



---

### Improvement

Scientific Journal for Improving the Quality of Education

e-ISSN: 2597-8543

Journal Homepage: <http://journal.unj.ac.id/unj/index.php/improvement>

Journal Email: [improvement@unj.ac.id](mailto:improvement@unj.ac.id)

---

iMProvement

## THE FUTURE OF EDUCATIONAL LEADERSHIP IN INDONESIA IN THE 21ST CENTURY: LITERATURE STUDY

Agustin Hanivia Cindy<sup>1</sup>, Poltjes Pattipeilohy<sup>2</sup>, Johan Pattiasiasina<sup>3</sup>, Nur Rina Priyani  
Mirsa<sup>4</sup>, Alpendi<sup>5</sup>, Muhammad Faizal A Ghani<sup>6</sup>

<sup>1</sup>Walisongo State Islamic University Semarang, <sup>2</sup>State University of Surabaya,  
<sup>3</sup>Pattimura University, <sup>4</sup>Yogyakarta State University, <sup>5</sup>University of Muhammadiyah  
Bangka Belitung, <sup>6</sup>University of Malaya

Coressponding Author. E-mail: [agustin\\_hanivia\\_cindy@walisongo.ac.id](mailto:agustin_hanivia_cindy@walisongo.ac.id)

### ABSTRACT

This article aims to analyze the trends, challenges, and necessary directions for educational leadership in Indonesia in facing the demands of the 21st Century, which are inclusive, innovative, and globally competitive. The research method used is a Systematic Literature Review (SLR) which involves the synthesis of literature from various scientific databases. The review results indicate that global transformation, especially the implementation of the Merdeka Curriculum (Independent Curriculum), positions the School Principal as the central driver of change, who is required to integrate technology with humanistic values and local context. Specifically, this review identifies that a hybrid leadership style that combines Digital Leadership and Transformational Leadership is the most crucial and needed style for fostering a culture of innovation and technological readiness in schools. This hybrid style is effective in activating coaching mechanisms that empower teachers. However, the findings also highlight a significant literature gap, particularly concerning effective and contextual Educational Leadership strategies in the 3T regions (Frontier, Outermost, Underdeveloped) and in Islamic educational institutions (Madrasahs), where infrastructure challenges and curriculum dualism require a different leadership model. The conclusion of this study confirms that future educational leadership must transcend administrative tasks and focus on a transformative function. Strengthening hybrid leadership that is responsive to Indonesia's diverse context is a critical investment to achieve the vision of Indonesia Emas 2045 (Golden Indonesia 2045).

**Keywords:** 21st Century, Educational Leadership, Golden Indonesia 2045, Hybrid Leadership, Independent Curriculum.

### INTRODUCTION

Entering the 2000s, the education sector underwent a very rapid and complex

transformation, with technological developments, an increasingly connected world, and continuous social and economic changes. This demands a shift in many elements of education, including leadership in this area. Leadership tasks cannot only be administrative, but also need to focus on vision, innovation, and adaptability to existing challenges. In the midst of changes that occur in almost all aspects of life, educational leadership has an important role in maintaining the relevance of the education system and ensuring that education is quality and accessible fairly (Fullan, 2001; Kurniady et al., 2020). Educational leadership in modern times requires leaders to have not only managerial skills, but also digital skills, cooperation, critical thinking, and decision-making with a transformative approach (Sitorus & Meilani, 2023). Leaders in the field of education must function as agents of change who are able to create an inclusive learning culture, empower teachers and educators, and support the implementation of a curriculum that meets the needs of society and the world of work (Widodo & Oktavia, 2023). In Indonesia, various challenges make this situation even more complicated, including differences in the quality of education, lack of resources, and bureaucracy that often hinders innovation.

Various studies show that the success of the education system is highly dependent on the quality of leadership at the institutional and policy levels. Therefore, it is important to study the future of educational leadership in Indonesia in order to formulate strategies in developing quality educational human resources that are relevant to the progress of the times (Rahayu & Iskandar, 2023). Education in Indonesia has a very important role in determining the future direction of the nation. As the basis for development, the education system urgently needs strong and innovative leadership to answer the challenges of the changing times. In the midst of the process of globalization, the fourth industrial revolution, and various other complex challenges, leadership is now entering a new phase full of challenges and opportunities (Fahmi, 2012). The leadership of education in Indonesia in the 21st century is very important to pay attention to. In the context of increasingly fierce competition and globalization, education is a key point in improving the quality of a country's human resources. Therefore, effective leadership in the field of education is crucial to achieving these goals. Educational leadership is increasingly becoming a relevant and essential topic in dealing with the complexities of the 21st century (Labib et al., 2023).

