

Prepared to Lead: A Theory of Disaster-Responsive Leadership in Higher Education

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Abstract—This study presents a theory of disaster-responsive leadership in higher education using a deductive-axiomatic approach. In response to the Philippines' high vulnerability to natural disasters, the theory addresses the need for leadership models that integrate preparedness, resilience, and community collaboration. Drawing from existing literature, three axioms were formulated focusing on educator leadership, stakeholder partnerships, and integrated support systems. These axioms guided the creation of propositions that form the basis of a six-pillar model: educator as leader, collaborative alliances, curriculum integration and simulation, technology-driven engagement, mental health and resilience, and continuous capacity building. The theory emphasizes the pivotal role of educators in modeling preparedness and fostering a culture of readiness within institutions. This framework aims to contribute to the curriculum design, leadership development, and institutional policies in higher education. It also serves as a foundation for future empirical research in disaster risk reduction and educational leadership.

Keywords—Disaster-responsive leadership, higher education, educational leadership, disaster preparedness, resilience education, curriculum integration, mental health support, stakeholder collaboration, axiomatic theory, teacher education.

I. INTRODUCTION

The development of a theory on disaster-responsive leadership in higher education is pivotal in enhancing the preparedness and effectiveness of future leaders within disaster scenarios. With increasing global challenges arising from climate change, pandemics, and other crises, universities have a crucial role in equipping students, particularly in educational domains, with the necessary leadership skills to respond effectively to disasters and health emergencies. The integration of disaster-responsive leadership theories into higher education can foster a deeper level of preparedness and collaboration among students.

The context of disaster-responsive leadership within educational settings, particularly in the Philippines, is of paramount importance. The Philippine archipelago's vulnerability to various natural disasters necessitates the educational institutions not only equip students with academic knowledge but also instill competencies for effective disaster response. This multifactorial approach mandates the development of a curriculum that nurtures disaster literacy, psychological preparedness, and leadership qualities essential for navigating crises.

At its core, the integration of disaster education into the educational framework emphasizes the importance of leadership that fosters student readiness and resilience.

Transformational leadership, characterized by the ability to inspire and motivate students to engage actively with their learning environment, plays a crucial role in this context Toprak (2020). Effective leaders in educational settings can influence the overall culture of preparedness by setting a tone that values continuous improvement, preparedness, and responsive action. Research has illustrated that leadership has a significant impact on educational outcomes, making it imperative for school leaders to devise strategies that cultivate these competencies among students (Hallinger & Kovačević, 2021).

Developing a cohesive theory of disaster-responsive leadership is crucial due to the country's high vulnerability to natural disasters such as typhoons, earthquakes, and floods. The integration of disaster risk reduction (DRR) and management into educational curricula has become a pivotal focus for educational authorities. This curricular integration aims to create a culture of safety and resilience among students, ensuring they possess the knowledge and skills necessary to respond effectively to disasters.

The Department of Education in the Philippines (DepEd) as well as the Commission on Higher Education (CHED) has implemented the Philippine DRRM Act of 2010 to initiate disaster risk reduction management in schools, emphasizing the need to assess students' capabilities in DRR and highlighting a national commitment to fostering a resilient youth equipped to handle emergencies Cabuga & Cañete (2023).

In light of this context, the present study aims to formulate a theory of disaster-responsive leadership specifically designed for higher education institutions. This theory seeks to establish a systematic framework for educational leaders and policymakers to improve disaster preparedness among students by integrating existing research and finding fundamental principles through a deductive-axiomatic approach. Ultimately, fostering disaster-responsive leadership in universities will enhance individual and institutional resilience, while also aiding in the development of safer, more adaptable communities equipped to manage the increasing challenges of global and local disasters.

II. REVIEW OF RELATED LITERATURE AND STUDIES

Disaster preparedness education is essential for equipping students with the necessary skills and knowledge to respond effectively to emergencies. Through a structured curriculum that emphasizes DRR principles, students can develop practical competencies alongside theoretical understanding.

