Principal's Transformational Leadership
in Shaping Innovative School Culture in the Digital Era

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Abstract: This research aims to investigate in depth how school principals with transformational leadership styles shape innovative school cultures in the digital era. This research responds to the gap of previous research that focused more on structural and administrative aspects in educational leadership, but has not explored exploratively the dynamics of transformational leadership in building a technology-oriented innovation culture. The method used is a qualitative approach with a case study design. Data were collected through in-depth interviews, participatory observations, and documentation studies at SMP Negeri 1, 2, 4, 9, 13 Bengkulu City that have implemented technology integration in learning and management activities. The results of this study show that school principals play the role of agents of change who inspire, facilitate collaboration, and create an open climate for renewal. The novelty of this study lies in mapping transformational leadership practices that are contextual with the challenges of digitizing education. The practical implications of this research encourage the development of leadership programs that focus on digital literacy and school cultural innovation. A major contribution of this research is the provision of a conceptual framework for transformative leadership in the context of 21st century digital schools.

Keywords: Innovative Culture Based on Digital Technology, Principal's Leadership, School Culture

A. Introduction

The rapid development of information and communication technology has changed various aspects of life, including in the field of education (Bilan, et. al., 2023; Holtgrewe, 2014). The world of education can no longer rely on conventional ways in organizing the learning process and school management (Peurach, et al. 2019). Digital transformation is a necessity that must be responded to adaptively by all school components. In the midst of these changes, school principals as educational leaders are required to not only carry out administrative functions, but also become agents of change who are able to create an

innovative school culture, relevant to the demands of the times (Browder, et. al., 2024; Goraya, et. al., 2024).

In this context, the transformational leadership model is one of the leadership approaches that is considered effective in encouraging change and innovation in the school environment. Bass and Avolio (1994) define transformational leadership as a process in which leaders work with subordinates to identify the need for change, create a vision that guides change through inspiration, and execute change together with members of the organization. In the educational environment, principals with a transformational leadership style play a role in motivating teachers and students to think creatively, accept challenges, and actively involve them in the school transformation process (Leithwood & Jantzi, 2000).

A number of previous studies have shown that transformational leadership contributes significantly to improved school performance. For example, research by Özdemir, et al. (2024); Yalçın, & Çoban, (2023) found that the transformational leadership style of school principals had a positive effect on teacher job satisfaction and team collaboration, which ultimately improved the quality of teaching and learning. Similar findings were also reported by Wahyudi and Suparno (2020) in the context of secondary schools in Indonesia, which stated that visionary and inspirational principals succeeded in fostering a collaborative and innovative work culture. However, research that specifically highlights how transformational leadership of school principals shapes innovative school cultures in the digital age with all its complexities and technological challenges is still very limited. Most studies only address the relationship between transformational leadership and teacher performance or organizational effectiveness in general (Ng, 2019; Lumbanraja et al., 2021). In fact, the context of the digital era has its own characteristics, such as the need for digital literacy, virtual collaboration, and the use of digital platforms in the teaching and learning process, all of which require a school culture that is open to innovation and adaptation.

This is where the research gap of this study lies: there is still a lack of research that places transformational leadership within the framework of the overall digital transformation of schools. In addition, there have not been many studies that explain how the dimensions of transformational leadership (idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration) are implemented by school principals in the context of building a school ecosystem that supports digital-based innovation. For example, in the dimension of inspirational motivation, school principals in the digital era not only provide verbal motivation to teachers, but must also be able to become role models in the use of technology, facilitate ICT training, and encourage online learning experiments. This requires a different approach than traditional contexts. Research by Khalid et al. (2022) even states that school principals who succeed in creating digital

culture are not only because of their skills, but also because of their ability to form norms and values that support technology-based innovation.