In an age when technology continues to evolve rapidly, global challenges are becoming more complex, and the demands for innovation and adaptation continue to increase, educational leadership can no longer be focused on conventional administrative or management aspects. Instead, education leaders need to be agents of change with a vision, integrate innovative and inclusive educational principles, and be ready to face existing global challenges (Hardianto et al., 2023). In addition, education leadership in Indonesia must also be able to adapt to various changes and dynamics that take place (Handoko, 2021). The rapid development of technology and information has a substantial impact on education. Now, education is no longer limited to the classroom, but has expanded to the virtual realm. Therefore, education leaders in Indonesia must be able to keep up with the pace of technological development and integrate it into the existing education system. Leadership in the field of education in Indonesia needs to have good abilities to face various challenges (Muhibburrohman et al., 2024). Challenges such as low quality of education, educational

disparities between cities and villages, and gaps between developing and disadvantaged areas are still major problems. Education leaders in Indonesia must be able to overcome this problem with innovation and appropriate policies. In facing the challenges and complexities in the world of education in the 21st century, leaders should not see it as an obstacle, but as an opportunity to make positive changes. Education leaders must be committed to improving the overall quality of education, reducing differences between regions, and strengthening the nation's competitiveness at the global level (Judijanto et al., 2024).

This article aims to investigate the future of educational leadership in Indonesia in the 21st century through a thorough literature review, in addition to analyzing various theoretical and empirical views on educational leadership in the modern era, as well as providing recommendations for leadership development that are appropriate to the situation in Indonesia. By combining a variety of viewpoints and the latest research, we can gain a deeper understanding of how education leaders can lead well in the face of the complexities of the future. This literature review will cover various concepts and theories of educational leadership, as well as best practices that have proven to be effective in Indonesia. In addition, it will also discuss the unique challenges faced by education leaders in the digital and global era, including how they can adapt to technological changes, social dynamics, and increasing demands for accountability. By better understanding the future of education leadership, it is hoped that we can design an appropriate strategy to ensure that every child in Indonesia receives a quality and relevant education, so that they are ready to face challenges and take advantage of future opportunities.

A review of the literature on the future of educational leadership in the 21st century provides important insights into a range of relevant concepts, theories, and practices. From transformational leadership models that support collaboration and empowerment, to approaches that pay attention to the influence of technology in learning and curriculum development, this literature helps us understand the evolving role of an educational leader. Through this review, it is seen that the leadership of the education of the future is not just about leading educational institutions, but also about leading social and educational change on a broader scale. It is essential to consider a variety of local, national, and global contexts when designing effective leadership strategies, as well as to recognize the importance of collaboration between the parties involved in achieving inclusive and sustainable educational goals. With a literature review approach, and provides a comprehensive overview of trends, challenges, and opportunities in educational leadership in the 21st century, as well as providing valuable insights for practitioners, researchers, and policymakers in crafting relevant and effective leadership strategies in the future.

This article discusses the challenges and directions of educational leadership in Indonesia in facing a future that is inclusive, innovative, and globally competitive. A future marked by Industry 4.0 and 5.0 demands that educational leadership in Indonesia be flexible, innovative, and forward-looking. However, although there are many global reviews regarding 21st-Century educational leadership, there is still a scarcity of systematic reviews that specifically synthesize the challenges and leadership models that are contextual and adaptive to the unique bureaucratic, social, and infrastructural diversity in Indonesia. Therefore, this review aims to conduct an in-depth analysis.

## **RESEARCH METHODS**

This study employs the Systematic Literature Review (SLR) methodology. SLR is a research method that involves the analysis, study, and interpretation of a body of scientific data (Kuncoro & Yuliawan, 2022). The main objective of SLR is to identify relevant articles, gather necessary data, perform analysis, and organize knowledge comprehensively as the basis for the review (Shaffril et al., 2020; Hiebl, 2021).

### **1. Steps and Data Sources**

The steps used in conducting this SLR follow general guidelines (Hiebl, 2021), namely: (1) analyzing the research questions; (2) establishing inclusion and exclusion criteria; (3) searching and selecting appropriate data sources; (4) conducting quality evaluation of data sources (validation); and (5) analyzing and interpreting the data results. The primary data source in this study is secondary data in the form of scientific articles indexed both globally and nationally.

### **2. Search Strategy and Databases**

The literature identification process was carried out during the period [State Month and Year of Search] through major academic databases covering both global and national literature, specifically: Google Scholar, ERIC (Education Resources Information Center), Portal Garuda, and DOAJ (Directory of Open Access Journals).

### **3. Inclusion and Exclusion Criteria**

These criteria were strictly applied to ensure the relevance and quality of the data sources. The categories in this regard include the focus topic, geographical context, publication type, and time limitation. The inclusion criteria are as follows: a) Articles related to educational leadership (school/madrasah principals) and 21st-Century challenges; b) Empirical studies or reviews relevant to the Indonesian context; c) Publications accessible via Google Scholar and other reliable sources (peer-reviewed journals); d) Published within the last 10 years (2015 – 2025) to ensure the relevance of contemporary issues. The exclusion criteria are a) Articles that focus solely on purely managerial/administrative aspects without discussing transformative or digital leadership issues; b) Studies that do not mention the Indonesian context, or focus on case studies in developed/Western countries; c) Grey literature (e.g., working papers, theses/dissertations, or news reports); d) Publications outside the 2015–2025 timeframe.

