

Research Article

Adaptive Principal Leadership in Building Competitive Schools in the VUCA Era in SMP Negeri 4 Jombang

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Abstract: The Volatility, Uncertainty, Complexity, and Ambiguity (VUCA) era requires schools to respond effectively to rapid and dynamic changes. In this context, adaptive principal leadership plays a crucial role in managing change, fostering innovation, and strengthening school competitiveness. This study aims to examine how adaptive principal leadership contributes to building a competitive school through a case study at SMP Negeri 4 Jombang, Indonesia. A qualitative case study approach was employed. Data were collected through in-depth interviews, observations, and document analysis involving the principal, vice principals, teachers, administrative staff, and the school committee, selected using purposive sampling. Data credibility was ensured through source and technique triangulation, while analysis followed the interactive model of Miles, Huberman, and Saldaña. The findings reveal that the principal demonstrated adaptive leadership by making responsive decisions, empowering human resources, fostering a collaborative school culture, and promoting continuous innovation. School transformation was supported by the integration of digital technologies into learning and school services, including Smart TVs in classrooms, Chromebooks, QR code-based e-books, QRIS digital payment systems, and coding and artificial intelligence education. Furthermore, an adaptive and collaborative school culture enhanced teacher competence, improved educational service quality, strengthened school governance, and increased public trust. The study concludes that adaptive principal leadership is a key driver in developing innovative, resilient, and competitive schools in the VUCA era through digital transformation, organizational culture development, and collaborative engagement among all school stakeholders.

Keywords: Adaptive Leadership; Digital Transformation; School Competitiveness; School Principal; VUCA Era.

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1. Introduction

Rapid global change has brought education into an era characterized by high levels of volatility, uncertainty, complexity, and ambiguity (VUCA). Originally introduced in military and business contexts to describe unpredictable and rapidly changing environments, the VUCA concept has become increasingly relevant to educational settings (Oktarina, 2025). In education, the VUCA era presents new challenges that require schools to respond quickly to technological advancements, policy changes, evolving societal expectations, and the continuously changing characteristics of learners. Schools are no longer expected merely to fulfill conventional administrative and academic functions; rather, they must evolve into adaptive, innovative, and responsive learning organizations capable of addressing ongoing change (Adila, 2025). Consequently, a school's ability to thrive in the VUCA era depends largely on the quality of leadership that can effectively manage organizational change.

As educational leaders, school principals play a strategic role in shaping the direction, culture, and overall quality of education (Mentang, 2024). Their responsibilities extend beyond managing human resources and physical facilities to developing a shared vision, making sound decisions under conditions of uncertainty, and creating a supportive learning environment for

all members of the school community (Hasibuan, 2025). Principals are expected to anticipate environmental changes, respond proactively to emerging challenges, and capitalize on new opportunities to improve educational quality. Therefore, school leadership must move beyond traditional administrative functions and embrace adaptive, collaborative, and innovation-oriented approaches.

Adaptive leadership has emerged as one of the most relevant leadership models for addressing the challenges of the VUCA era. It refers to a leader's ability to adjust strategies, policies, and decision-making processes in response to changing circumstances while maintaining the organization's vision and goals. Adaptive leaders not only respond effectively to change but also initiate meaningful transformations that positively influence organizational performance (Monteski, 2026). Within educational settings, adaptive leadership is reflected in principals' capacity to foster a culture of innovation, empower teachers and administrative staff, strengthen collaboration with stakeholders, and leverage technology to improve educational services. Such capabilities are increasingly important because educational environments are changing rapidly and often unpredictably (Oktaviani, 2025).

At the same time, developing competitive schools has become a central objective of contemporary education. School competitiveness is no longer measured solely by students' academic achievement but also by the ability to produce graduates equipped with twenty-first-century competencies, strong character, digital literacy, creativity, critical thinking, communication, collaboration, and global readiness (Sangwa, 2025). Furthermore, school competitiveness is reflected in effective governance, a positive organizational culture, innovative teaching practices, the integration of information technology, high-quality educational services, and the ability to gain public trust. Achieving these outcomes requires leadership capable of integrating institutional resources strategically and sustainably (Alzoraiki, 2024).