Thus, the novelty of this study lies in its efforts to combine two important aspects that have not been studied in depth at the same time, namely: (1) transformational leadership of school principals; and (2) the formation of an innovative school culture in a digital context. The study not only aims to map leadership patterns, but also explore the real-world practices and challenges that principals face in building an innovative, adaptive, and digital-ready school culture ecosystem. The main contributions of this research are as follows: first, providing new understanding to education policy makers about the importance of transformational leadership in supporting the digital transformation of schools; second, presenting a conceptual model that can be used by school principals and education practitioners in forming an innovative culture in the school environment; third, enriching the academic literature on education management in the digital era, especially in the context of developing countries such as Indonesia.

Innovative school culture is an important foundation for the success of 21st-century learning. According to Fullan (2007), a successful school in the era of change is one that is able to create a culture of continuous learning, encourage collaboration, and be open to innovation. All of this requires leadership that is not only managerial, but also visionary and transformative.

In addition, this research has high practical relevance. In the field, there are still many schools that have not been able to utilize technology optimally to support learning and education management. Several obstacles such as teachers' resistance to change, lack of technology training, and limited infrastructure are often the main obstacles. In this context, principals with a transformational leadership style have great potential to overcome these barriers through a participatory and vision-oriented approach to the future. Therefore, it is important to examine more deeply how the transformational leadership practices of principals can facilitate the change in the culture of school organizations towards a more innovative, adaptive, and digital-based direction. The findings of this study are expected to be a reference for policy makers in designing training and school leadership development that is contextual with the challenges of the times. The formulation of the problem in this study is how does the role of transformational leadership of the Principal of SMP Negeri 1, 2, 4, 9, 13 Bengkulu City shape the innovative culture of schools in the digital era? What kind of innovative culture change does SMP Negeri 1, 2, 4, 9, 13 Bengkulu City look like in the digital era?

Transformational Leadership in the Context of Education

Transformational leadership was first introduced by Burns (1978) and further developed by Bass and Avolio (1994). In the context of education, transformational leadership refers to the ability of principals to inspire, motivate, and guide school citizens toward a shared vision that drives positive change. Principals who adopt this style not only carry out administrative functions, but also act as agents of change that awaken the spirit of innovation and collaboration. According to Leithwood and Jantzi (2006), there are four main dimensions in transformational leadership of principals: 1) *Idealized Influence*: the principal becomes a role model and shows high moral commitment; 2) *Inspirational Motivation*: provides a strong vision and hope to teachers and students; 3) *Intellectual Stimulation*: encourages innovation, critical thinking, and welcomes new ideas; and 3) *Individualized Consideration*: pay attention to the individual needs of the members of the organization personally and professionally. Research by Ng (2019) shows that transformational principals are able to create a dynamic learning environment that is responsive to changing times. In the conditions of the world of education full of uncertainty and the demands of digitalization, the presence of leaders like this is very vital.

Innovative School Culture

School culture reflects the values, norms, and collective behaviors that develop in the school environment. According to Deal and Peterson (2009), a strong and positive school culture is an important foundation for the realization of high-quality education. In the context of the 21st century, an innovative school culture is a prerequisite for facilitating adaptive, creative, and student-centered learning. An innovative culture in schools is characterized by several characteristics: (1) openness to change; (2) the courage to try new things; (3) intensive collaboration between school residents; and (4) system support for creative ideas (Fullan, 2007). To realize these conditions, the leadership role of the principal is very decisive. A study by Schein (2010) states that organizational leaders, including school principals, have the power to shape and change culture through what they care about, reward, or tolerate mistakes in the innovation process. Therefore, principals need to display leadership that encourages experimentation, exploration of new technologies, and reflection on future-oriented learning practices.

Digital Transformation in Education

Digital transformation in the education sector refers to the process of utilizing information technology to strengthen the teaching and learning process and school governance. In the digital age, schools are faced with the need to integrate various technologies such as Learning Management Systems (LMS), school management

applications, online collaboration platforms, and digital evaluation tools. According to the OECD (2020), schools in various countries have begun to adopt digital technology to support personalized learning, management efficiency, and expand access to education. However, this transformation requires not only digital infrastructure, but also an organizational culture that is ready to change and innovate. The principal as a transformational leader plays an important role in this process. As explained by Khalid et al. (2022), digital transformation in schools will only succeed if it is supported by leadership that builds a "digital culture" systematically, starting from teacher empowerment, training support, to the creation of a learning environment that supports the use of technology.