### **4. Quantitative Screening Process (PRISMA Style)**

The process of screening records is illustrated using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Flow Diagram to ensure full transparency. The process stages are a) Initial Identification: Records generated from database searches and other sources (e.g., reference snowballing); b) Screening: Unique records after removal of duplicates and examination of Title/Abstract, and Records excluded (not focused on Indonesian context or not a scientific study); c) Eligibility: Reports assessed for eligibility (full-text reading), and Reports excluded (e.g., case study focus too narrow, irrelevant data); d) Final Inclusion: The final number of articles included for qualitative synthesis.

## **5. Data Analysis Technique**

The data analysis techniques used are bibliographic annotation analysis and qualitative thematic synthesis. Bibliographic annotation is a brief summary compiled from each included article (Susanti et al., 2021). Several key aspects considered in data extraction are: (a) identification of the data source; (b) stating the purpose and qualifications; (c) a brief summary of the article source; and (d) the relevance of the article source in answering the research questions. Data extracted based on Author, Publication Year, Research Method, and Key Findings from the 20 included articles were then analyzed to identify thematic patterns, convergences, divergences, and research gaps.

## **RESULTS AND DISCUSSION**

### ***Results***

The requirements for discussing research to be published between 2021 and 2023 include publications taken from electronic sources by conducting data searches. Based on the results of the research that has been discussed, leadership is very important in an organization. Leaders have a major role in providing guidance and direction to achieve organizational goals. Although a lot of research has been done on leadership, there are still difficulties in understanding it. Sometimes leadership is seen as a process, but it is more appropriate to consider it as a basic skill that every individual should have. Entering the 21st century, Indonesia is faced with major global and multifaceted challenges, including globalization, technological disruption, and social and economic changes. These challenges directly affect the education sector, which needs to be more adaptive, innovative, and future-oriented. From a review of various national and international sources, it can be concluded that educational leadership plays an important role in directing educational transformation to meet the demands of the 21st century. Today's education leaders are expected to do more than just carry out administrative or managerial tasks.

Principal Leadership acts as the main catalyst that transforms macro policies (Independent Curriculum) into micro practices at the classroom level. This mechanism can be explained through the lens of Learning Leadership, Transformational Leadership, Digital Leadership. The principal leadership mechanism shapes teacher readiness for the independent curriculum. The implications of the principal leadership mechanism are as follows a) learning leadership namely the Coaching and Mentoring Mechanism of the Principal not only supervising, but actively becoming a co-learner and coach (companion) who facilitates KMT (Learning Community) discussions and provides specific feedback on RPP/teaching modules that are student-centered (differentiation). The results/impacts on teacher readiness are Increased Pedagogical Competence: Teachers feel supported to try new methods, reduce the fear of failure, and internalize the principles of Kampus Mengajar (a project to strengthen the profile of Pancasila students); b) Transformational Leadership, namely the Vision and Culture Strengthening Mechanism: The Principal articulates the vision of the Teaching Campus as a shared belief and provides professional autonomy to teachers to adapt the curriculum to the local context. The results/impacts on teacher readiness are Increased Motivation and Affective Commitment: Teachers feel empowered. Transformational Leadership reduces burnout caused by new policies and increases teacher commitment to change; c) Digital Leadership, namely

the Resource Facilitation Mechanism: The Principal ensures access to the Teaching Campus digital platform (e.g., the Merdeka Mengajar Platform) and provides training focused on utilizing technology for formative assessment and differentiation. Results/impacts on teacher readiness Technical Readiness: Teachers are able to manage hybrid learning and use assessment data for instructional decision-making, in accordance with the demands of the Merdeka Curriculum.

They must act as agents of change who can respond to the complexity of the era with a strong vision, the right strategy, and the ability to adapt to global and local dynamics. The ability to think strategically, encourage cross-sector collaboration, and incorporate technology into the education system are key indicators of successful education leadership. Research and literature highlight that effective education leaders in the 21st century are those who can connect policy with real practice on the ground. This means that the grand vision of national education, such as Golden Indonesia 2045, can only be realized if leadership at the school and regional levels is able to realize this vision in the form of concrete and impactful actions. Therefore, strengthening leadership competencies is a strategic investment for the future of Indonesian education.

### **1. Characteristics of the Challenges of the 21st Century**

Entering the 21st century era, the education sector is facing very rapid changes, related to technology, social, and culture. Future education leaders are required to be able to respond to global challenges in innovative, adaptive, and contextual ways. *First*, advances in digital technologies such as artificial intelligence, big data, and online learning have had a great impact on education. Leaders in this field need to have strong digital literacy skills and be able to apply technology well in the learning process and school management (Senge, 2000; Wagner, 2014; Adams *et al.*, 2017). *Second*, the process of globalization has increased the level of competition in various fields. This makes education leaders need to prepare students with 21st-century skills, such as critical thinking, cooperation, communication, and creativity, to prepare them to compete at a global level (Mohamad *et al.*, 2023).