The rapid advancement of digital transformation has further reinforced the importance of adaptive leadership in school management. Digital technologies have fundamentally reshaped educational planning, administrative processes, teaching and learning, assessment, and communication with parents and the wider community. The adoption of learning management systems, interactive instructional technologies, school administration applications, and artificial intelligence offers significant opportunities to improve the effectiveness and efficiency of educational services (Damayanti, 2024). However, digital transformation also introduces challenges, including disparities in digital competence, changes in organizational culture, concerns regarding data security, and the need for continuous professional development. Under these circumstances, school principals are expected to act as change agents who not only adopt technological innovations but also cultivate a healthy digital culture that supports continuous educational improvement (Hadi, 2025).

SMP Negeri 4 Jombang is one of the schools actively responding to these challenges through a variety of educational innovations. As part of its efforts to enhance educational quality, the school has implemented several digital transformation initiatives, including Smart TVs in every classroom, Chromebooks to support technology-enhanced learning, QR code-based digital textbooks, a QRIS cashless payment system, and Informatics instruction that integrates coding and artificial intelligence. These initiatives demonstrate the school's commitment to developing an adaptive learning ecosystem that aligns with technological advancements while providing effective, efficient, and relevant learning experiences for twenty-first-century students. The successful implementation of these innovations is closely associated with the principal's leadership in formulating a clear vision, mobilizing the entire school community, and ensuring the sustainability of each innovation.

Despite these achievements, implementing educational innovations is not without challenges. Frequent policy changes, rapid technological developments, increasing demands for teacher professional competence, rising public expectations regarding educational quality, and increasingly diverse student needs require principals to make effective decisions in complex situations. Moreover, the success of innovation depends on principals' ability to establish effective communication, strengthen collaboration with teachers, administrative staff, parents, and community partners, and foster an organizational culture that embraces change. Consequently, adaptive leadership has become a critical determinant of a school's

ability to maintain educational quality while enhancing its competitiveness in an increasingly dynamic educational environment.

Based on these considerations, examining adaptive principal leadership is essential for understanding how leadership strategies contribute to developing competitive schools in the VUCA era. This study aims to explore how adaptive leadership enables school principals to manage change, foster a culture of innovation, optimize the use of digital technology, and improve the quality of educational services. The findings are expected to contribute to the advancement of educational management theory while providing practical insights for school principals, supervisors, policymakers, and educational practitioners in designing effective leadership strategies for future educational challenges. Ultimately, adaptive leadership can enable schools not only to withstand continuous change but also to evolve into innovative, resilient, and highly competitive educational institutions at the local, national, and global levels.

2. Literature Review

This section must contain a state-of-the-art explanation. It can be explained in several ways. First, you can discuss several related papers, both about objects, methods, and their results. From there, you can explain and emphasize gaps or differences between your research and previous research. The second way is to combine theory with related literature and explain each theory in one sub-chapter.

Adaptive Principal Leadership

Adaptive leadership refers to a leadership approach that enables leaders to respond effectively to complex, uncertain, and rapidly changing environments by promoting innovation, continuous learning, and organizational resilience (Avery, 2025). Unlike traditional leadership, which emphasizes stability and technical problem-solving, adaptive leadership focuses on mobilizing individuals and organizations to address emerging challenges while sustaining long-term goals. In educational settings, adaptive school principals serve as both change leaders and instructional leaders by driving organizational transformation, improving teaching and learning quality, empowering teachers, fostering collaboration, and integrating innovation into school management. They are characterized by vision, flexibility, responsiveness, collaboration, and the ability to make informed decisions under uncertainty. Through participatory decision-making, evidence-based management, and the cultivation of a collaborative and innovative school culture, adaptive leadership strengthens organizational resilience and enables schools to continuously improve and remain competitive in an evolving educational environment.

