

Research Article

Female Superintendents and Complex Adaptive Systems Leadership

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Abstract

Female superintendents face a unique set of challenges as the leadership models offered by traditional educational leadership programs are undergirded by patriarchal and technocratic ideologies that promulgate top-down decision-making. These models are insufficient in addressing complex educational issues such as closing the achievement gap, promoting equity, and meeting diverse student needs (Brown et al., 2023). Research suggests that antiquated leadership models have proven to limit new leaders, coupled with the lingering symptoms of COVID-19 (Arundel, 2022; Fidanboy, M., 2022; Fasel, 2023; Author, 2022). This paper examines how female superintendents can apply complex adaptive systems leadership (CASL) in a volatile, uncertain, complex, and ambiguous (VUCA) K-12 educational environment.

Key Words

Female superintendents, educational leadership, complex adaptive systems leadership, volatile, uncertain, complex, and ambiguous (VUCA) environments

Female superintendents face a unique set of challenges as the leadership models offered by traditional educational leadership programs are undergirded by patriarchal and technocratic ideologies that promulgate top-down decision-making. These models are insufficient in addressing complex educational issues such as closing the achievement gap, promoting equity, and meeting diverse student needs (Brown et al., 2023).

Research suggests that antiquated leadership models have proven to limit new leaders; this, coupled with the lingering symptoms of COVID-19, has significantly contributed to the mass exodus of female superintendents (Arundel, 2022). It is time to change this narrative. Implementing successful leadership models is hindered when training is rooted in traditional approaches (Author, 2022; Milosevic et al., 2019). Exploring and implementing leadership models that support and empower female leaders is essential to create more equitable and effective educational systems.

One such model is Complex Adaptive Systems Leadership (CASL), which offers a framework for understanding and managing the dynamic interactions and emergent behaviors within educational organizations. CASL is not just a model; it is a mindset. It emphasizes adaptability, collaboration, and the ability to respond to changing conditions. It is well-suited for today's schools' complex and ever-evolving environments, providing a promising anchor in uncertain times (Fidanboy, M., 2022; Author, 2022).

Limitations in Addressing Complex Educational Challenges

It is time to recognize the limitations of traditional leadership models when addressing complex educational issues like closing the achievement gap, promoting equity, and

meeting diverse student needs. These challenges involve multiple stakeholders and interconnected factors that cannot be managed through top-down directives alone. This realization should strongly motivate us to embrace new, more effective models.

Traditional models, with their emphasis on stability and control, can stifle innovation and adaptability. This rigidity can prevent schools from evolving in response to changing demographics, new technologies, and societal shifts. In a volatile, uncertain, complex, and ambiguous (VUCA) world, where adaptability is critical, leaders who rely solely on these methods may find themselves struggling. The urgency of adapting to this new reality cannot be overstated (Sum, 2022).

Additionally, traditional leadership models often fail to engage the broader school community. By centralizing decision-making, these models can alienate teachers, staff, students, and parents. Without their active participation, even well-intentioned initiatives may struggle to succeed. Superintendents face heightened ecological and environmental factors and complex challenges in improving district-level educational outcomes for students in more VUCA environments that require a shift from dominant traditional (hierarchical and control) leadership approaches. Preiser, et.al., 2018).

Women & Superintendency

According to Bell (1988), androcentricity produces information that is one-dimensional about "what male leaders thought and did" (p. 34). Consequently, researchers have begun to investigate female superintendent experiences in the K-12 educational leadership system from the females' perspectives. Over three decades have elapsed since Bell's (1988) work cited above, in which some progress has been made toward producing research on the superintendency that includes female

perspectives (Brantley, 2024; Smith, 2022; Miller, 2022).

There is some research highlighting how female superintendents implement a complex adaptive systems leadership (CASL) framework in educational environments (Dehmer, 2024; Gildersleeve-Hernandez, 2024; Hernandez, D., 2024); however, the literature on the change process from traditional leadership to a CASL approach for female superintendents is scant. This gap presents a unique opportunity to explore complex adaptive systems leadership theory as understood from a female superintendent perspective (Dehmer, 2024; Arriaga et al., 2020; Cassidy et al., 2021).

