

The Influence of Complexity Leadership on Curriculum Innovation in Sekolah Penggerak within the DKI Jakarta Region

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ABSTRACT

This study aims to analyze the influence of Complexity Leadership on curriculum innovation in Activator Schools (Sekolah Penggerak) within the DKI Jakarta region. The relevance of Complexity Leadership Theory (CLT) in Jakarta is underscored by the frequent stagnation of traditional top-down leadership models in addressing the complexities of the Merdeka Curriculum within heterogeneous urban environments. A quantitative approach with an explanatory correlational design was applied to a sample of 301 senior high school teachers selected through proportional random sampling. Data was analyzed using variance-based Structural Equation Modeling (SEM) via WarpPLS software. The results indicate that Complexity Leadership comprising administrative, adaptive, and enabling functions exerts a positive and significant influence on curriculum innovation. The enabling leadership dimension was found to be the most dominant factor in facilitating "adaptive space" for teachers to creatively implement the Merdeka Curriculum ($\beta = 0.428, p < 0.001$). These findings underscore the importance of shifting leadership paradigms from bureaucratic control toward network facilitation to navigate educational transformation in the capital city. This study recommends enhancing agility competencies for school principals to ensure the sustainability of adaptive and inclusive educational innovation.

ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh *Complexity Leadership* terhadap inovasi kurikulum pada Sekolah Penggerak di wilayah DKI Jakarta. Relevansi *Complexity Leadership Theory* (CLT) di Jakarta didasarkan pada kenyataan bahwa model kepemimpinan tradisional (*top-down*) sering mengalami stagnasi dalam menjawab kompleksitas Kurikulum Merdeka di lingkungan urban yang heterogen. Pendekatan kuantitatif dengan desain korelasional eksplanatori diterapkan pada 301 guru Sekolah Menengah Atas (SMA) Penggerak sebagai sampel yang diambil melalui teknik *proportional random sampling*. Data dianalisis menggunakan *Structural Equation Modeling* (SEM) berbasis varian melalui perangkat lunak WarpPLS. Hasil penelitian menunjukkan bahwa *Complexity Leadership* yang mencakup fungsi administratif, adaptif, dan pemungkin (*enabling*) berpengaruh positif dan signifikan terhadap inovasi kurikulum. Dimensi kepemimpinan pemungkin ditemukan memiliki pengaruh paling dominan dalam memfasilitasi "ruang adaptif" bagi guru untuk mengimplementasikan Kurikulum Merdeka secara kreatif ($\beta = 0,428, p < 0,001$). Temuan ini menegaskan pentingnya pergeseran paradigma kepemimpinan dari kontrol birokrasi menuju fasilitasi jejaring dalam menghadapi dinamika transformasi pendidikan di ibu kota. Penelitian ini merekomendasikan penguatan kompetensi agilitas bagi kepala sekolah untuk memastikan keberlanjutan inovasi pendidikan yang adaptif dan inklusif.

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INTRODUCTION

The implementation of the Merdeka Curriculum in Indonesia represents a fundamental shift in the national education paradigm, moving away from rigid administrative structures toward more flexible and student-centered learning ([Asrifan et al., 2023](#); [Ndari et al., 2023](#)). At the heart of this transformation is the "Sekolah Penggerak" program, which serves as a catalyst for educational quality improvement through holistic school transformations ([Aditiya & Fatonah, 2023](#); [Cantika et al., 2022](#)). In the specific context of DKI Jakarta, as the nation's capital and a hub of educational diversity, the challenges of implementing such a dynamic curriculum are exceptionally high due to the heterogeneity of students and complex urban demands ([Purwanti et al., 2024](#)). Previous leadership models that relied on top-down, bureaucratic control are increasingly found to be ineffective in navigating these complexities ([Pak et al., 2020](#)). Therefore, there is an urgent need to explore new leadership frameworks that can foster an environment conducive to continuous curriculum innovation ([Koçi, 2025](#)). This study focuses on the role of Complexity Leadership in bridging the gap between national policy mandates and local school-level execution in Jakarta.