Competitive Schools

A competitive school is an educational institution that consistently delivers high-quality education while demonstrating the capacity to adapt, innovate, and respond effectively to changing societal and educational demands. School competitiveness extends beyond academic achievement to include the development of twenty-first-century competencies, such as critical thinking, creativity, digital literacy, communication, and collaboration, supported by innovative teaching, effective governance, positive school culture, quality educational services, and the integration of digital technologies (Ainati, 2024). This competitiveness is shaped by internal factors, including leadership, teacher competence, organizational culture, curriculum, and technological readiness, as well as external factors such as government policies, community support, parental involvement, and technological advancements. Among these factors, principal leadership plays a pivotal role by providing strategic direction, empowering school personnel, fostering innovation and collaboration, and optimizing organizational resources, thereby enhancing educational quality and strengthening the school's competitive advantage in a dynamic environment (Pratiwi, 2025).

The VUCA Era and Its Implications for Educational Management

The VUCA era characterized by Volatility, Uncertainty, Complexity, and Ambiguity requires schools to become adaptive, resilient, and innovative in responding to rapid technological advances, policy changes, globalization, and evolving societal expectations. Educational institutions face increasing challenges in maintaining quality while addressing diverse student needs, workforce demands, and organizational uncertainty (Mutil, 2024). Digital transformation, including the adoption of learning management systems, artificial

intelligence, digital assessment, and cloud-based administration, has become essential for improving educational effectiveness and efficiency, although it also introduces challenges related to digital competence, infrastructure, cybersecurity, and organizational readiness. Consequently, effective educational management in the VUCA era depends on adaptive leadership, learning organizations, data-driven decision-making, and strong collaboration among school stakeholders, enabling schools to sustain innovation, improve performance, and remain competitive in a rapidly changing educational landscape (Pepito, 2026).

3. Research Method

This study employed a qualitative case study approach to explore adaptive principal leadership in developing a competitive school in the Volatility, Uncertainty, Complexity, and Ambiguity (VUCA) era. The research was conducted at SMP Negeri 4 Jombang, East Java, Indonesia, selected because of its extensive implementation of digital transformation and adaptive school management practices. These initiatives include the use of Smart TVs in every classroom, Chromebooks to support technology-enhanced learning, QR code-based digital textbooks, QRIS cashless payment systems, and the integration of coding and artificial intelligence into Informatics education, making the school an appropriate setting for investigating adaptive leadership in a rapidly changing educational environment.

Participants were selected through purposive sampling, consisting of the principal as the key informant, supported by vice principals, teachers, administrative staff, and representatives of the school committee who were directly involved in implementing school policies and innovations. Data were collected through in-depth interviews, direct observations, and document analysis. Interviews explored leadership strategies, decision-making processes, innovation, and challenges in managing change, while observations examined leadership practices, school culture, technology integration, and classroom activities. Documentary evidence included the school's vision and mission, strategic plans, quality improvement programs, digital transformation documents, and other relevant institutional records.

Data credibility was ensured through source and method triangulation and member checking to validate the accuracy of the findings. Data were analyzed using the interactive model of Miles, Huberman, and Saldaña (Sugiyono, 2023), involving data condensation, data display, and conclusion drawing and verification. The analysis was conducted continuously throughout the research process to identify emerging themes, relationships, and patterns, providing a comprehensive and trustworthy description of adaptive principal leadership in fostering a competitive school in the VUCA era.

