthening organizational culture.

2.3 Technological Disruption in Education

Technological disruption is a major change resulting from the development of digital technology that alters the way people work, learn, and interact. In education, technological disruption brings changes to learning systems, school administration, educational communication, and even school leadership patterns. According to Schwab (2020), the Industrial Revolution 4.0 has created a major transformation through the integration of digital technology, artificial intelligence, the internet of things, and automation in various sectors of life, including education. This situation requires schools to be able to adapt to technological developments to remain relevant to the needs of the times.

Furthermore, Fullan and Quinn (2021) explain that technological disruption in education is not only related to the use of digital devices, but also a shift in educational paradigms toward a more flexible, collaborative, and creativity-based learning system. Schools must be able to build a culture of innovation to cope with rapid changes. According to Anwar et al. (2025), technological disruption has shifted school management patterns from conventional systems to digital governance. Principals are required to possess digital leadership skills to integrate technology into school governance, decision-making, and improve educational quality.

Furthermore, research in Computers in Human Behavior (2020) shows that a school's success in facing technological disruption is influenced by organizational readiness, the school's digital culture, and leadership skills in managing educational transformation. Schools with an innovative culture tend to be better prepared for change than those with a bureaucratic culture. Based on these various perspectives,

technological disruption can be understood as a major change resulting from the development of digital technology that requires schools to transform their educational management systems adaptively and innovatively.

2.4 Elementary Schools as Adaptive Educational Organizations

Elementary schools are the primary foundation of the formal education system, playing a strategic role in shaping students' character, literacy skills, and basic competencies. In the digital era, elementary schools are required to be adaptive educational organizations to technological and social changes. According to Harris (2020), adaptive schools are schools capable of developing a collaborative culture, distributive leadership, and learning innovation to address changes in the educational environment. Elementary schools need to build flexible organizational systems to sustainably improve the quality of education. Furthermore, the OECD (2021) explains that elementary schools in the digital era must be able to develop an educational ecosystem that supports creativity, digital literacy, and technology-based learning. Strengthening teacher capacity and school leadership is a crucial factor in creating adaptive schools.

According to Mulyasa (2022), principals play a crucial role in creating innovative and adaptive elementary schools by strengthening a culture of quality, developing teacher professionalism, and implementing technology-based school management. Schools that are able to adapt to change will be better prepared to face future educational challenges. Therefore, elementary schools, as adaptive educational organizations, are educational institutions capable of fostering an innovative culture, adaptive leadership, and a management system that is responsive to technological developments and social change.

Implementation Method

3.1 Research Approach and Type

This research uses a qualitative approach with a case study. The qualitative approach was chosen because this study aims to deeply understand the phenomenon of adaptive school management in the face of technological disruption in elementary schools in Mataram. This approach allows researchers to explore experiences, strategies, organizational behavior, and the dynamics of school management naturally based on the perspectives of research informants. According to Creswell and Poth (2020), qualitative research is an approach used to explore and understand the meanings of individuals or groups regarding a social phenomenon. Qualitative research emphasizes the process of interpretation, meaning-making, and in-depth understanding of social realities that occur in the field. Meanwhile, Yin (2021) explains that a case study is a research method used to deeply understand contemporary phenomena in a real-life context. Case studies are highly relevant when researchers want to comprehensively examine organizational processes, strategies, and dynamics. Based on this opinion, this study uses a case study because the focus of the research lies in the process of adaptive school management in the face of technological change that occurs in the real environment of elementary schools in Mataram City.

3.2 Research Location

This research was conducted at several elementary schools in Mataram. The research locations were selected based on the consideration that Mataram City is one of the educational areas currently undergoing digital transformation in school management and learning systems.

The selected schools are elementary schools that have implemented various forms of digital innovation in school management, such as the use of digital learning platforms, technology-based administration, and the development of digital literacy for teachers and students.

3.3 Research Subjects and Informants

The research subjects were those directly involved in the adaptive school management process in elementary schools. Informants were selected using purposive sampling because the researchers chose informants who were considered to have a deep understanding of the research phenomenon.

According to Patton (2020), purposive sampling is a technique for selecting informants based on certain considerations so that the data obtained is more in-depth and relevant to the research objectives.

The informants in this study include:

1. Elementary school principal
2. Vice principal
3. Primary school teachers
4. School operator
5. School supervisor
6. Parents of students

These informants were selected because they had direct involvement in the school management process and implementation of educational technology.

3.4 Data Collection Techniques

Data collection techniques in this study were carried out through observation, in-depth interviews, and documentation.