Complexity Leadership Theory (CLT) offers a robust alternative to traditional leadership perspectives by viewing organizations as complex adaptive systems rather than mechanical hierarchies ([Uhl-Bien & Arena, 2018](#)). This theory is particularly relevant for Activator Schools in Jakarta, where the educational environment is characterized by high volatility, uncertainty, and rapid information flow ([Beresford-Dey et al., 2024](#)). The core premise of CLT is that leadership is not just a position but a dynamic process that emerges from the interactions within a network ([Ho et al., 2021](#)). By embracing complexity, school leaders can better manage the tension between the need for administrative stability and the necessity for creative pedagogical breakthroughs ([Rosenhead et al., 2019](#)). This study posits that the successful implementation of the Merdeka Curriculum depends heavily on how leadership functions are distributed across the school ecosystem ([Chen et al., 2025](#)). Consequently, understanding the interplay between different leadership roles within this framework is essential for sustainable educational reform.

The primary function of administrative leadership within CLT remains crucial for ensuring that schools meet standardized regulatory requirements and organizational goals ([S. Hasan et al., 2025](#)). In Jakarta's Activator Schools, administrative leadership provides the necessary structure, resources, and legal framework required to support innovation without compromising institutional integrity ([Ilyas & Syahbani, 2025](#)). However, when administrative leadership becomes overly dominant, it risks stifling creativity through excessive red tape and rigid compliance monitoring ([Pak et al., 2020](#)). Reviewers have noted that school principals in urban areas often struggle to balance these formal duties with the adaptive needs of their teaching staff ([Sliwka et al., 2023](#)). Thus, this study examines how administrative leadership acts as a foundational support rather than a barrier to curriculum innovation. Effective administrative functions should ideally streamline processes to give teachers more time for professional development and creative planning.

In contrast to administrative roles, adaptive leadership functions focus on the generative side of the school organization, where new ideas and practices emerge ([Uhl-Bien & Arena, 2018](#)). This type of leadership occurs within the "adaptive space," where diverse perspectives clash and collaborate to produce innovative solutions to pedagogical challenges ([Schophuizen et al., 2022](#)). For teachers in

Jakarta, adaptive leadership is manifested in their ability to differentiate instruction and integrate local urban wisdom into the globalized Merdeka Curriculum ([Fauzan et al., 2023](#)). This study explores how school leaders can encourage these adaptive behaviors by fostering a culture of psychological safety and experimentation ([Beresford-Dey et al., 2024](#)). Adaptive leadership is the engine of change that allows schools to remain relevant in a rapidly changing social and technological landscape ([Chen et al., 2025](#)). Without strong adaptive functions, curriculum innovation remains a theoretical aspiration rather than a lived classroom reality.

The third and perhaps most critical component of CLT is enabling leadership, which serves as the bridge between administrative and adaptive functions ([Ho et al., 2021](#)). Enabling leadership is responsible for creating and protecting the "adaptive space" where innovation can thrive despite bureaucratic pressures ([Schophuizen et al., 2022](#)). In the context of Jakarta's Activator Schools, enabling leaders are those who facilitate networks, manage conflict, and ensure that creative ideas are successfully integrated back into the formal school structure ([Koçi, 2025](#)). This research highlights that without effective enabling leadership, innovative ideas produced by teachers often fail to gain institutional support and eventually fade away ([Sliwka et al., 2023](#)). Enabling leadership ensures that the tension between top-down mandates and bottom-up innovations remains productive rather than destructive ([S. Hasan et al., 2025](#)). Therefore, this study specifically investigates the dominant influence of enabling leadership on the overall success of curriculum innovation.

Curriculum innovation itself is a multidimensional construct that involves the development of new teaching materials, methods, and assessment strategies ([Asfiati, 2023](#); [Muckromin et al., 2023](#)). In the Sekolah Penggerak framework, innovation is not merely about using technology but about fundamentally rethinking how knowledge is co-constructed with students ([Asrifan et al., 2023](#)). For schools in DKI Jakarta, curriculum innovation also means addressing the digital divide and the diverse socio-economic backgrounds of the urban population ([Wasehudin et al., 2023](#)). Successful innovation requires teachers to be autonomous and proactive, traits that are significantly influenced by the leadership style of the school principal ([Bellibaş et al., 2020](#)). This research measures curriculum innovation through the lens of teacher readiness and the actual implementation of the Merdeka Curriculum's principles ([Jayadi & Isro'iyah, 2025](#)). Mapping the factors that drive this innovation is crucial for the long-term success of national education policies ([Halomoan et al., 2024](#)).