Traditional leadership theory continually excludes the experiences and voices of women (Pianta, 2020; Miller, 2022). Although women make up over 70% of the educational profession, women remain grossly underrepresented as superintendents (Grogan & Nash, 2021). Nestled in the experience of female superintendents is a burgeoning nexus between ecological innovation and a paradigm shift in leadership adaptation and practice. Educational leadership training should provide a space for female superintendents' perspectives, perceptions, and thoughts on the superintendency utilizing complex adaptive systems leadership (Shaw, 2022; Pianta, 2020; Author, 2022; Bell, 1988).

Complex Adaptive Systems Leadership

CASL shifts away from rigid hierarchies, emphasizing flexibility, adaptability, and decentralized decision-making (Carmichael & Hadžikadić, 2019; Author, 2022). Admittedly, current literature situates complex adaptive

systems as an emerging construct in leadership (McGregor, 2020), where scholars attempt to develop an overarching theory for leading in complex environments, drawing inspiration from complexity, biology, and leadership.

Some leadership scholars draw heavily upon complexity theory to describe common elements of a complex environment: a) emergence, b) adaptation, and c) unpredictability. Complex adaptive leadership values adaptability, pattern sensing, and emotional intelligence. These skills and competencies enable leaders to navigate through emergent contexts while engendering the trust of their followers.

More specifically, Boal and Schultz (2007) posited that within a complex adaptive system, “surprising and innovative behaviors can emerge from the interaction of groups of agents, seemingly without the necessity of centralized control” (p. 412). Some superintendents are adopting CASL in response to traditional leadership's limitations. It views schools and districts as dynamic, interconnected systems where leadership is distributed across various levels.

CASL's adoption addresses the need to manage the uncertainties and rapid changes in modern education, such as technological advancements, diverse student needs, and shifting policies. Unlike a one-size-fits-all approach, CASL allows institutions to tailor strategies to specific contexts and evolve with changing circumstances. This adaptability is critical to maintaining effectiveness in an increasingly complex world (Fidanboy, 2022). Adopting CASL involves embracing behavioral tools and strategies to enhance the superintendents' ability to respond to change, foster innovation, and build resilience.

These tools include:

- *Decentralization of Authority*: CASL promotes distributing decision-making power across the organization, empowering teachers, staff, and students to take ownership. This approach fosters engagement, accountability, and the development of more responsive, context-specific solutions.
- *Emphasis on Emergence*: CASL leaders create conditions for new ideas and solutions to emerge organically rather than relying on top-down directives. They foster a culture of experimentation, encouraging individuals to try new approaches, learn, and share insights.
- *Adaptive Leadership*: CASL leaders navigate uncertainty and change, understanding that complex systems often require trial and error. They remain flexible and adjust strategies as new information emerges.
- *Systems Thinking*: CASL encourages leaders to see the organization as an interconnected system, where changes in one area can ripple throughout. This perspective helps leaders anticipate consequences and consider the broader impact of their decisions.

By embracing decentralization, emergence, adaptive leadership, and systems thinking, CASL creates more responsive, innovative, and resilient institutions. As schools face 21st-century complexities, CASL offers a flexible, forward-thinking path, empowering leaders to meet the needs of all stakeholders.

CASL Strategies Employed by Female Leaders

The following section reflects research that recounts CASL strategies employed by female leaders to illustrate the approach's versatility and the various ways it can be implemented.

For example, female leaders in K-12 education employed adaptive strategies during the pandemic, leveraging collaboration, communication, and empathy skills. They prioritized open communication with staff, students, and parents, providing regular updates and creating support channels.

These leaders demonstrated flexibility by working with their teams to develop innovative solutions for remote learning. Some implemented hybrid models to meet diverse

needs, while others enhanced social-emotional support, recognizing the crisis's impact on mental health. Taking a holistic approach, female leaders addressed both academic and social-emotional competencies (Preiser, 2018).

For example, they ensured support for vulnerable students through meal programs, counseling, and resources for parents—their inclusive and compassionate leadership maintained trust and confidence during this period of uncertainty.

Utilizing CASL strategies, some female superintendents were able to pivot, adjust strategies, and embrace uncertainty, often making decisions with incomplete information (Smith, 2022). Their ability to maintain clear communication and transparency was instrumental in stabilizing the ever-changing environment of the pandemic.