*Third*, the existence of social inequality and limited access to education, especially in the 3T area, is a very significant challenge. This requires leaders who have high social concern and a commitment to maintaining equality in the quality of education. Effective leaders must be able to bridge existing gaps through inclusive policies and empower local communities (Taqwina *et al.*, 2022). *Fourth*, there is a change from a teacher-centered learning model to learning that focuses on students and is adjusted to individual needs (Aldhuhli *et al.*, 2022). This change requires education leaders to create a learning system that is flexible, adaptive, and empowers teachers to act as innovative learning facilitators. By understanding the characteristics of these challenges, it is important to redesign education leadership in Indonesia so that it can not only survive in the face of change, but also lead the transformation towards more relevant, equitable, and quality education.

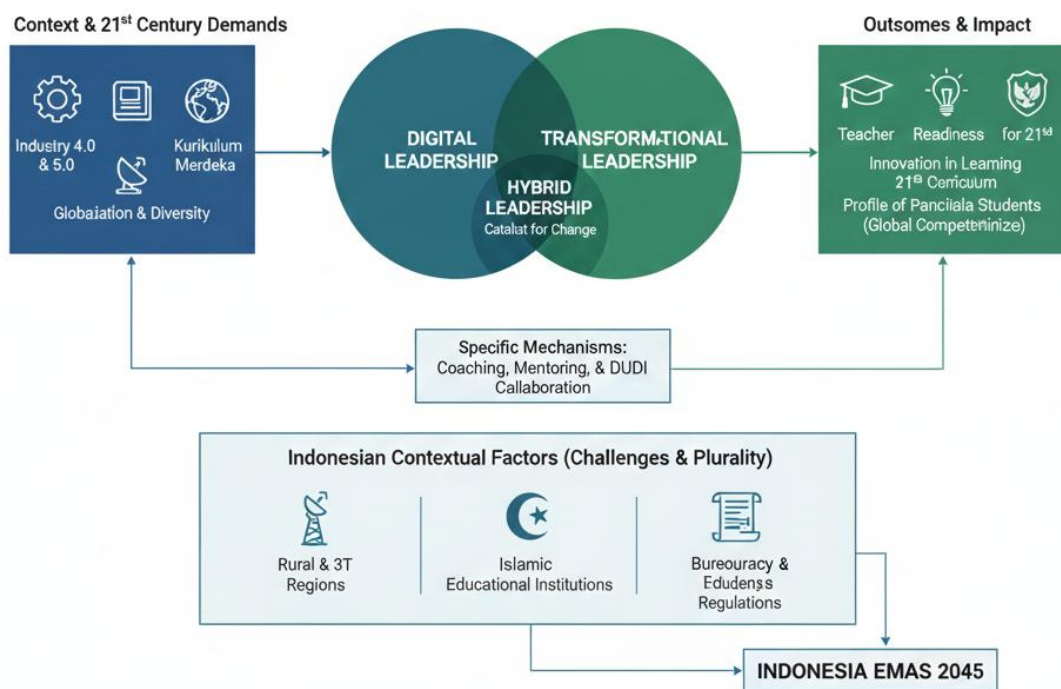
### **2. Characteristics of Future Education Leadership**

To face the increasingly complicated challenges in this era, a paradigm shift in education leadership in Indonesia is needed. Ideally, future education leaders must have a far-ahead vision, which means they must be able to imagine the future of education and align the

vision of schools or institutions with the direction of national development, as stated in the Golden Indonesia Vision 2045. This vision requires leaders to be not only reactive, but also proactive in designing long-term strategies based on global data and needs (Adams *et al.*, 2017). In addition, digital capabilities are one of the main foundations in educational leadership in the 21st century. A leader needs to understand and master technology to manage a data-based education system, increase access to digital learning, and encourage the application of technological innovation in schools (Widodo & Oktavia, 2023). However, just mastering technology is not enough. Leaders must also have social and emotional abilities such as empathy, effective communication skills, and the ability to create a positive organizational culture. These skills are essential for creating an inclusive and supportive learning environment (Goleman, 1998; Aldhuhli *et al.*, 2022). Furthermore, critical and reflective thinking skills are essential for leaders to assess existing policies and practices, as well as be open to input and change. This supports a continuous improvement process and innovation based on reflection on data and conditions in the field (Mulyadi, 2025). Finally, the leadership of the future requires a collaborative and participatory approach. A good leader is not the dominant one, but as a facilitator who can build cooperation between teachers, students, parents, and the community. Leadership like this will result in a mutually supportive and sustainable learning ecosystem (Senge, 2000).