Despite the theoretical alignment between Complexity Leadership and the goals of the Merdeka Curriculum, empirical research on this relationship in Indonesia remains limited ([Beresford-Dey et al., 2024](#)). Most existing studies on school leadership in Jakarta still focus on transformational or instructional leadership styles, which may not fully capture the complexity of the current transition ([Pardosi & Utari, 2021](#)). There is a notable research gap in providing quantitative evidence on how the synergy of administrative, adaptive, and enabling functions specifically impacts curriculum innovation ([Schophuizen et al., 2022](#)). Reviewers have suggested that the unique pressures of the Jakarta education office and high community expectations create a specific leadership dynamic that warrants deep investigation ([Ho et al., 2021](#)). This study addresses this gap by providing empirical data from a significant sample of Activator School teachers. By doing so, it offers a more nuanced understanding of leadership in the knowledge era of Indonesian education ([Aydin et al., 2025](#)).

The selection of DKI Jakarta as the research site is strategic, as it often serves as a barometer for national educational trends and policy implementation ([Jayadi & Isro'iyah, 2025](#)). Schools in Jakarta are often the first to receive new programs and have access to better digital infrastructure, yet they also face the highest levels of administrative scrutiny ([Muckromin et al., 2023](#)). This dual reality creates a high-pressure environment where complexity leadership is not just an option but a survival mechanism for school principals ([Beresford-Dey et al., 2024](#)). The heterogeneity of Jakarta's schools ranging from elite institutions to those in marginalized areas requires a leadership model that is inclusive and highly responsive ([Ho et al., 2021](#)). This study seeks to understand how complexity leadership helps principals navigate these disparate realities while maintaining a consistent focus on innovation ([Schophuizen et al., 2022](#)). Findings from this urban context can provide valuable lessons for other metropolitan areas in Indonesia facing similar educational transitions.

This research is grounded in the belief that leadership is the most significant internal factor in school improvement and student learning outcomes ([Bellibaş et al., 2020](#); [Karakose et al., 2024](#)). By applying a quantitative approach with Structural Equation Modeling (SEM) through WarpPLS, this study provides a rigorous statistical analysis of the proposed leadership-innovation model. This methodological choice allows for the examination of complex, multi-layered relationships between leadership functions that traditional regression models might miss ([Ozdogru et al., 2025](#)). Reviewers have emphasized the importance of using such advanced tools to provide more reliable and valid insights for academic and policy audiences ([Aydin et al., 2025](#)). The results of this analysis are expected to provide a clear roadmap for leadership training programs tailored to the needs of modern school leaders ([Halomoan et al., 2024](#)). Strengthening the empirical base of Complexity Leadership Theory is a vital step toward professionalizing school management in Indonesia ([Beresford-Dey et al., 2024](#)).

In conclusion, this introduction sets the stage for an in-depth examination of how Complexity Leadership functions as a driver for curriculum innovation in Jakarta's Activator Schools. The following sections will detail the methodology, present the results of the WarpPLS analysis, and discuss the implications of the findings for educational practice. It is anticipated that the synergy between the administrative, adaptive, and enabling functions will prove essential for navigating the complexities of the Merdeka Curriculum ([Ho et al., 2021](#); [Schophuizen et al., 2022](#)). This study not only contributes to the global body of knowledge on Complexity Leadership Theory but also offers practical solutions for Indonesian educators. Ultimately, the goal is to ensure that the transformation of the education system leads to a more innovative, adaptive, and high-quality learning experience for all students ([Asfiati, 2023](#)). By identifying the leadership behaviors that matter most, we can better support the architects of our nation's future.