Leaders who communicated openly about challenges and decisions fostered trust and unity within their school communities, emphasizing the importance of building solid relationships and a culture of trust. The

pandemic further underscored the importance of equity and inclusion. The pandemic underscored the importance of equity in leadership as well. Superintendents who directly addressed disparities supported their students and staff more effectively, reinforcing the need to prioritize equitable policies and practices, especially for the most vulnerable students.

As schools recover, superintendents must commit to creating inclusive environments that support all students. This may involve new policies addressing systemic inequities and ensuring access to necessary resources.

Implications for Future Leadership Education & Training

Volatility, uncertainty, complexity, and ambiguity will continue to shape K-12 education's future. Leadership development programs must prepare future leaders to navigate these challenges with adaptive strategies, moving beyond traditional, linear approaches.

Training should focus on building resilience, fostering innovation, and promoting continuous learning. Superintendents must anticipate and respond to change, manage uncertainty, and lead through complex challenges. This includes developing problem-solving skills, critical thinking, and decision-making in ambiguous situations. Encouraging a growth mindset is crucial, as is viewing challenges as opportunities for learning (Price, 2023).

Educational institutions should also emphasize collaboration and networking, which explicitly trains superintendents to leverage team expertise and build supportive networks. This collaborative approach enhances individual leadership capacity and district-level resilience (Fasel, 2023). Promoting gender

equity, creating inclusive environments, and incorporating CASL principles are vital strategies for preparing leaders in a VUCA world. By embracing these practices, institutions can develop leaders equipped to navigate the complexities of modern education, fostering resilient and inclusive schools. Flexibility and adaptability have emerged as crucial tipping points, showing that traditional, rigid leadership approaches are insufficient in crises.

The lessons of the COVID-19 pandemic have significant implications for the future of K-12 superintendency. Superintendents must prioritize adaptability and flexibility, recognizing that the educational landscape will remain fluid (Powell et al., 2023). This may involve rethinking traditional models and adopting more decentralized, collaborative approaches like Complex Adaptive Systems Leadership (CASL) (Chace, 2019).

Communication and transparency should also remain critical priorities. Open lines of communication with stakeholders are crucial, primarily as schools address post-pandemic challenges like learning loss and students' social-emotional needs.

The adaptive strategies female leaders employed during the pandemic provided valuable insights into navigating future challenges. The pandemic has highlighted the need for resilient, compassionate, and equity-focused leadership, offering an opportunity to build more robust, inclusive educational systems.

Future-driven research could examine "How superintendents implement complex adaptive systems leadership tools within a VUCA environment? Do superintendents understand that traditional leadership approaches of prediction, control, and authority can lead to micromanaging?" The traditional

technical approach of command, control, and prediction is no longer adequate. To meet the challenges of the VUCA environment in the Knowledge Era, it must include complex adaptive systems leadership.

Conclusion

This exploration of K-12 superintendents highlights the importance of centering women in superintendency roles, the transformative potential of Complex Adaptive Systems Leadership (CASL), and the impact of their gendered perspective during times of volatility, uncertainty, complexity, and ambiguity. As the educational landscape evolves, ongoing reflection, adaptation, and research are essential to ensure effective and equitable leadership.

Several areas for future training include the application of CASL principles in K-12 education. While CASL is studied in other fields, its impact on educational leadership, especially in diverse and under-resourced schools, needs more exploration. Educational leadership training institutions could examine how CASL can be tailored to address

challenges like equity gaps, student engagement, and superintendent retention. The intersectionality of race, gender, and other identities in leadership also warrants further study.

Although strides have been made in understanding the challenges faced by females and females of color, additional research is needed to explore the experiences of other marginalized groups, including leaders with disabilities and those from various cultural and socio-economic backgrounds.

Research could focus on the pandemic's long-term effects on leadership practices, the role of technology, and strategies that effectively supported students, staff, and communities during the crisis. Further exploration of CASL principles, a deeper understanding of intersectionality, and lessons from the COVID-19 pandemic will shape the future of K-12 superintendents. By centering females in leadership and fostering inclusive environments, leaders can better meet the needs of all students in a complex world.

Author Biography

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