Figure 1: Conceptual Framework

## 21st Century Educational Leadership Framework in Indonesia



**Figure 1.** 21st Century Educational Leadership Framework in Indonesia

### **3. The Strategic Role of Leadership in Educational Transformation**

Faced with rapid changes both at the global and national levels, leadership in education plays a key role in the transformation process. A reliable education leader functions as a transformation agent who actively encourages the implementation of national policies that include the Independent Curriculum, digital literacy, and character education. The Merdeka curriculum requires innovative and responsive leadership because it places teachers and students as the main participants in flexible learning methods that are in line with their interests (Muhyardho & Muttaqin, 2024). A leader who has a clear vision will ensure that the implementation of this curriculum is not only administrative, but also part of a relevant and meaningful learning culture. One of the key factors in such strategic roles is the ability to create an organizational culture that allows learning in a school or educational institution setting. This requires leadership that can foster cooperation, reflection, and continuous learning at all levels of the organization, from teachers to students and educational staff (Senge, 2000; Fullan, 2001). In addition, today's education leaders also need to build solid and synergistic cooperation with industry, universities, and surrounding communities. Cooperation between these various sectors is very important to connect the world of education with the actual needs in the job market and society (Adams et al., 2017).

Furthermore, an education leader must create space for innovation, by giving freedom and trust to teachers and students to try new learning methods. This atmosphere that supports experimentation and creativity will produce educational innovations that are in line with the times. Thus, leadership not only functions as a controller, but also as a facilitator that empowers all components of the school to continue to innovate (Widodo & Oktavia, 2023). This type of strategic leadership is what is needed to ensure that the educational transformation process is systemic and has the expected tangible impact.

Collaboration Mechanisms with Industry in the Indonesian Education Curriculum in this case are carried out through Collaboration with the business and industrial world (DUDI) is the core of vocational education (SMK) and is increasingly important in the context of the Independent Curriculum in public schools. The mechanism must be concrete in changing school programs (input) and student learning outcomes (output). The focus of collaboration is a) curriculum synchronization is carried out through Link and Match Curriculum Development: Industry participates in formulating Learning Outcomes and Teaching Modules, ensuring the skills taught are relevant to job market needs (for example, the latest cloud computing competencies). The impact on school programs is Study Program Relevance: Schools open new expertise concentrations or change the portion of practice/internship to 70% of the curriculum. Meanwhile, the impact on student learning is Increased Absorption: Students graduate with certification recognized by DUDI and reduce the skills gap after graduation; b) professional development is carried out through Knowledge Transfer and Co-Teaching: Industry practitioners become guest teachers or permanent mentors. The Principal facilitates teacher internships in industry for upskilling (skills improvement) according to the latest technology. The impact on school programs is Teacher Competency Improvement: Teachers teach with an understanding of the latest

field practices. While the impact on student learning is Contextual Learning: Students can solve real-world problems submitted by industry in the Teaching Campus Project; c) Facilities and Practice are carried out by Donation or Joint-Use Facilities: Industry provides advanced equipment at schools (for example, the latest CNC machines) or opens its facilities for student practice. The impact on school programs is Improved Quality of Facilities: Schools can train students with the same equipment standards as industry. While the impact on student learning is Job Readiness: Students are familiar with the environment and work discipline of industry before graduation.

#### 4. Internal and External Challenges

In an effort to encourage sustainable education, education leaders in Indonesia often face various challenges, both from within and without. Internally, one of the main obstacles is the lack of customizable and relevant leadership training. Many programs to develop principals and educational supervisors emphasize administrative aspects, rather than strengthening strategic leadership capabilities that can cope with local and global changes (Fullan, 2001; Mulyasa, 2013). This causes leaders to be less prepared to lead rapid and complex change. In addition, rigid bureaucracy also hinders innovation in schools. The rules that apply are usually *top-down* and do not provide full freedom to schools, thus limiting principals and teachers in innovating and adjusting learning methods according to the needs of students (Yusof et al., 2023). On the other hand, external challenges such as lack of infrastructure and technology, especially in 3T (frontier, outermost, disadvantaged) areas, lead to inequality in access and quality of education. Without adequate technological support, the implementation of online learning and technology-based school management becomes difficult if uneven (Taqwina et al., 2022).

The implementation of change is also greatly influenced by mental attitudes. Many education actors tend to reject updates, either due to a lack of understanding, fear of failure, or a sense of comfort with the existing situation. This attitude is a psychological and cultural challenge that needs to be overcome by education leaders through an empathetic communication approach that involves all parties (Goleman, 1998; Aldhuhli et al., 2022). By recognizing and understanding all of these challenges in depth, education leaders can devise more practical and effective intervention strategies.

Contextual Comparison of Leadership Challenges in Indonesia (Compliance with Diversity) This is an important section to link the literature findings to the diverse context you mentioned in the introduction. Educational Leadership Challenges in Indonesia are heterogeneous, influenced not only by the availability of technology, but also by socio-cultural factors and institutional regulations.