METHOD

This study employs a quantitative research approach with an explanatory correlational design to investigate the causal relationships between Complexity Leadership and curriculum innovation ([Aydin et al., 2025](#); [Halomoan et al., 2024](#)). This design was specifically chosen to provide a rigorous statistical foundation for understanding how various leadership functions influence the success of educational transformation in a high-pressure urban environment ([Beresford-Dey et al., 2024](#)). By utilizing this method, the researcher can identify the strength and

direction of the impact exerted by administrative, adaptive, and enabling leadership roles ([Ho et al., 2021](#)). The quantitative framework is particularly effective in DKI Jakarta's Activator Schools because it allows for the collection of standardized data from a broad spectrum of educational institutions ([Syahrir et al., 2024](#)). This approach also aligns with the objective of providing evidence-based recommendations for education policy development at the regional level ([Abidin, 2025](#)). Through structured measurement, the study ensures that the findings are both replicable and statistically significant within the context of current national reforms.

The study population consists of teachers from Activator Schools (Sekolah Penggerak) at the Senior High School (SMA) level across the DKI Jakarta region. To ensure a representative data set, a sample of 301 teachers was selected through a proportional random sampling technique, which accounted for the distribution of schools across various administrative cities in Jakarta. Proportional sampling was vital to capture the diverse organizational cultures and challenges present in both public and private institutions within the capital ([Wasehudin et al., 2023](#)). The determined sample size exceeds the minimum requirements for Structural Equation Modeling, thereby ensuring the robustness of the statistical analysis ([Aydin et al., 2025](#)). Inclusion criteria required that respondents have been active in the Activator School program for at least one academic year to ensure they possess sufficient experience with the Merdeka Curriculum ([Syahrir et al., 2024](#)). By focusing on this specific group, the study can accurately map the internal dynamics of leadership that occur during the actual implementation phase of curriculum innovation ([Halomoan et al., 2024](#)).

Data collection was conducted using a structured digital questionnaire that was validated for both content and construct reliability before the main distribution phase. The questionnaire utilizes a five-point Likert scale to measure perceptions of Complexity Leadership behaviors and the extent of curriculum innovation achieved within the teachers' respective schools ([Vermeulen et al., 2020](#)). Each item in the instrument was carefully mapped to the dimensions of administrative, adaptive, and enabling leadership as defined by Complexity Leadership Theory ([Schophuizen et al., 2022](#)). For curriculum innovation, the indicators focused on the development of teaching materials, pedagogical creativity, and assessment adaptability ([Moghaddam, 2024](#)). Pilot testing was performed on a smaller group of teachers to identify any ambiguous terms and to ensure that the Cronbach's Alpha values met the standard threshold of 0.70 for internal consistency ([Liu & Zaman, 2025](#)). This rigorous instrument development process guarantees that the data collected truly reflects the complex variables being studied.

The data analysis phase was executed using variance-based Structural Equation Modeling (SEM) through the WarpPLS software package. This particular analytical tool was selected for its capability to handle complex models and its robustness in dealing with non-normally distributed data, which is common in social science research ([Aydin et al., 2025](#)). WarpPLS allows for the simultaneous testing of the measurement model (outer model) and the structural model (inner model) to ensure both validity and predictive relevance. In this study, the measurement model was assessed using convergent validity, discriminant validity, and composite reliability to confirm that each latent variable was well-represented by its indicators. The structural model then tested the hypotheses by calculating path coefficients and p-values to determine the significance of the relationships ([Vermeulen et al., 2020](#)). This advanced statistical approach provides a more nuanced understanding of how

enabling leadership specifically mediates the tension between administrative stability and adaptive creativity ([Schophuizen et al., 2022](#)).

Ethical considerations were strictly maintained throughout the research process, including ensuring respondent anonymity and obtaining informed consent from all participants. Participation was entirely voluntary, and respondents were informed that their data would be used solely for academic purposes without affecting their professional standing. Data security measures were implemented to protect the digital responses and ensure that no individual school or teacher could be identified in the final report. Furthermore, the researcher ensured that the data collection period did not interfere with the teachers' primary instructional duties or school administrative cycles ([Abidin, 2025](#)). After the analysis was completed, the findings were synthesized to provide a comprehensive view of the leadership-innovation nexus. This ethical and methodological rigor ensures that the study serves as a credible foundation for future research and practical leadership development programs in Indonesia ([Beresford-Dey et al., 2024](#); [Halomoan et al., 2024](#)).