The Relationship Between Transformational Leadership and Innovative School Culture

Several studies have proven a positive relationship between transformational leadership and the school's innovative culture. A study by Sun et al. (2017) shows that transformational principals can shape new values and norms that encourage teachers to experiment in learning, share best practices, and dare to face the challenges of digital learning. In Indonesia, Wahyudi and Suparno (2020) revealed that school principals who have a vision of digital learning and provide concrete support to teachers are able to foster a reflective and creative culture in schools. This can be seen from the increasing use of digital media in the learning process, collaborative projects between teachers, and innovations in teaching methods. However, as shown by Lumbanraja et al. (2021), not all school principals are able to carry out transformational roles well. Some of the obstacles identified include: low digital literacy of school principals, organizational culture that tends to be resistive to change, and limited policy support from the education office.

Challenges and Opportunities in the Digital Era

Digital transformation also brings new challenges for school principals. In addition to technical issues such as limited infrastructure and connectivity, there are also cultural challenges that are no less important. Some teachers may be reluctant to change their conventional way of teaching. On the other hand, students who are digital natives have different learning expectations, are more interactive, visual, and flexible (Prensky, 2001). In such conditions, the role of the principal as a transformational leader becomes very strategic. They must be able to 1) be a bridge between technological vision and pedagogic practice; 2) providing motivation and appreciation for innovation; 3) facilitate training and collaboration between teachers; and 4) foster teachers' confidence in trying new methods. Such leadership will create a healthy, inclusive, and innovative school ecosystem. Not only will teachers be encouraged to continue to grow, but also students

will be more motivated in a learning environment that suits the characteristics of the digital era.

Some previous research findings relevant to the transformational leadership role of principals shaping school innovative culture in the digital era , including by Sun et al. (2017), show that transformational principals can form new values and norms that encourage teachers to experiment in learning, share best practices, and dare to face digital learning challenges. Research by Ng (2019) shows that transformational principals are able to create a dynamic learning environment that is responsive to changing times. Wahyudi and Suparno (2020) revealed that school principals who have a vision of digital learning and provide concrete support to teachers are able to foster a reflective and creative culture in schools. Khalid et al. (2022) stated that digital transformation in schools will only succeed if supported by leadership that builds a "digital culture" systematically, starting from teacher empowerment, training support, to the creation of a learning environment that supports the use of technology.

B. Methods

This study uses a qualitative approach with a multisite case study design. The qualitative approach was chosen because it allowed researchers to delve deeply into the experiences, perceptions, and real practices of school principals in shaping digital-based innovative cultures in the school environment. Case studies are used to explore the phenomenon in a real-life context (Yin, 2018), where researchers aim to holistically understand the leadership processes that influence the creation of a culture of innovation in schools. The multisite case study design allows researchers to compare transformational leadership practices in more than one school to find the patterns, differences, and socio-cultural contexts that surround them (Creswell & Poth, 2018). This research was conducted at SMP Negeri 1, 2, 4, 9, 13 Bengkulu City which has been known to be active in digital learning innovations and work culture transformation. The main goal of this approach is not to generalize statistics, but to achieve the transferability of findings, i.e. the extent to which the results of this study can be applied in a similar context to the consideration of its characteristics (Lincoln & Guba, 1985).

The place of this research is at SMP Negeri 1, 2, 4, 9, 13 Bengkulu City. The time used in this study is 7 (seven) months starting from April-October 2025. The respondents in this study are principals, teachers, and school staff who are directly involved in the process of management, innovation, and digital transformation in schools. The determination of participants is carried out purposively based on the following criteria: 1) The principal has a leadership style that consistently shows transformational characteristics; 2) Schools have adopted digital technology in education management; and 3) There are innovative cultural initiatives that are integrated with learning or school management.