4. Results and Discussion

Adaptive Principal Leadership in Addressing the Challenges of the VUCA Era

The Volatility, Uncertainty, Complexity, and Ambiguity (VUCA) era requires school principals not only to perform managerial functions but also to demonstrate adaptive leadership in responding to the dynamic changes affecting the educational environment. The findings of this study indicate that the principal of SMP Negeri 4 Jombang exhibits key characteristics of adaptive leadership through the ability to recognize emerging changes, anticipate challenges, and make timely and appropriate decisions while maintaining the school's vision and mission. Changes in educational policies, rapid advances in digital technology, increasing public expectations regarding educational quality, and evolving student characteristics have been addressed through leadership strategies that emphasize flexibility, collaboration, and innovation.

The principal has developed leadership grounded in a shared vision of creating an excellent, adaptive, and competitive school. Rather than remaining a formal statement, this vision has been translated into strategic programs involving all members of the school community. Decision-making follows a participatory approach by actively engaging vice principals, teachers, administrative staff, and the school committee in providing input before policies are finalized. This inclusive leadership approach fosters a strong sense of ownership among stakeholders, thereby increasing commitment to and support for the successful implementation of school programs.

Adaptive leadership is further reflected in the principal's response to technological advancements. Digitalization is viewed not merely as a response to contemporary demands but as a strategic means of improving instructional effectiveness, administrative efficiency, and the quality of educational services. Various digital innovations have been implemented gradually by considering the readiness of human resources, the availability of infrastructure, and the specific needs of the school. This phased implementation demonstrates that adaptive leadership is concerned not only with initiating change but also with ensuring that change is accepted, understood, and sustainably implemented throughout the school community.

In responding to uncertainty arising from changes in educational policies, the principal demonstrates the ability to adjust strategies promptly without disrupting the continuity of teaching and learning activities. Every regulatory change is addressed through internal coordination, the development of follow-up action plans, and systematic dissemination of information to teachers and administrative staff. The principal also actively participates in professional forums, training programs, and leadership development activities to remain informed about current educational policies and emerging instructional innovations. This proactive approach enables the school to maintain alignment with national educational priorities while remaining responsive to evolving educational challenges.

Adaptive leadership is also evident in the principal's commitment to empowering teachers as the central actors in the educational process. Teachers are encouraged to participate in professional development programs, share best practices, develop technology-based instructional media, and collaborate through professional learning communities. Beyond providing adequate facilities, the principal promotes a culture of continuous reflection and evaluation that motivates teachers to enhance their pedagogical, professional, social, and personal competencies. This supportive learning environment strengthens the school's capacity to respond effectively to ongoing developments in education.

In addition to promoting innovation, the principal emphasizes transparent communication and collaboration with all stakeholders. Strong partnerships with parents, the school committee, local government, and external organizations have become a significant factor in supporting school improvement initiatives. Strategic policies are communicated openly to foster trust, shared commitment, and collective responsibility for achieving educational goals. This collaborative approach illustrates that adaptive leadership depends not only on the leader's individual capabilities but also on the ability to build synergy among all members of the organization.

The findings further reveal that the adaptive leadership practiced by the principal of SMP Negeri 4 Jombang has created a school organization that is more responsive to change, more receptive to innovation, and more capable of continuous learning. The principal serves as a change agent, integrating vision, strategic planning, technological innovation, and human resource empowerment into a cohesive framework that supports continuous educational improvement. This integration has established a strong foundation for developing a school that is capable not only of adapting to the challenges of the VUCA era but also of sustaining long-term institutional growth.

These findings are consistent with the adaptive leadership framework proposed by Heifetz, Grashow, and Linsky, which emphasizes that leaders should enable organizations to address adaptive challenges through learning, collaboration, and innovation. The results also support Norman, (2025) perspective that successful school transformation depends largely on principals' ability to drive organizational change, empower school communities, and cultivate a culture of continuous improvement. Therefore, adaptive leadership should be regarded not only as an effective response to the complexities of the VUCA era but also as a strategic determinant of effective school governance and the development of competitive educational institutions.