**Table 1.** comparison across educational institutions

Specific Challenges	of Urban Schools (Java/Provincial Capitals)	Rural Schools/3T (Frontier, Outermost, Underdeveloped)	Islamic Educational Institutions (Madrasahs)

Digital Leadership (KD)	Challenges: Information overload (digital fatigue) and the need for ethical leadership to manage cyber risks and misinformation.	Challenges: Limited infrastructure (electricity, internet), forcing KS to focus more on technological survival than innovation.	Challenges: Integrating Islamic values into digital leadership and using platforms that align with religious ethics.
Independent Curriculum	Challenges: Bureaucratic complexity and high demands for accountability for academic results discourage university research institutions from taking the risk of radical innovation.	Challenges: Limited human resources (certified teachers) and the inconsistency of KM teaching modules with the unique cultural/local context.	Challenges: Dual curriculum (Ministry of Religious Affairs and Ministry of Education and Culture curriculum) and the need for transformational leadership that can reconcile these two demands.
Duty and Industrial Collaboration	Challenges: Intense competition, requiring university research institutions to pursue exclusive collaboration niches (e.g., multinational corporations).	Challenges: The lack of formal industry in the region forces KS to collaborate with MSMEs or the local agricultural/maritime sector (a link and match challenge).	Challenges: Industry perceptions that sometimes lack understanding of the specifics of madrasah education programs (e.g., religious skills), making collaboration more difficult.

Quality vs. Access Challenges: In urban areas, leadership challenges are more centered on quality (innovation, digital ethics, data management), while in 3T areas, the basic challenge is access (infrastructure, human resources). The Role of Core Values: Islamic institutions demonstrate that 21st Century Educational Leadership is not only about technology and management, but also about how Ethical Leadership and Religious Values are integrated as a foundation for change, an aspect that is under-researched in studies of public schools.

## 5. Policy Direction and Strengthening Efforts

The future of education leadership in Indonesia must be guided by visionary policies and systemic strengthening strategies. One of the key steps is to improve institutions that develop educational leadership, such as the Institute for Principal Development and Empowerment (LPPKS), by ensuring that these institutions are more relevant to the challenges of the 21st century. Training programs for school principals and superintendents should be designed not only to meet administrative needs but also to equip them with transformative skills, including digital literacy, systemic thinking, and participatory leadership (Fullan, 2007; Mulyasa, 2013). In addition, combining technology and research in education management is important. Leveraging data for decision-making, using digital management platforms, and fostering a research culture in schools are important steps to create an adaptive and innovative educational ecosystem (Widodo & Oktavia, 2023). It must also be complemented by reforms in the recruitment and assessment systems of principals and supervisors, which are often bureaucratic and lack a focus on the competence and performance of visionary leadership. There is a need to strengthen the merit-based competency selection and assessment system to ensure that elected education

leaders can effectively drive transformation (Yusof et al., 2023; Sari & Ramadhani, 2023). In addition, increased cross-sector collaboration is essential to strengthen the education ecosystem. Governments, the business sector, research institutions, higher education, and local communities must work together synergistically in developing policies and programs that strengthen educational leadership. The collaboration not only expands the network of resources but also provides policy inputs that are based on field needs and relevant to local and global realities (Adams et al., 2017). With consistent, inclusive, and innovative policy directions, Indonesia's education leadership will be better prepared to face future dynamics and contribute to important goals such as the Golden Indonesia Vision 2045. To transform educational leadership in Indonesia, it is necessary to synchronize the roles of various stakeholders as follows:

**Tabel 2.** Matriks Implikasi Manajerial

Specific Actors	Required Managerial Actions	Target Output
Ministry of Education, Culture, Research, and Technology	Revitalizing 21st-Century Principal Competency Standards.	Regulations that adapt to Industry 4.0.
LPPKSPS / BBGP	Implementing coaching and digital leadership-based training.	Technically competent and inspiring principals.
Education Office	Debureaucratizing reporting and mediating partnerships between the industrial and business sectors (DUDI).	Efficient managerial time for academic supervision.
School Principal	Transforming the role of administrator into an agent of change and coach.	Teacher readiness for implementing the Independent Curriculum.

## CLOSING

The 21st century is marked by rapid changes in the technological, economic, social, and cultural fields. Education is also affected by these changes. In the midst of the industrial revolution 4.0 and towards 5.0, leadership in Indonesian education must be more adaptive, transformative, and have a vision. In the 21st century, educational leadership in Indonesia is not enough to be administrative, but must be able to carry out transformation. Future leaders must be able to be agents of change who connect global visions with local contexts, technology with humanism, and policies with real practices on the ground. To achieve a Golden Indonesia 2045, investment in educational leadership is essential.