The number of participants consisted of: 5 principals; 10 teachers (2 teachers from each school); and 5 administrative staff or information technology managers. Participants were interviewed in depth to gain various perspectives on the leadership of the principal and its impact on the innovative culture that develops in their respective schools.

In qualitative research, researchers are the main instruments (Creswell & Poth, 2018). However, to support the systematic data collection process, the researchers also used auxiliary instruments in the form of: 1) Semi-structured interview guides, designed based on transformational leadership theory (Bass & Avolio, 1995) and innovative cultural indicators (Deal & Peterson, 2009; Fullan, 2007); 2) Observation sheets, to record behavior, interactions, and the atmosphere of the school environment; and 3) Documentation study checklists, which are used to identify supporting documents such as school work programs, innovation meeting minutes, technology implementation reports, and school publication media. Questions in the interview guide include: 1) How do principals encourage innovation in schools? 2) What is the form of support for the principal in the use of learning technology? 3) How are teachers and staff responding to the change in school culture? The instrument was tested through content validation by two experts in the field of education management and school leadership.

The data collection technique in this study consists of three main methods, were in-depth interview, observation, and documentation. Interviews are conducted face-to-face or online (if needed), with a duration of 45–60 minutes per participant. Interviews are recorded and transcribed for analysis purposes. This technique was chosen because it is able to explore personal narratives, subjective experiences, and social dynamics from the perspective of participants (Merriam & Tisdell, 2016). The researcher then made observations in formal and informal activities in schools, such as staff meetings, innovation activities, and principal-teacher interactions. This observation aims to capture the real context of the work culture and leadership style shown by the principal. The researcher recorded the data narratively and reflectively in the field notes. The documents analyzed included school work programs, innovation policies, teacher satisfaction survey results, digital training documents, and social media documentation or school websites. Documentation serves as complementary and triangulation data to the results of interviews and observations (Bowen, 2009). Data analysis was carried out using thematic analysis techniques based on the Braun & Clarke (2006) model, which included six main steps: 1) Familiarizing with the data, reading repeated transcripts and recording initial ideas; 2) Generating initial codes, identifying important parts of the data related to the focus of the research; 3) Searching for themes, grouping code into potential themes, such as "inspirational leadership", "strengthening collaboration", "digital support"; 4) Review the theme, evaluate the suitability of the theme with the overall data and research objectives; 5) Naming and defining themes, describing the essence of each theme conceptually; 6) Prepare a final report, presenting a narrative of findings supported by

direct quotes from participants. During the analysis process, the researcher also applied the principle of coding constant comparison, which is comparing data between cases to find patterns or differences.

To maintain the validity of the data, the researcher applied four criteria of trust from the research results from Lincoln & Guba (1985), namely: 1) Credibility: Achieved through triangulation of data (interviews, observations, documentation) and member checks with participants to ensure accurate interpretation of the researcher; 2) Transferability: A detailed contextual description (thick description) is provided so that the reader can assess the relevance of the findings to other contexts; 3) Dependability: Enforced by compiling trail audits and reflective records during the research process; and 4) Confirmability: Strengthened by maintaining the objectivity of the researcher and including direct citations to support the findings.

C. Results and Discussion

1. The Role of Transformational Leadership of the Principal of State Junior High School 1, 2, 4, 9, 13 Bengkulu City Shaping the School's Innovative Culture in the Digital Era

The digital era requires educational institutions, including State Junior High Schools, to adapt and innovate. Innovation is not only limited to the use of gadgets, but includes transformations in pedagogy, curriculum, school culture, and management. In this context, transformational leadership emerges as the most relevant leadership model for driving profound and sustainable change. The principal is no longer just an administrator, but a change agent who inspires and empowers all school residents.

Transformational Leadership: A concept popularized by James MacGregor Burns and further developed by Bernard M. Bass. Transformational leaders are those who: Idealized Influence: Be an exemplary role model, have high integrity, and earn the trust of their followers. Inspirational Motivation: Conveys a clear and compelling vision of the future, as well as evokes enthusiasm and optimism. Intellectual Stimulation: Encourages subordinates to think creatively, challenge old assumptions, and seek innovative solutions to solve problems. Individualized Consideration: Treating each member as an individual, listening to their aspirations, and mentoring them to develop their potential.