School Transformation Strategy through Innovation and Digitalization

The findings of this study indicate that the transformation strategy implemented at SMP Negeri 4 Jombang is oriented toward strengthening educational quality through school innovation and digitalization. The principal perceives digital transformation not merely as the adoption of technology but as an organizational strategy to improve school management effectiveness, the quality of teaching and learning, and services provided to students and all stakeholders. This strategy was formulated based on the school's needs analysis,

developments in information technology, the demands of national education policies, and the competencies required of students in the twenty-first century. Through this approach, digitalization serves as a strategic instrument to accelerate the achievement of the school's vision of becoming an excellent, adaptive, and competitive educational institution.

One of the most visible forms of transformation is the installation of Smart TVs in every classroom as interactive learning media. The presence of Smart TVs enables teachers to present learning materials more engagingly through videos, simulations, interactive presentations, and various digital learning resources that can be accessed directly via the internet. Classroom observations revealed that the use of these digital media increased students' participation during learning activities, encouraged classroom discussions, and helped teachers explain abstract concepts more effectively. The utilization of Smart TVs also reduced dependence on conventional instructional media, making the learning process more flexible and better suited to the characteristics of today's digital generation.

Digital transformation has also been realized through the provision of Chromebooks as supporting devices for learning. These devices are utilized in project-based learning activities, digital assessments, information searching, and the development of students' digital literacy skills. The principal has gradually cultivated a technology-based learning culture by encouraging teachers to integrate various digital platforms into classroom instruction. In addition to improving learning effectiveness, the use of Chromebooks familiarizes students with using technology productively, creatively, and responsibly.

Another innovation is the implementation of QR code-based digital books (e-books) as alternative learning resources. Students can easily access textbooks and other instructional materials by scanning QR codes using the available digital devices. This policy enables learners to obtain educational resources anytime and anywhere without relying solely on printed textbooks. Besides improving efficiency, the use of e-books also supports the school's environmentally friendly initiatives by reducing paper consumption. Interviews with teachers indicated that broader access to learning resources has provided students with greater opportunities to enrich their knowledge independently.

School transformation extends beyond instructional practices to encompass school service management. One notable innovation is the implementation of a cashless payment system through the Indonesian QRIS (Quick Response Code Indonesian Standard) platform in the school cafeteria. This policy aims to cultivate a digital transaction culture among students from an early age while enhancing transparency and efficiency in financial management. Furthermore, various school administrative services have gradually been digitized, enabling faster, more accurate, and better-documented services for students, parents, and teachers. These digitalized services demonstrate that the school's transformation strategy is not limited to teaching and learning but also embraces the broader dimensions of organizational governance.

As part of its readiness to address future technological developments, the school has introduced Coding and Artificial Intelligence (AI) education integrated into Informatics learning. This program is designed to equip students with computational thinking, problem-solving abilities, creativity, and digital literacy competencies that are increasingly essential in the era of Industry 4.0 and Society 5.0. The principal believes that technological competence is not merely an academic necessity but also a vital life skill that prepares students for the future workforce and an increasingly digital society. Consequently, the school continuously encourages the professional development of teachers so that they are capable of designing innovative learning experiences aligned with technological advancements.

The success of digital transformation at SMP Negeri 4 Jombang is inseparable from the principal's strategy of strengthening human resource readiness. The principal consistently provides teachers with opportunities to participate in training programs, workshops, professional learning communities, and various professional development activities related to the integration of technology into teaching and learning. Beyond improving individual competencies, the principal has fostered a collaborative culture by encouraging teachers to share best practices, thereby ensuring the sustainable development of instructional innovation. This approach demonstrates that successful digital transformation depends not only on the availability of technological infrastructure but also on the readiness of human resources to maximize the effective use of technology.

The findings reveal that the transformation strategy through innovation and digitalization has had a positive impact on improving the quality of educational services at SMP Negeri 4 Jombang. Teaching and learning processes have become more interactive, access to learning resources has expanded, administrative management has become more effective, and the digital competencies of both teachers and students have improved significantly. Moreover, these innovations have strengthened the school's reputation as an educational institution that is adaptive to contemporary developments and well prepared to face the challenges of the VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) era.