## BIBLIOGRAPHY

Adams, D., Kutty, G. R., & Zabidi, Z. M. (2017). Educational Leadership for the 21st Century. *International Online Journal of Educational Leadership*. 1(1), 1–10. <https://ejournal.um.edu.my/index.php/IOJEL/article/view/5965>.

- Aldhuhli, R. A., Al Waaili, M. Z., Al Rashidi, R. N., & Al Kharusi, A. (2022). Future leadership characteristics among the principals of basic education schools. *Cypriot Journal of Educational Sciences*. 17(9), 3198–3217. <https://doi.org/10.18844/cjes.v17i9.7303>.
- Alfulana, M., W., Rapsjani, M., F., A., Fauzi, A. (2021). Leadership shapes character in education. *Journal of Indonesian Education (Japendi)*. 2(8), 1387-1394.
- Alifya, N., Zuhroh, D., Ramadhani, W., L., Fauzi, A. (2024). How is leadership in educational institutions. *Journal of UIN Banten*. 78-92.
- Bahrudina, Mufida, Nurmawati, Ribut, Sufiyanid, Suhermane. (2023). The essence and emotional urgency in the leadership of Islamic education (a conceptual analysis). *Diversity: A Postgraduate Scientific Journal*. 3(2), 130-148. DOI: 10.32832/djip-uika.v3i2.14478.
- Basuki, A., D., Budiman., Theodora, N., C., Fuad, A., Dwiyono, Y. (2024). A comparison of visionary leadership styles and transformational leadership styles in education. *Journal of Paleontology*, 7(2), 867-877.
- Fahmi, I.** (2012). *Leadership Management: Theory and Application*. Bandung: Alfabeta.
- Fika, N., Atiqoh., Bachtiar, M., Gunawan, A. (2023). The leadership model of ki hajar dewantara in education management. *Journal of Education and Teaching Review (JRPP)*. 6(4), 1286-1290.
- Fullan, M. (2001). *Leading in a Culture of Change*. San Francisco: Jossey-Bass.
- Fullan, M. (2007). *The New Meaning of Educational Change* (4th ed.). Teachers College Press.
- Goleman, D. (1998). *Working with Emotional Intelligence*. Bantam Books.
- Goreta., Japar, M., Sukardjo, M., Bahriah, E., S., Saepuloh, L. (2022). Development of characteristics, capabilities and pillars of digital leadership in educational institutions. *Journal of Basic Medicine*. 6(6), 10369-10382. <https://doi.org/10.31004/basicedu.v6i6.4859>.
- Handoko, T. H.** (2021). *Personnel and Human Resource Management*. Yogyakarta: BPFE.
- Hani, N., D., F., Amin, M., F., Athirah., Ramadhani, W., S., Arifin, N., A., Halik, A., Alwi, M. (2022). A successful principal leadership model. *Al-Tabyin Journal*, 2(1), 37-46.
- Hardianto, H., et al.** (2023). Revitalizing educational leadership: a comprehensive literature review of transformational leadership in indonesia academic settings. *AL-ISHLAH: Jurnal Pendidikan*. 15(1), 1–15. <https://doi.org/10.35445/alishlah.v15i1.4768>.
- Haryani, R., Lubis, M., J., Darwin. (2022). School principal's leadership style on teacher performance. *Journal of Basic Medicine*. 6(3), 3373-3383. <https://doi.org/10.31004/basicedu.v6i3.2617>.
- Hiebl, M. R. W. (2021). Sample selection in systematic literature reviews of management research. *Sage Journals*. <https://doi.org/10.1177/1094428120986851>.
- Judijanto, L., et al.** (2024). Assessing the role of school leadership in mediating the impact of teacher professional development on curriculum implementation in indonesia. *The Eastasouth Journal of Learning and Educations*. 2(03), 173–187. <https://doi.org/10.58812/esle.v2i03.373>.
- Kurniady, D. A., et al. (2020). *Analysis of 21st-century leadership in higher education management*. *Advances in Social Science, Education and Humanities Research*. 3(1), 109–115. <https://doi.org/10.2991/assehr.k.200130.150>.
- Labib, M., Akmadi, N. A., & Nurdin, M. R.** (2023). Building future leadership: the impact of information technology education in Indonesia. *National Educational Procedure: LPPM IKIP PGRI Bojonegoro*. 1(1), 1–10.
- Langeningtias, U., Ulfah, N., Novitasari, A. (2021). Educational leadership according to the perspective of the Quran. *Journal of Indonesian Education (Japendi)*. 2(8), 1453-1464.