School Innovative Culture: An environment where the values of experimentation, collaboration, acceptance of risk (and failure), and continuous learning are valued and practiced by all. In the digital era, this culture is manifested through the adoption of technology for learning (such as Flipped Classroom, Blended Learning), the

development of digital teaching materials, and the use of data for decision-making. Here are how the four pillars of transformational leadership are realized by a Principal of SMP Negeri 1, 2, 4, 9, 13 Bengkulu City to build an innovative culture through interviews, observations and document studies:

a. Formulating and Communicating an Inspirational Digital Vision (Inspirational Motivation)

A transformational junior high school principal doesn't just tell teachers to use PowerPoint. He created and delivered a shared vision of "Schools of Excellence and Relevance in the 21st Century". This vision outlines how technology can personalize learning, connect students to global knowledge sources, and develop 21st century skills (4Cs: Critical Thinking, Creativity, Communication, Collaboration). Example Actions: Hold workshops to jointly formulate a school's digital vision, using communication channels such as WhatsApp groups or digital newsletters to continuously remind and encourage about the vision. According to Leithwood & Jantzi (2006), transformational leadership is effective in building the school's capacity to change because of its focus on developing a motivating shared vision and goals.

b. Becoming a Role Model and Innovation Champion (Idealized Influence)

Teachers and staff will see firsthand the actions of the principal. If the principal actively uses digital platforms for meetings, is open to learning new applications, and shares the latest educational articles or tools, then he becomes a credible role model. Example Action: The principal himself leads a short training on the use of Google Classroom or Quizizz in a teacher council meeting. He also openly shared his success and failure experiences in trying new technologies. Bandura's Social Learning Theory (1977) emphasizes that individuals learn by observing and imitating models. The principal as a respected model will influence the norms and behavior in the school.

c. Encouraging Experimentation and Critical Thinking (Intellectual Stimulation)

Innovation will not grow in a rigid environment and fear of being wrong. Transformational principals create safe spaces for teachers to experiment. He encouraged teachers to challenge conventional teaching methods and design Project-Based Learning (PjBL) that utilizes technology. Action Examples: Allocate funds for small "learning innovation grants" for teachers, hold monthly teacher innovation "show and tell" sessions, and not blame teachers if a digital initiative hasn't been successful, but make it a learning reflection material. Bass & Riggio (2006) state that the intellectual stimulation of transformational leaders encourages their followers to be more creative and innovative in solving problems. This is in line with the concept of growth mindset from Carol Dweck (2006), who sees failure as an opportunity to grow.

d. Providing Individualized Support and Development
Not all teachers have the same level of digital literacy. Transformational principals understand this and provide different assistance as needed. He became a mentor and facilitator. Example of Action: Conducting teacher competency mapping, then organizing training at different levels (basic and advanced). Become a coach by conducting class visits and providing constructive feedback. Providing time flexibility for teachers to collaborate on designing digital materials. Hallinger & Heck (1998) in their research on school leadership found that the leader's direct support for the teacher's professional development is a key factor in the effectiveness of the school. In the digital age, this support means ensuring teachers have the skills and confidence to innovate.

e. Building Networks and Collaboration
Transformational principals understand that innovation cannot be done alone. He actively builds networks with other parties such as the "Rumah Belajar Ambassador" from the Ministry of Education and Culture, universities, community educators on social media (such as *Guru Kreatif Indonesia*), or the education technology industry. Example Actions: Invite practitioners from the network to share knowledge in schools, or facilitate teachers to attend webinars and certified online courses. The concept of Professional Learning Community (PLC) initiated by Richard DuFour (2004) emphasizes that collective learning and collaboration are the key to continuous improvement. Transformational principals are the main drivers of technology-integrated PLCs.