1. Observation

Observations were conducted to directly observe school management processes, the use of educational technology, the school's organizational culture, and interactions among school members in the face of digital change. According to Merriam and Tisdell (2019), observation in qualitative research aims to understand behavior, activities, and social situations directly in a natural context.

2. In-depth Interview

Semi-structured interviews were conducted to obtain in-depth information regarding adaptive school management strategies, principal leadership, obstacles, and school efforts in facing technological disruption. According to Brinkmann and Kvale (2019), qualitative interviews are a process of gaining meaning through in-depth and reflective interactions between researchers and informants.

3. Documentation

Documentation was used to supplement research data in the form of school documents, school digitization programs, activity photos, administrative reports, and various archives relevant to the research focus. According to Sugiyono (2022), documentation is a data source used to strengthen observation and interview results in qualitative research.

3.5 Data Analysis Techniques

The data analysis in this study used the interactive model of Miles, Huberman, and Saldaña. Analysis was conducted continuously from data collection until the study was completed. According to Miles, Huberman, and Saldaña (2020), qualitative data analysis consists of three main stages:

1. Data Reduction

Researchers carry out the process of selecting, simplifying, and grouping data that is relevant to the research focus.

2. Data Presentation

Data is arranged in the form of narratives, matrices, and systematic descriptions to make it easier for researchers to understand patterns and relationships between data.

3. Conclusion Drawing and Verification

Researchers interpret data to find meaning, patterns, and valid research conclusions.

Data analysis was conducted in depth to understand the form of adaptive school management in facing technological disruption in elementary schools in Mataram City.

3.6 Data Validity Test

Data validity in this study was achieved through source triangulation, technical triangulation, and time triangulation. According to Lincoln and Guba (2020), validity in qualitative research can be achieved through credibility, transferability, dependability, and confirmability.

The steps for testing data validity in this study include:

1. Source Triangulation

Comparing data from principals, teachers, school operators, and parents of students.

2. Engineering Triangulation

Comparing the results of observations, interviews, and documentation.

3. Member Check

The researcher reconfirmed with the informant to ensure the suitability of the research data.

4. Audit Trail

Researchers keep records of the entire research process and data documentation as a form of scientific accountability.

Results and Discussion

The application of adaptive school management in facing technological disruption in elementary schools in Mataram

The implementation of adaptive school management in elementary schools in Mataram City represents a response by educational institutions to the rapid technological changes in the digital era. Technological disruption has transformed various aspects of school management, from educational administration and learning systems to organizational communication and managerial decision-making. Under these conditions, schools are required to have adaptive capabilities to maintain educational quality and remain relevant to current developments. The study found that the implementation of adaptive school management in elementary schools in Mataram City involves strengthening the adaptive leadership of principals, digital transformation of school administration, developing an innovative organizational culture, enhancing teachers' digital competencies, and strengthening collaboration between schools and educational stakeholders.

One key form of adaptive school management implementation is seen in the principal's leadership, which is more flexible and responsive to technological changes. Principals no longer merely perform administrative functions but also act as digital leaders capable of driving innovation and organizational change. Principals strive to build a work culture open to the use of technology in the learning process and school management. According to Ruloff and Petko (2021), the principal's adaptive leadership plays a crucial role in the success of a school's digital transformation. Principals who are able to create a vision for change and a culture of innovation will be more successful in building educational organizations that are adaptive to technological developments. This is evident in several elementary schools in Mataram City that have begun implementing digital-based school management systems through the use of administrative applications, online learning platforms, and technology-based school communication systems.

Furthermore, the implementation of adaptive school management is also evident in the transformation of school administration toward a digital system. Schools are beginning to utilize technology for student data management, attendance management, assessments, teacher administration, and communication with parents. Digitizing school administration helps improve the effectiveness and efficiency of school management. According to DwiYama (2025), digital-based school management is part of the transformation of modern education governance, which demands more flexible, agile, and data-driven schools. Schools that are able to integrate technology into their administrative systems will find it easier to make decisions and improve the quality of educational services.

Another form of adaptation is seen in the development of a more innovative and collaborative school organizational culture. Schools strive to build a work environment that supports teacher creativity in utilizing learning technology. Teachers are encouraged to use digital media, interactive learning platforms, and develop more innovative teaching methods tailored to the characteristics of elementary school students. According to Sudiansyah (2024), adaptive schools are educational organizations capable of building an innovative and collaborative culture in the face of technological change. An organizational culture open to innovation is a crucial factor in the success of educational transformation in the digital era.