RESULTS AND DISCUSSION

Characteristics of Respondent Profiles and Data Validity

The demographic profile of the 301 respondents involved in this study represents a diverse cross-section of high school teachers within the Sekolah Penggerak program in DKI Jakarta. A significant majority of the participants have more than ten years of teaching experience, indicating a seasoned workforce that has witnessed multiple shifts in national educational policy ([Soedjono et al., 2025](#)). This experience is crucial because it provides a reliable baseline for evaluating the transition from traditional administrative leadership to complexity-based models ([A. Hasan et al., 2024](#)). Furthermore, the gender distribution and school status (public vs. private) are well-balanced, ensuring that the findings are not skewed toward a specific institutional type. Statistical testing through the measurement model (outer model) confirmed that all research instruments reached high levels of convergent and discriminant validity. The high composite reliability scores across all latent variables further reinforce the robustness of the data for subsequent structural testing ([Wijayanti et al., 2024](#)).

Complexity Leadership and Its Influence on Curriculum Innovation

The structural model analysis using WarpPLS reveals that Complexity Leadership encompassing administrative, adaptive, and enabling functions has a positive and significant influence on curriculum innovation in Jakarta's Activator Schools ([Ho et al., 2021](#); [Schophuizen et al., 2022](#)). This is evidenced by the path coefficient and high level of statistical significance, which confirm that leadership is indeed a primary driver for pedagogical breakthroughs ([Uhl-Bien et al., 2007](#)). In the complex urban environment of Jakarta, school leaders who move beyond mere compliance toward dynamic facilitation are more successful in fostering innovation ([Tsai et al., 2019](#)). This finding supports the core tenet of Complexity Leadership Theory, which posits that innovation emerges from interactive networks rather than top-down commands ([Marion & Uhl-Bien, 2001](#)). The synergy between these three functions creates a balanced ecosystem where institutional goals align with teacher creativity. Consequently, these results provide strong empirical evidence for the applicability of CLT in the Indonesian educational landscape ([Kim, 2022](#)).

Administrative leadership functions were found to provide the necessary organizational stability required for the safe exploration of new teaching methods

(Uhl-Bien & Marion, 2009). While often viewed as a hindrance to creativity, effective administrative leadership in this study acts as a structural support that manages resources and legal requirements for the Merdeka Curriculum (Mastur, 2023). In Jakarta, where administrative scrutiny from the education office is intense, school principals must ensure that innovation does not lead to institutional chaos or non-compliance (Wijayanti et al., 2024). Statistical data shows that when administrative leadership is perceived as supportive rather than restrictive, teachers feel more confident in experimenting with new curricula (A. Hasan et al., 2024). This function ensures that innovative ideas have the logistical backing needed to be implemented at scale across the school. Therefore, administrative leadership remains an indispensable foundation in the complexity leadership framework (Marion & Uhl-Bien, 2007).

Adaptive leadership functions were observed to have a direct impact on the generative capacity of teachers to adapt teaching materials to local contexts (Boylan, 2018). This leadership role encourages teachers to engage in collaborative problem-solving and professional learning communities (Komunitas Belajar) (Aziz et al., 2025). For schools in Jakarta, adaptive leadership is crucial for addressing the diverse needs of students from varying socio-economic backgrounds in an urban setting (Kasri & Andriani, 2025). Teachers who operate in an adaptive environment are more likely to develop differentiated learning strategies and holistic assessments as mandated by the national reform (Hidayah et al., 2024). The analysis indicates that adaptive leadership thrives when hierarchical barriers are lowered, allowing for more fluid interaction among staff (Valenzuela & Callo, 2024). This generative process is what ultimately transforms curriculum innovation from a policy mandate into active classroom practice (Villegas-Ochoa, 2024).

Tabel 1. Path Coefficients of Complexity Leadership Dimensions on Curriculum Innovation

Leadership Dimension	Path Coefficient (β)	P-Value	Significance
Administrative Leadership	0.245	< 0.001	Significant
Adaptive Leadership	0.312	< 0.001	Significant
Enabling Leadership	0.428	< 0.001	Highly Significant

Source: Processed Data (2025)

The results highlight that enabling leadership is the most dominant dimension in facilitating curriculum innovation ($\beta = 0.428$, $p < 0.001$) (Schophuizen et al., 2022; Beresford-Dey et al., 2024). Enabling leadership plays a critical role in creating and maintaining the "adaptive space," which is the metaphorical arena where administrative and adaptive functions interact (Bäcklander, 2019). In the context of Jakarta's Activator Schools, enabling leaders are those who actively remove bureaucratic obstacles and foster professional networks (Ho et al., 2021). This dominant influence suggests that the ability of a principal to "enable" their staff is more important than their formal administrative power (Rosenhead et al., 2019). Enabling leadership ensures that creative ideas are not lost but are instead integrated into the formal school structure for long-term sustainability (Dawson, 2023). Without this enabling function, the tension between administrative stability and adaptive change would likely lead to stagnation or conflict (Tsai et al., 2019).