2. **Innovative Cultural Change in State Junior High School 1, 2, 4, 9, 13 Bengkulu City in the Digital Era**

The following is a presentation on the form of innovative cultural change in State Junior High School in the digital era that is realized through transformational leadership. These changes are not only surface (like gadgets), but touch all aspects of the school ecosystem.

a. Changes in Learning Environments: From Static to Dynamic and Connected
1) Old Culture: Teacher-centered classrooms, limited learning resources to package books and worksheets, and isolated classrooms from the outside world.
2) Innovative Culture in the Digital Age:
a) Hybrid and Agile Classrooms: Learning takes place offline, online, or blended learning. The use of platforms such as Google Classroom, Moodle, or Microsoft Teams has become the norm. Physical classrooms

are redesigned into flexible learning spaces that allow for collaborative learning.

b) Unlimited Learning Resources: Teachers and students actively utilize the Ministry of Education and Culture's Learning House, Khan Academy, PhET Simulation, YouTube Education, and other digital resources to enrich perspectives.

c) Open Classroom Walls: Through programs such as virtual exchanges or video conferences with other schools, even with experts from different fields, students connect with a wider range of knowledge and culture.

b. Changes in Pedagogical Practice: From Instruction to Creation
1) Old Culture: The lecture method is dominant, assessment focuses on memorization (lower-order thinking skills), and individual assignments.
2) Innovative Culture in the Digital Age:
   a) Project-Based Learning (PjBL) and Real-World Problems: Students are encouraged to create podcasts about historical material, animated videos to explain physics concepts, or blogs for their written work. Technology is used as a tool to create, not just consume.
   b) Gamification and Interactivity: The use of Quizizz, Wordwall, Kahoot!, or Minecraft: Education Edition makes learning more engaging and allows for instant feedback.
   c) Personalized Learning: Digital platforms allow teachers to assign different materials and assignments according to students' learning speeds and styles (learning differentiation).

c. A Change in the Role of the Teacher: From a Single Source of Knowledge to a Learning Facilitator & Designer
1) Old Culture: The teacher as the main "holder of the truth" in the classroom.
2) Innovative Culture in the Digital Age:
   a) Teachers as Curators and Designers: Teachers are tasked with curating quality digital content, designing project-based learning experiences, and creating interactive digital modules.
   b) Teachers as Collaborators: Teachers collaborate across subjects (team teaching) to create integrated projects. For example, Indonesian and ICT teachers collaborate on a short film project.
   c) Teachers as Lifelong Learners: Teachers actively participate in webinars, online training (MOOCs), and digital teacher communities (such as Creative Teachers Indonesia on social media) to continuously upgrade their knowledge.

d. Changes in Teachers' Collaborative Work Cultures: From Individuals to Learning Communities
1) Old Culture: Teachers work alone in their "teacher's room", lesson planning is rarely shared.
2) Innovative Culture in the Digital Age:
   a) Digital Professional Learning Community (PLC): Teachers within one school or even across schools form discussion groups on platforms such as WhatsApp Group, Telegram, or special forums. They shared digital lesson plans, teaching materials, and learning reflections.
   b) Shared Repository: Schools have a cloud drive (Google Drive/SharePoint) that contains question banks, learning videos, and modules that all teachers can access and contribute to. This prevents "starting from scratch" and encourages good quality standards.

e. Changes in Assessment Systems: From Purely Cognitive to Holistic and Authentic
1) Old Culture: The main assessment is daily repetition and paper-based UTS/UAS, emphasizing true/false answers.
2) Innovative Culture in the Digital Age:
   a) Process Assessment and Digital Portfolio: Teachers use e-portfolios (such as Google Sites) to assess student progress on an ongoing basis. Students' work (videos, blogs, presentations, graphic design) is collected as authentic evidence of learning.
   b) Real-Time Feedback: Tools such as Google Docs with comment features allow teachers to provide specific and timely feedback during the assignment process.
   c) Assessment for Learning: Technology is used for rapid diagnostics (such as online quizzes) to map student understanding and design subsequent learning.

f. Changes in School Leadership and Management: From Bureaucratic to Serving & Data-Driven
1) Old Culture: The principal as a supervisor and bureaucrat, decision-making based on experience or intuition.
2) Innovative Culture in the Digital Age:
   a) Data-Driven Decision Making: Principals leverage data from learning management systems to analyze trends in student grades, attendance, and participation. This data is used for targeted interventions.
   b) Transparent and Efficient Management: The use of applications for financial management (SAPK), inventory, and announcements makes school governance more transparent and efficient.

c) Servant Leadership: Principals prioritize the empowerment of teachers and staff, by providing access to digital resources, training, and technical support.