Improving teachers' digital competencies is also a crucial part of implementing adaptive school management. Schools are gradually providing training, mentoring, and strengthening digital literacy for educators to enable them to adapt to developments in educational technology. Teachers are not only required to master learning materials but also to be able to use technology as an effective and engaging learning medium. According to the OECD (2021), strengthening teachers' digital capacity is a key element in creating schools that are adaptive to educational transformation. Teachers with high digital competencies will be better able to create innovative learning and increase student engagement in the learning process.

On the other hand, the implementation of adaptive school management is also carried out through strengthening collaboration between schools, parents, and educational stakeholders. Schools utilize communication technologies such as digital groups, school applications, and social media to strengthen relationships with parents. This collaboration helps schools support the learning process and supervise students more effectively. According to Gaffar et al. (2025), adaptive educational management in the digital era must be built through synergy between school leadership, stakeholder participation, and the integration of educational technology. Schools that are able to build strong collaborations will be better prepared to face the changes and challenges of modern education.

However, the implementation of adaptive school management in elementary schools in Mataram City still faces several obstacles, such as limited technological resources, differences in teachers' digital skills, and resistance to change among some educators. Furthermore, not all schools have adequate digital facilities, so the transformation process is gradual. Nevertheless, elementary schools in Mataram City have generally demonstrated a good level of adaptation in the face of technological disruption. The implementation of adaptive school management is a strategic step in creating schools that are more innovative, flexible, and responsive to educational changes in the digital era. By strengthening adaptive leadership, an innovative organizational culture, digital transformation, and improving human resource competencies, elementary schools in Mataram City are expected to be able to continuously improve the quality of education amidst the dynamics of technological development.

Principal's strategy in managing digital change and transformation in elementary schools in Mataram

The digital transformation in education has brought significant changes to the management system of elementary schools. Principals, as leaders of educational institutions, play a strategic role in directing, managing, and ensuring the effective implementation of the change process. In the context of elementary

schools in Mataram City, principals' strategies for navigating digital transformation focus not only on the use of technology but also on changing organizational culture, strengthening human resources, and improving the overall quality of education. The study found that principals' strategies for managing change and digital transformation include strengthening adaptive leadership, developing teachers' digital competencies, implementing technology-based management systems, building an innovative culture, and strengthening collaboration with educational stakeholders.

One of the principal's primary strategies is implementing adaptive leadership in the school management process. Principals strive to develop a vision for change that encourages the entire school community to be open to technological developments. Principals serve not only as administrators but also as agents of change, guiding the transformation of the school organization toward a more modern and flexible system. According to Heifetz, Grashow, and Linsky (2019), adaptive leadership is a leader's ability to help an organization navigate complex changes through innovation, collaboration, and strengthening organizational capacity. Adaptive principals are able to create a work environment that supports continuous learning and change.

In practice, school principals in Mataram City have begun implementing various digital innovations in school management, such as the use of school administration applications, digital attendance systems, online learning platforms, and technology-based communication media. This transformation is being carried out gradually so that teachers and education staff can adapt to the changes. According to Ruloff and Petko (2021), the success of a school's digital transformation is greatly influenced by the principal's ability to build a digital vision and a culture of innovation. Principals who are able to support the use of technology will be more successful in creating schools that are adaptive to change.

The next strategy is developing teachers' digital competencies through educational technology training and mentoring. Principals recognize that the success of digital transformation is determined not only by the availability of technology but also by teachers' ability to utilize it effectively in the learning process. Therefore, schools strive to improve teachers' digital literacy through workshops, learning application training, and sharing of best practices among teachers. According to the OECD (2021), strengthening teachers' digital competencies is a key factor in creating an adaptive and innovative education system. Teachers with technological skills will more easily develop creative learning and increase student participation in the learning process.

In addition to improving teacher capacity, principals also build an organizational culture that supports innovation and collaboration. Schools strive to create a work environment open to new ideas and the use of technology in various educational activities. An adaptive organizational culture helps reduce resistance to change and increases school readiness for digital developments. According to Sudiansyah (2024), an innovative organizational culture is a crucial element of adaptive school management. Schools with a collaborative culture and openness to change will adapt more quickly to technological developments than schools that maintain conventional management patterns.