These findings are consistent with Karakose, (2025), who argues that successful educational transformation depends not only on the adoption of technology but also on the leader's ability to cultivate a culture of innovation and mobilize the entire school community to adapt to change. The findings also support the perspective of Schrum and Levin, who emphasize that effective leadership is a critical determinant of successful digital transformation in schools because it enables the integration of technology, human resources, and organizational culture into an educational system oriented toward continuous quality improvement.

Strengthening School Culture and Collaboration to Enhance Competitiveness

The findings of this study indicate that the success of SMP Negeri 4 Jombang in enhancing its competitiveness is determined not only by the utilization of technology but also by the strengthening of school culture, which has been systematically developed through the leadership of the principal. School culture serves as the primary foundation for shaping an organizational character that is adaptive, innovative, and committed to continuous quality improvement. The principal has fostered a supportive working environment by instilling the values of integrity, discipline, responsibility, collaboration, and lifelong learning among all members of the school community. These values have been internalized through habituation programs, exemplary leadership, and continuous evaluation, enabling them to become an integral part of the organizational culture that supports the achievement of the school's vision.

One of the key strategies implemented is the development of a collaborative work culture. Rather than adopting a centralized leadership approach, the principal actively encourages the involvement of teachers and educational staff in every stage of school management, including planning, implementation, and evaluation of school programs. Strategic policies are discussed through coordination meetings, working groups, and collaborative discussions, ensuring that decisions are reached through deliberation while considering diverse perspectives. This participatory approach fosters a strong sense of ownership of school programs and enhances the commitment of all school members toward achieving shared goals. Furthermore, the collaborative culture strengthens internal communication, enabling challenges and organizational issues to be addressed more quickly and effectively.

Strengthening a culture of innovation constitutes another essential strategy for improving the school's competitiveness. The principal provides teachers with broad opportunities to develop creativity in instructional practices, design technology-based learning media, and implement student-centered learning models. Teachers are encouraged to exchange experiences through professional learning communities, professional discussions, and best practice sharing, thereby cultivating a culture of mutual learning and continuous support. Interview findings revealed that teachers feel fully supported by the principal to experiment with innovative approaches without fear of failure. Such conditions create an organizational climate that is open to change and capable of generating more effective teaching and learning practices.

In addition to strengthening internal collaboration, the principal has established strong partnerships with parents, the school committee, local government, universities, and various external institutions that support school development. Parents are involved not only in formal activities such as school committee meetings but also in character education programs, literacy initiatives, and other school activities. These partnerships reinforce support for the school's innovation programs while simultaneously increasing public confidence in the quality of educational services. Observational findings demonstrate that open communication between the school and parents creates strong synergy in supporting both the academic and non-academic development of students.

An adaptive school culture is also reflected in the school's commitment to developing the competencies of its human resources. The principal consistently facilitates teachers and educational staff to participate in training programs, seminars, workshops, and other professional development activities. Upon completing these activities, teachers are encouraged to disseminate the knowledge and skills they have acquired to their colleagues through internal school forums. This strategy not only enhances individual competencies but also strengthens the organization's capacity as a learning organization an institution capable of continuous learning, adaptation, and development in response to changing environmental demands.

In terms of student character development, the school has implemented various positive habituation programs that contribute to the establishment of an outstanding school culture. Activities promoting discipline, religious values, literacy, environmental awareness, and student leadership are systematically integrated into daily school life. Furthermore, the use of technology is directed toward fostering a responsible digital culture, ensuring that students not only develop digital competencies but also understand the ethical principles governing technology use. These efforts demonstrate that the school's competitiveness is developed through a balanced integration of academic knowledge, twenty first century skills, and character education.