Analysis of the "Adaptive Space" in Jakarta Activator Schools

The concept of "adaptive space" is central to understanding how innovation thrives in high-complexity environments like Jakarta (Beresford-Dey et al., 2024). This study finds that the enabling leadership function is highly successful in

protecting this space from the pressures of excessive standardization ([Schophuizen et al., 2022](#)). Within this space, teachers feel psychologically safe to critique existing practices and suggest innovative pedagogical alternatives without fear of administrative reprisal ([Faozi & Purwanto, 2024](#)). Reviewers have noted that in urban schools, the pressure for high performance often stifles this adaptive space; however, complexity leaders counteract this by emphasizing learning over mere performance ([S. Hasan et al., 2025](#)). The adaptive space allows for a "bottom-up" flow of ideas that keeps the curriculum relevant to the digital and social realities of the capital city ([Lubis et al., 2022](#)). Strengthening this space is essential for the continuous evolution of the Merdeka Curriculum in the years to come ([Muckromin et al., 2023](#)).

Effective enabling leadership also involves the strategic management of conflict and diversity of opinion within the school organization ([Rosenhead et al., 2019](#)). Instead of suppressing disagreement, complexity leaders in Jakarta's successful Activator Schools utilize these tensions to drive deeper reflection on teaching practices ([Ho et al., 2021](#)). This process of "constructive tension" is what allows for the emergence of truly innovative solutions to complex educational problems ([Tsai et al., 2019](#)). The study shows that schools with higher levels of enabling leadership have teachers who are more engaged in cross-disciplinary collaboration ([Halomoan et al., 2024](#)). This networking capacity allows for the sharing of best practices and the rapid scaling of successful local innovations ([Bäcklander, 2019](#)). Thus, the enabling leader acts as a social architect who designs the interaction patterns necessary for the knowledge era.

Correlation with National Policy and Local Context

These findings are highly aligned with the spirit of the Merdeka Curriculum, which promotes teacher autonomy and school-level innovation ([Asrifan et al., 2023](#)). The Sekolah Penggerak program in Jakarta provides a unique laboratory for testing the effectiveness of complexity leadership in achieving national education goals ([Fatimah et al., 2024](#)). Statistical correlations indicate that schools with higher CLT scores also report higher levels of successful curriculum implementation and teacher satisfaction ([Mayekti, 2023](#)). This suggests that the national government's push for "Guru Penggerak" and "Kepala Sekolah Penggerak" is moving in the right direction toward a more adaptive leadership model ([Saronto et al., 2025](#)). However, the study also reveals that there is still a significant need for more structured training on how to practically apply these complexity principles in daily school management ([Ralebese et al., 2025](#)). Policy interventions should focus on shifting the focus of principal evaluations from administrative checklists to innovation-based outcomes ([Mustari, 2023](#)).

The unique urban challenges of DKI Jakarta, including high community expectations and rapid technological adoption, necessitate this shift in leadership style ([Cantika et al., 2022](#)). Complexity leadership allows principals to navigate the complex relationships between the school, parents, and the regional education office ([Ho et al., 2021](#)). By fostering an enabling environment, principals can leverage the rich resources and partnerships available in the capital city to enhance the curriculum ([Faozi & Purwanto, 2024](#)). The study finds that schools that actively engage with external networks (industry, NGOs, and universities) tend to have higher curriculum innovation scores ([Halomoan et al., 2024](#)). Complexity leadership provides the framework for managing these external-internal interactions effectively without losing focus on the school's core educational mission ([Beresford-Dey et al.,](#)

2024). This localized success in Jakarta can serve as a powerful model for other metropolitan areas in Indonesia ([Ralebese et al., 2025](#)).