Another strategy implemented by school principals is strengthening collaboration with parents and educational stakeholders through digital communication technology. Principals utilize social media, online communication groups, and school applications to strengthen coordination between schools and parents. This strategy helps increase parental involvement in supporting their children's educational process. According to Gaffar et al. (2025), digital transformation in education requires synergy between schools, families, and educational stakeholders for the change process to be effective and sustainable. Good collaboration will strengthen support for educational innovation within the school environment.

In managing change, principals also implement data-driven decision-making strategies. Academic data, student attendance, learning evaluations, and school needs are now being managed digitally to support the planning and evaluation of school programs. The use of data helps principals make decisions more

quickly, accurately, and efficiently. According to Bush (2020), modern educational management requires principals to be able to use data as a basis for strategic decision-making. Data-driven schools will more easily evaluate educational quality and develop school programs sustainably.

However, the digital transformation process in elementary schools in Mataram City still faces several challenges, such as limited technological infrastructure, uneven digital skills among teachers, and resistance to change among some educators. To overcome these obstacles, principals employ a persuasive and gradual approach to ensure positive acceptance of change by all school members. Overall, the principals' strategies for managing digital change and transformation in elementary schools in Mataram City demonstrate that adaptive leadership is a key factor in the success of adaptive school management. Principals serve not only as administrators of education but also as transformation leaders capable of building an innovative culture, enhancing human resource capacity, and creating an education system responsive to technological developments in the digital era.

What are the supporting and inhibiting factors for adaptive school management in facing technological disruption in elementary schools in Mataram?

The implementation of adaptive school management in the face of technological disruption in elementary schools in Mataram City is not a simple process; it is influenced by various supporting and inhibiting factors. These factors determine the extent to which schools are able to adapt to digital changes in education management, learning, and organizational culture.

1. Supporting Factors

a. Adaptive Principal Leadership

One of the key supporting factors is the leadership of a principal who is adaptive to technological change. Principals who possess a digital vision and openness to innovation are able to accelerate school transformation. According to Heifetz, Grashow, and Linsky (2019), adaptive leadership is the ability of a leader to mobilize people to face complex changes through learning and innovation. In the elementary school context, an adaptive principal can be a driving force for digital cultural change in the school.

b. Education Policy Support

Another supporting factor is government policies that encourage the digitalization of education, such as the implementation of the independent curriculum and school digitalization programs. According to Fullan and Quinn (2021), the success of educational transformation is greatly influenced by the alignment of policies, systems, and practices on the ground. Policies that support innovation will accelerate schools' adaptation to technological change.

c. Improving Teacher Competence

Teachers with strong digital literacy are a crucial factor in supporting the success of adaptive school management. Teachers who are skilled at using learning technology will more easily adapt to changes in the education system. According to the OECD (2021), teachers' digital competence is a key factor in creating innovative and responsive schools to technological change.

d. Availability of Technology Facilities and Infrastructure

The availability of facilities such as internet networks, computer devices, and digital learning applications also supports the implementation of adaptive school management. According to Dwiyama (2025), technology integration in educational management will be effective if supported by adequate digital infrastructure and a technology-based governance system.

- e. Collaboration with Parents and Stakeholders
Support from parents and educational stakeholders is also a crucial factor in strengthening schools' adaptation to technology. According to Gaffar et al. (2025), synergy between schools, parents, and the community is a crucial element in creating an adaptive and sustainable educational ecosystem.
2. Inhibiting Factors
 - a. Teachers' Digital Competency Gap
One major obstacle is the persistent digital skills gap among teachers. Not all teachers possess the same abilities in operating learning technologies. This aligns with the findings of Ruloff and Petko (2021), who stated that schools' digital transformation is often hampered by differences in the digital readiness and skills of educators.
 - b. Limitations of Technology Infrastructure
Some elementary schools still face technological limitations, such as inadequate devices and unstable internet access. According to UNESCO (2020), the digital infrastructure gap is a major challenge to implementing technology-based education in developing countries.
 - c. Resistance to Change
Some educators still show a lack of openness to change, particularly regarding the use of technology in learning and school administration. According to Heifetz et al. (2019), resistance to change is common in organizations undergoing transformation, requiring an adaptive and gradual approach from organizational leaders.
 - d. Teacher Administrative Burden
Teachers often experience a significant administrative workload, reducing the time available to develop technology-based learning innovations. According to Bush (2020), an unbalanced administrative burden can hinder the effective implementation of innovative and adaptive school management.
 - e. Limitations of Continuous Training
The lack of ongoing training in educational technology is also a barrier to school adaptation. According to the OECD (2021), ongoing professional development for teachers is crucial to ensuring the success of digital transformation in education.