Table 1. Visual Forms of Cultural Change

School Aspect	Old Culture (Traditional)	Innovative Culture in the Digital Age
Learning Environment	Static, teacher-centered, Isolated	Dynamic, student-centered, globally connected
Pedagogical	Lectures, memorization, individual	PjBL, creation, collaborative, personalization
The Role of the Teacher	Knowledge transmitter	Facilitators, learning designers, collaborators
Teacher Collaboration	Individual	Digital-based Learning Communities (PLCs)
Valuation	Cognitive, summative, paper-based	Holistic, authentic, digital portfolio
Leadership	Bureaucratic, intuitive	Serving, data-driven, visionary

D. Conclusion

1. The transformational leadership role of the Principal of State Junior High School 1, 2, 4, 9, 13 Bengkulu City in shaping an innovative culture in the digital era is central and multidimensional. It works as:
   a. Visionaries who give direction.
   b. An inspiring example.
   c. Empowering drivers.
   d. Supportive facilitators.
   By integrating the four pillars of transformational leadership, a Principal can transform a school culture from one that may be traditional and resistant to change, to a dynamic, adaptive, and innovative learning ecosystem. This innovative culture is ultimately not only about pursuing technological advancements, but about creating a more meaningful and relevant learning experience for learners in preparing them for the future.
2. Innovative forms of cultural change in State Junior High Schools in the digital era ultimately manifest as a living school, where all its members—principals, teachers, students, and staff—are active learners who collaborate to utilize technology to create more meaningful, relevant, and future-proof learning experiences. These changes are systemic and interrelated, starting from an inspiring vision to implementation in every daily activity at school.

Transformational leadership is not just a natural talent, but a competency that must be systematically developed. Principal preparation and coaching institutions (such as LPMP, P4TK, and the Education Office) must revise their training curriculum. Consequences: Otherwise, the principal will continue to struggle to deal with digital disruption and fail

to be an effective agent of change in his or her school. Innovative culture requires adequate and sustainable digital infrastructure support. It's no longer about buying a projector, but about investing in stable internet connectivity, learning platforms, and supporting devices. Consequences: Schools with limited budgets risk falling far behind, widening the digital divide between public schools. The demand to innovate and collaborate will increase the initial workload of teachers. Teachers are required to have a growth mindset and a willingness to learn continuously. Consequences: Teachers who are resistant to change can be a major obstacle and feel depressed, potentially leading to demotivation or burnout if not well supported.

Transformation towards an innovative culture in State Junior High Schools in the digital era is a necessity, not an option. The implications demand systemic change, from the policy level to the practitioner level in the classroom. The suggestions put forward are practical and can be implemented in stages. The key to its success lies in the collaboration and continuous commitment of all parties: the government as regulators and facilitators, school principals as transformational leaders, teachers as spearheads of innovation, and parents and the community as active supporters. With this synergy, State Junior High School can truly become a nursery for the superior generation of Indonesians and ready to face the future.

References

Bass, B. M., & Avolio, B. J. (1994). *Improving Organizational Effectiveness through Transformational Leadership*. Thousand Oaks: Sage Publications.

Bass, B. M., & Avolio, B. J. (1995). *MLQ Multifactor Leadership Questionnaire Manual*. Redwood City: Mind Garden.