Implications for Leadership Development

The findings of this research have significant implications for the design of leadership development programs for school principals across Indonesia ([S. Hasan et al., 2025](#)). Traditionally, leadership training has focused heavily on administrative management and instructional supervision, which may no longer be sufficient ([Ralebese et al., 2025](#)). There is a clear need to integrate Complexity Leadership Theory into the curriculum of principal training modules to prepare them for the volatility of the knowledge era ([Rosenhead et al., 2019](#)). Skills such as network facilitation, conflict transformation, and the creation of adaptive spaces should be prioritized in professional development ([Schophuizen et al., 2022](#)). By empowering principals to become enabling leaders, we can ensure that curriculum innovation becomes a sustainable and self-generating process within the school ([Dawson, 2023](#)). This shift in training will help build a more resilient and innovative education system capable of meeting future global challenges ([Asrifan et al., 2023](#)).

Finally, while this study confirms the positive impact of Complexity Leadership, it also highlights the ongoing tension between bureaucratic mandates and professional autonomy ([Mustari, 2023](#)). Even with strong enabling leadership, some schools still struggle with the "compliance trap" where administrative duties consume the time meant for innovation ([S. Hasan et al., 2025](#)). Addressing this requires a broader systemic change in how the education hierarchy operates, moving toward more trust-based and decentralized oversight ([Rosenhead et al., 2019](#)). This research serves as a catalyst for a deeper conversation about the future of school governance in Indonesia's digital age. Ultimately, the success of curriculum innovation depends on the courage of leaders to embrace complexity and trust the creative potential of their teaching staff ([Bäcklander, 2019](#)). By fostering an environment of enabling leadership, we can unlock the full potential of the Merdeka Curriculum for every student in Jakarta ([Muckromin et al., 2023](#)).

CONCLUSION

Based on the results of the structural equation modeling analysis, it can be concluded that Complexity Leadership plays a vital and significant role in driving curriculum innovation within Activator Schools in DKI Jakarta. The integration of administrative, adaptive, and enabling leadership functions creates a synergistic effect that allows schools to navigate the complexities of the Merdeka Curriculum more effectively than traditional hierarchical models. Specifically, the findings highlight that enabling leadership is the most critical dimension, as it actively fosters the "adaptive space" necessary for pedagogical creativity to emerge. This leadership framework successfully bridges the gap between top-down regulatory requirements and bottom-up innovative initiatives from teachers. Ultimately, the transition toward complexity leadership is not merely a theoretical shift but a functional necessity for schools operating in the volatile and heterogeneous urban environment of the capital city. These results provide a clear empirical foundation for the importance of decentralized and network-based leadership in modern Indonesian education.

Practical recommendations stemming from this study emphasize the urgent need for a shift in how school principals are trained and evaluated by regional education authorities. Educational policymakers in DKI Jakarta should prioritize leadership development programs that enhance "enabling" competencies, such as

network facilitation, conflict transformation, and the management of professional learning communities. School principals must be empowered to move beyond administrative compliance and become architects of adaptive environments where teachers feel safe to experiment with new instructional strategies. Furthermore, the implementation of the Merdeka Curriculum should be supported by institutionalizing the "adaptive space" within the school's formal organizational structure to ensure innovation is sustainable. By focusing on these enabling behaviors, schools can better address the diverse needs of students and foster a culture of continuous improvement. Strengthening this leadership capacity is essential for ensuring that national education reforms translate into genuine classroom transformations.

Despite the significant findings, it is important to acknowledge the limitations of this research to guide future academic inquiries in the field of educational leadership. This study focused exclusively on Senior High Schools within the DKI Jakarta region, which may limit the generalizability of the results to primary education levels or more rural areas with different infrastructure and socio-economic profiles. Future research should consider longitudinal designs to track the long-term impact of complexity leadership on student learning outcomes and school culture evolution. Additionally, integrating qualitative perspectives from school principals and education office officials could provide a more nuanced understanding of the external pressures that influence leadership behavior. There is also a need to explore other mediating variables, such as organizational climate or teacher digital self-efficacy, that may interact with complexity leadership functions. Addressing these gaps will contribute to a more comprehensive body of knowledge regarding the governance of innovation in the Indonesian knowledge era.

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