Implications of adaptive school management on improving the quality of education in elementary schools in Mataram

The application of adaptive school management to address technological disruption in elementary schools in Mataram City has several important implications for improving the quality of education. These implications are not only evident in learning aspects, but also in school governance, teacher professionalism, organizational culture, and the involvement of educational stakeholders. Overall, the adaptive management approach encourages schools to be more responsive, innovative, and oriented towards improving the quality of educational services.

1. Improving the Effectiveness of School Governance

One of the main implications of adaptive school management is increased effectiveness of school governance. Digitizing educational administration and data management makes the management process faster, more accurate, and more transparent. Principals can make data-driven decisions to improve the quality of educational services. According to Bush (2020), modern educational management must be data-driven to ensure more targeted decisions and improve the effectiveness of the school organization. In the context of elementary schools in Mataram City, the use of digital systems in school administration helps improve work efficiency and the quality of educational services.

2. Improving the Quality of Learning

The next implication is seen in improving the quality of the learning process. The application of digital technology in teaching allows teachers to use interactive learning media, online platforms, and a wider variety of digital learning resources. According to Fullan and Quinn (2021), the transformation of learning in the digital era encourages the creation of a more collaborative, creative, and student-centered learning process. This has resulted in increased student engagement in the learning process in elementary schools.

3. Strengthening Teacher Professional Competence

Adaptive school management It also impacts the improvement of teachers' professional competence, particularly in digital literacy and learning innovation. Teachers are required to integrate technology into the learning process and develop methods appropriate to the characteristics of 21st-century learners. According to the OECD (2021), continuous teacher competency development is key to improving the quality of education in the digital age. Teachers who adapt to technology will be able to create more effective and relevant learning.

4. The Formation of an Innovative School Culture

Another implication is the development of a more innovative school culture that is open to change. Schools that implement adaptive management tend to have a collaborative, creative, and responsive culture to technological developments. According to Sudiansyah (2024), an innovative organizational culture is a crucial foundation for creating adaptive schools that can survive amidst dynamic changes in the educational environment.

5. Increasing Parent and Stakeholder Participation

The implementation of adaptive school management also increases parental and stakeholder involvement in the educational process. Through digital communication technology, the relationship between schools and parents becomes more intensive and effective. According to Gaffar et al. (2025), collaboration between schools, parents, and the community is a crucial factor in sustainably improving the quality of education. Stakeholder involvement strengthens support for the learning and development process of schools.

6. Continuous Improvement of Education Quality

Overall, adaptive school management has implications for the continuous improvement of educational quality. Schools become more responsive to change, more efficient in management, and more innovative in the learning process. According to Hallinger (2021), improving educational quality is greatly influenced by a school's ability to implement continuous organizational change through effective and adaptive leadership.

Conclusion

Based on the results of the discussion regarding Adaptive School Management in Facing Technological Disruption in Elementary Schools in Mataram, it can be concluded that the implementation of adaptive school management is a strategic response of elementary schools in facing technological changes that are taking place very quickly in the digital era.

First, the implementation of adaptive school management in elementary schools in Mataram City is demonstrated through the transformation of adaptive and visionary principal leadership, the digitalization of school administration systems, the strengthening of an innovative organizational culture, the enhancement of teachers' digital competencies, and the strengthening of collaboration between schools, parents, and educational stakeholders. All of these components form a more flexible, responsive, and technology-driven school management system.

Second, the principal's strategy for managing change and digital transformation is implemented through strengthening adaptive leadership, data-driven decision-making, training and developing teachers' digital competencies, and building a school culture that supports innovation and technology adoption. The principal acts as an agent of change, encouraging the entire school community to adapt to technological developments gradually and sustainably.

Third, the main supporting factors in the implementation of adaptive school management include adaptive principal leadership, educational policy support, the availability of technological facilities and infrastructure, teacher digital competence, and collaboration with educational stakeholders. Meanwhile, inhibiting factors identified include the teacher digital competence gap, limited technological infrastructure, resistance to change, teacher administrative workload, and a lack of ongoing training.

Fourth, the implementation of adaptive school management has positive implications for improving the quality of education, which is characterized by increased effectiveness of school governance, quality of learning, teacher professionalism, innovative school culture, and increased participation of parents and the community in supporting the educational process.

Overall, it can be concluded that adaptive school management is a highly relevant management approach in addressing technological disruption in elementary schools in Mataram City. Schools' ability to adapt through effective leadership, organizational innovation, and technology integration is key to sustainably improving educational quality in the digital era.

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