- Mohamad, M., Palani, K., Nathan, L. S., Sandhakumarin, Y., Indira, R., & Jamila, E. (2023). Educational challenges in the 21st century: a literature review. *International Journal of Academic Research in Progressive Education and Development*. 12(2), 1221–1227. <https://hrmars.com/index.php/IJARPED/article/view/16865>.
- Muhibburrohman, O., Fauzi, A., & Qurtubi, A. (2024). 21st Century educational transformation: literature review on innovation in the context of modern education. *J-MIND (Jurnal Manajemen Indonesia)*. 9(1), 1–15. <https://doi.org/10.29103/j-mind.v9i1.16600>.
- Muhyardho, R. A., & Muttaqin, I. (2024). Challenges and leadership strategies in Islamic education management in the digital era. *Journal of Islamic Ethics*. 3(1), 65–75. <https://doi.org/10.61132/jbpai.v3i1.860>.
- Mukhlisin, A., YI, K., T., Yani, R., Qonita, B., Lestari, T., D. (2024). The role and challenges of leadership in implementing the management of Education organizations. *Journal of Tambusai Education*. 8(2), 28223-28228.
- Mulyadi, M. (2025). Visionary Leadership strategies in facing the challenges of 21st century education in junior high schools. *Edusiana: Journal of Educational Sciences*. 3(1), 14–23. <https://doi.org/10.70437/edusiana.v3i1.1088>.
- Mulyasa, E. (2013). *Becoming a Professional School Principal: In the Context of Succeeding MBS and KTSP*. Teenager Rosdakarya.
- Nadilah, T., Yasmini, Y., Amilda., Junaidah. (2024). The concept of educational leadership in an Islamic perspective: a literature review. *Indonesian Journal of Education*. 1(2), 58-62.
- Nasution, I. & Putra, A. (2023). Leadership duties of Islamic education. *Journal of Education and Teaching Review (JRPP)*. 6(4), 4421-4427.
- Nisa, K. (2022). Educational leadership in school-based management. *Al-Hadi Journal of Education Management*. 2(2), 20-22.
- Pertiwi, G., R., Maisah, Hakim, L. (2023). Leadership style in overcoming conflicts in educational institutions. *IHSAN: Journal of Islamic Education*. 1(2), 102-117.
- Putra, R., Nengsih, Y., Andi, A., Martha, A. (2025). Leadership theory in education: a culture-based approach to managing diversity. *Journal of Tambusai Education*. 9(1), 2087-2019.
- Rahayu, R., & Iskandar, S. (2023). *Transformational leadership of principals in 21st century learning in elementary schools*. *Journal of Elementary Education*. 6(2), 287–297.
- Rohman, H., Patoni, A., Maunah, B. (2023). The intersection of transformational leadership with visionary and situational leadership. *JMPI: Journal of Management, Education, and Islamic Thought*. 1(1), 45-66.
- Salsabilla, B., Lestari, F. I., Erlita, M., Insani, R. D., Santika, R., Ningsih, R. A., Triska., Mustika, D. (2022). Types and styles of educational leadership. *Tambusai Education Journal*. 9979-9985.
- Sari, R. P., & Ramadhani, H. (2023). Digital-based leadership transformation of school principals in the era of independent learning. *Journal of Educational Nusantara*. 5(2), 55–64. <https://doi.org/10.22202/jpnusantara.v5i2.1489>.
- Senge, P. M. (2000). *Schools That Learn: A Fifth Discipline Fieldbook for Educators, Parents, and Everyone Who Cares About Education*. Doubleday.
- Sitorus, D. S. P., & Meilani, Y. F. C. P. (2023). *Leading learning in the 21st century: challenges and strategies*. *Feedforward: Journal of Human Resource*. 4(2).
- Sundari, A., Masturoh, S., Sianturi, R. (2023). Harmony of early childhood education: establishing collaborative leadership between all stakeholders in Kartika kindergarten. *Journal of PENA PAUD*. 4(2), 25-36.

- Susanti, R., Sidik, D. Z., Hendrayana, Y., & Wibowo, R. (2021). Plyometric exercises in improving physical components: a systematic review. *Journal of Sport Science and Education*. 6(2), 156–171.
- Taqwina, A., Giatman, M., & Ernawati. (2022). School management leadership and challenges in the 4.0 era. *Indonesian Journal of Action Research*. 7(2), 45–52. <https://doi.org/10.29210/30031745000>.
- Wagner, T. (2014). *The Global Achievement Gap*. Basic Books.
- Wen, G. (2022). The influence of transformational and transactional leadership on the work motivation and work performance of structural officials of the Mappi district education office. *Journal of Humanities and Political Law (JIHHP)*. 2(1), 51-57.
- Widodo, M. A., & Oktavia, S. (2023). *Effective leadership of school principals in the 21st century: a comprehensive literature review*. *International Journal of Pedagogics*. 3(5).
- Yunianto, A., Purnomo, S., Sumardjoko, B., Fayhoni, A. (2024). The role of the principal in the leadership of Islamic Education in the Mutiara insani Klaten sit. *Didactics: Journal of Education*. 13(3), 4149-4157.
- Yusof, H., Zabidi, Z. M., & Kadir, S. A. (2023). The challenges of transformational leadership in school bureaucracy. *International Journal of Educational Administration*. 11(1), 44–57. <https://ijedadmin.org/vol11-issue1-2023>.