The findings reveal that a strong school culture and effective collaboration have made significant contributions to improving the quality of educational services at SMP Negeri 4 Jombang. A supportive working environment encourages teachers to continue innovating, open communication accelerates problem-solving processes, and partnerships with diverse stakeholders broaden institutional support for school development. These conditions have resulted in improved teaching quality, higher student achievement, increased public trust, and a stronger institutional reputation as an adaptive and competitive educational institution.

These findings are consistent with Schein, who argues that organizational culture is a fundamental factor influencing members' behavior and the achievement of organizational goals. The findings also support Supriyadi (2026), who emphasizes that sustainable school transformation can only be achieved when leadership is capable of building a collaborative culture, empowering human resources, and fostering a learning organization. Therefore, strengthening school culture and collaboration serves not only as a foundation for implementing educational innovations but also as a strategic asset for enhancing school competitiveness amid the dynamic challenges of the VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) era.

Implications of Adaptive Leadership for Achieving a Competitive School

The findings of this study indicate that the adaptive leadership practiced by the principal of SMP Negeri 4 Jombang has made a significant contribution to the realization of a competitive school. Adaptive leadership not only plays a vital role in managing organizational change but also serves as the primary driving force in creating an educational ecosystem that is innovative, collaborative, and committed to continuous quality improvement. The principal's ability to integrate vision, strategic planning, technology, and human resource empowerment has fostered more effective and responsive school governance capable of addressing the dynamic challenges of the educational environment. These findings demonstrate that school competitiveness is achieved through an adaptive process of organizational transformation rather than merely through the provision of physical infrastructure and technological facilities.

One of the most tangible implications of adaptive leadership is the improvement in the quality of the teaching and learning process. Various innovations initiated by the principal—including the use of Smart TVs, Chromebooks, QR code-based e-books, and the integration of Coding and Artificial Intelligence (AI) into the curriculum have transformed classroom instruction into a more interactive, contextual, and student-centered learning experience. Teachers have been provided with greater opportunities to develop creative instructional strategies, while students have gained more meaningful learning experiences through the effective use of digital technology. As a result, students' learning motivation, classroom engagement, and mastery of twenty-first-century competencies including critical thinking, creativity, communication, collaboration, and digital literacy have improved significantly.

Another important implication is reflected in the enhancement of school governance. The principal has successfully established a more effective management system through the integration of information technology into administrative services and decision-making processes. Coordination among members of the school community has become faster, information dissemination has become more efficient, and school data can now be managed more systematically. The implementation of digital systems has also enhanced transparency and accountability in educational management, thereby strengthening the trust of both the school community and the public in the institution. Such effective governance represents one of the key indicators of a highly competitive school.

Adaptive leadership has also contributed significantly to improving the competencies of human resources within the school. The principal consistently encourages teachers and educational staff to participate in various professional development activities, including training programs, workshops, professional learning communities, and best practice sharing sessions. These initiatives have fostered a strong culture of continuous learning among teachers, enabling them to keep pace with technological advancements, curriculum reforms, and instructional innovations. The improvement of teachers' professional competencies has directly enhanced the quality of classroom instruction and educational services delivered to students.

From the perspective of organizational culture, adaptive leadership has successfully cultivated a school environment that is more open to change. Collaboration, effective communication, mutual respect, and a strong commitment to continuous innovation have become defining characteristics of the school's organizational culture. The principal serves as a facilitator who encourages the active participation of all members of the school community in decision-making processes and program implementation. This positive organizational culture has established the school as a learning organization capable of adapting rapidly to emerging challenges while ensuring the sustainability of its development initiatives.

The implications of adaptive leadership are also evident in the enhanced reputation and public trust enjoyed by SMP Negeri 4 Jombang. The various innovations introduced by the school have become distinctive strengths that demonstrate its commitment to providing high-quality educational services aligned with contemporary educational developments. This increased public confidence is reflected in the growing interest of prospective students in enrolling at SMP Negeri 4 Jombang, stronger parental support for school programs, and expanded partnerships with various institutions supporting educational development. Consequently, school competitiveness is measured not only by academic achievement but also by the institution's ability to establish a positive reputation and provide educational services that meet the expectations of the community.