Bilan, Y., Oliinyk, O., Mishchuk, H., & Skare, M. (2023). Impact of information and communications technology on the development and use of knowledge. Technological Forecasting and Social Change, 191, 122519. https://doi.org/10.1016/j.techfore.2023.122519

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. http://dx.doi.org/10.3316/QRJ0902027

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Browder, R. E., Dwyer, S. M., & Koch, H. (2024). Upgrading adaptation: How digital transformation promotes organizational resilience. Strategic Entrepreneurship Journal, 18(1), 128-164. https://doi.org/10.1002/sej.1483

Burns, J. M. (1978). *Leadership*. New York: Harper & Row.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (4th ed.). Sage. https://www.scirp.org/reference/referencespapers?referenceid=2155979

Deal, T. E., & Peterson, K. D. (2009). *Shaping School Culture: Pitfalls, Paradoxes, and Promises* (2nd ed.). Jossey-Bass. https://www.scirp.org/reference/referencespapers?referenceid=2224440

Fullan, M. (2007). *The New Meaning of Educational Change* (4th ed.). Teachers College Press.

Goraya, M. A. S., Yaqub, M. Z., Khan, M. A., Akram, M. S., & Alofaysan, H. (2024). Transforming performance: how agility, response, resilience and support shape success in digital strategies. Information Technology & People. https://doi.org/10.1108/ITP-05-2024-0592

Holtgrewe, U. (2014). New technologies: the future and the present of work in information and communication technology. New technology, work and employment, 29(1), 9-24. https://doi.org/10.1111/ntwe.12025

Khalid, R., Saeed, M., & Ali, H. (2022). Transformational leadership and digital innovation: The mediating role of digital culture in educational institutions. *Educational Management Administration & Leadership*, 50(3), 439–457.

Leithwood, K., & Jantzi, D. (2006). Transformational school leadership for large-scale reform: Effects on students, teachers, and their classroom practices. *School Effectiveness and School Improvement*, 17(2), 201–227. https://doi.org/10.1080/09243450600565829

Leithwood, K., & Jantzi, D. (2000). The effects of transformational leadership on organizational conditions and student engagement. *Journal of Educational Administration*, 38(2), 112–129.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Sage Publications.

Lumbanraja, P., Dalimunthe, R. F., & Hasibuan, R. A. (2021). Kepemimpinan Transformasional Kepala Sekolah dalam Meningkatkan Kinerja Guru di Era Teknologi. *Jurnal Administrasi Pendidikan*, 28(1), 45–56.

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative Research: A Guide to Design and Implementation* (4th ed.). Jossey-Bass.

Ng, F. S. D. (2019). Principal leadership for school improvement in Singapore: Balancing change and continuity. *Educational Management Administration & Leadership*, 47(2), 206–225.

Özdemir, N., Gümüş, S., Kılınç, A. Ç., & Bellibaş, M. Ş. (2024). A systematic review of research on the relationship between school leadership and student achievement: An updated framework and future direction. *Educational Management Administration & Leadership*, 52(5), 1020-1046. https://doi.org/10.1177/17411432221118662

OECD. (2020). *Education in the Digital Age: Healthy and Responsible Use of Technology in Schools*. Paris: OECD Publishing.

Peurach, D. J., Cohen, D. K., Yurkofsky, M. M., & Spillane, J. P. (2019). From mass schooling to education systems: Changing patterns in the organization and management of instruction. Review of Research in Education, 43(1), 32-67. https://doi.org/10.3102/0091732X18821131

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5), 1–6.

Schein, E. H. (2010). *Organizational Culture and Leadership* (4th ed.). San Francisco: Jossey-Bass.

Wahyudi, A., & Suparno, S. (2020). Pengaruh Gaya Kepemimpinan Transformasional terhadap Kinerja Guru melalui Motivasi Kerja. *Jurnal Kepemimpinan Pendidikan*, 3(2), 114–123.

Yalçın, M. T., & Çoban, Ö. (2023). Effect of school leadership on student academic achievement: school level path variables. *Current Psychology*, 42(25), 21249-21262. https://doi.org/10.1007/s12144-023-04886-6

Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods* (6th ed.). Sage Publications. https://uk.sagepub.com/en-gb/eur/case-study-research-and-applications/book250150