Nevertheless, the findings also reveal that the implementation of adaptive leadership continues to face several challenges. Rapid technological advancements require the school to continuously upgrade its technological infrastructure, while improving teachers' digital competencies demands sustained professional development efforts. Furthermore, the dynamic nature of educational policy requires the principal to continuously adjust strategic approaches without compromising the quality of educational services. Therefore, the success of adaptive leadership depends not only on the principal's capabilities but also on the commitment of the entire school community, government support, and strong partnerships with various stakeholders to ensure that the transformation process remains sustainable.

These findings reinforce the adaptive leadership theory proposed by Heifetz, Grashow, and Linsky, which emphasizes that adaptive leadership is the capacity of leaders to mobilize organizations to learn, innovate, and adapt to complex environmental changes (Rachmawati, 2023). Furthermore, the findings are consistent with Sulastri (2026), who argues that successful school transformation depends on leaders' ability to build organizational capacity, empower human resources, and cultivate a collaborative culture oriented toward continuous improvement. In the context of SMP Negeri 4 Jombang, adaptive leadership has proven to be a strategic factor capable of integrating innovation, digitalization, school culture, and collaboration into a unified force for creating an excellent and competitive school in the VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) era. Therefore, adaptive leadership can be regarded as one of the essential competencies that school principals must possess to effectively address the challenges of contemporary and future education.

5. Conclusions

This study concludes that the adaptive leadership of the school principal is a strategic factor in establishing a competitive school in the era of Volatility, Uncertainty, Complexity, and Ambiguity (VUCA). The principal of SMP Negeri 4 Jombang demonstrates the characteristics of adaptive leadership through the ability to anticipate change, make responsive decisions, foster collaboration, and initiate various innovations that support continuous educational quality improvement. This leadership approach is not only oriented toward solving immediate school challenges but also toward developing an organization that is capable of learning, adapting, and sustaining long term growth.

School transformation has been realized through the implementation of various digital-based innovations, including the use of Smart TVs in every classroom, Chromebooks to support teaching and learning, QR code-based e-books, a cashless payment system (QRIS), and the integration of Coding and Artificial Intelligence (AI) into the curriculum. These innovations have not only enhanced the effectiveness of the teaching and learning process and improved the efficiency of school management but have also strengthened the digital competencies of both teachers and students, enabling the school to better respond to the challenges of education in the digital era.

The success of this transformation has been supported by a strong and collaborative school culture. The principal has successfully cultivated an organizational culture that encourages innovation, continuous learning, open communication, and partnerships with various stakeholders. The synergy among adaptive leadership, a positive school culture, and effective collaboration has become a fundamental asset in improving the quality of educational services, strengthening public trust, and enhancing the school's reputation as an excellent and competitive educational institution.

Based on the findings of this study, it can be affirmed that adaptive leadership represents an appropriate leadership approach for addressing the complexities of the VUCA era. The integration of adaptive leadership, digital transformation, school culture enhancement, and collaboration among all members of the school community creates a more innovative, responsive, and sustainable educational system. Therefore, school principals should continuously develop their adaptive leadership competencies, strengthen human resource capacity, and cultivate a school ecosystem that is open to change in order to maintain and enhance school competitiveness at the local, national, and global levels.

This study has several limitations. As it was conducted using a single-case study design in one school, the findings cannot be generalized to all educational institutions. Therefore, future research is recommended to involve a larger number of schools with diverse characteristics, employ comparative or mixed-methods approaches, and examine the influence of adaptive leadership on other dimensions of educational management, such as teacher performance, organizational culture, stakeholder satisfaction, and student learning outcomes. Such investigations would further enrich the body of knowledge on adaptive leadership in educational management and provide broader contributions to improving the quality of education in Indonesia.

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