Studies indicate varying levels of awareness and preparedness regarding disaster risks among high school students in the Philippines, underscoring the need for comprehensive disaster education within the K–12 curriculum (Agustin & Cabansag, 2023; Matunhay, 2022). Engaging students through contextualized learning ensures that they comprehend the importance of disaster preparedness and develop hands-on skills relevant to their communities. This educational approach not only builds individual capacities but also strengthens community resilience by promoting an informed citizenry capable of responding to disasters.

Furthermore, collaboration between different educational institutions is vital in cultivating a robust framework for disaster-responsive leadership. University networks can serve as a bridge to foster knowledge sharing and best practices in disaster risk reduction education. Institutions must engage in collaborative efforts to create impactful programs that address the unique vulnerabilities faced by communities (Abedin & Shaw, 2015). Such partnerships can enhance the dissemination of disaster preparedness knowledge, particularly in high-risk areas where educational resources may be limited. Collaborative initiatives can also provide platforms for experiential learning, enabling students from various disciplines to tackle real-life disaster scenarios (Buschlen & Goffnett, 2013).

In addition to enhancing curricular content, implementing practical drills and simulations is essential for preparing students for actual disaster scenarios. Research shows that engaging students in simulated emergencies fosters critical thinking, teamwork, and leadership skills that are paramount during disasters (Rogayan & Dollete, 2020). By applying classroom knowledge to pragmatic situations, students gain confidence and competence in emergency management, leading to improved preparedness and better outcomes in actual disaster situations. Community-based disaster preparedness initiatives can significantly enhance students' readiness and understanding of local risks and resource mobilization techniques.

The mental health and psychological well-being of students during disasters is another critical area that educational institutions must address within a disaster-responsive leadership framework. Entering higher education is often a stressful time and can be exacerbated by natural disasters. Consequently, universities must implement mental health support systems to help students cope with the pressures associated with disaster preparedness and response (Barrable et al., 2018). Establishing comprehensive support systems, including counseling and stress management resources, fosters resilience among students.

Moreover, the need for effective disaster communication plans within educational institutions is paramount. A well-structured disaster communication strategy is vital for ensuring that information disseminated during crises is timely, accurate, and accessible. Plans should outline staff roles and responsibilities, establish communication protocols, and specify how information will reach students and the wider community. A proactive communication strategy enhances trust within the institutional framework and decreases panic

during crises (Niolo, 2024). Actively involving students in developing and participating in these communication strategies cultivates a sense of ownership and responsibility among the student body.

Understanding the factors influencing educational outcomes in disaster risk management is critical for the formulation of effective policies and programs. Educational initiatives must identify barriers to disaster preparedness, such as lack of resources, insufficient training, and inadequate infrastructure. Targeted interventions addressing these gaps can significantly enhance the effectiveness of disaster education programs (Gotangco et al., 2020). For example, methodological enhancements in pedagogical approaches, such as incorporating Kolb's experiential learning model, can improve student engagement and knowledge retention regarding disaster preparedness (Agustin & Cabansag, 2023).

To achieve an integrated approach to disaster education, policymakers should include disaster literacy as a core competency within the broader educational framework. By embedding disaster education into various subjects and levels, education systems can ensure that all students are equipped with fundamental disaster preparedness skills. Engaging various educational stakeholders in creating an updated and relevant curriculum is crucial for advancing disaster risk reduction education (Sarong, 2023). Moreover, transcending traditional educational boundaries to encompass non-academic aspects, such as community involvement and volunteerism, can enrich the learning experience.

III. METHODOLOGY

This study used a deductive-axiomatic method to develop a theory. This method relies on established literature to identify universal truths (axioms) from which propositions can logically be derived (Dubin, 1978; Lunenburg, 2011). This strategy is especially effective in formulating new leadership models in areas where empirical theories are still emerging, such as disaster preparedness in higher education. It offers a structured approach to conceptually exploring complex and multidimensional phenomena (Wacker, 1998).

The process of theory generation began with a systematic review of literature on disaster risk reduction (DRR), educational leadership, curriculum development, mental health in crises, and stakeholder collaboration. From this review, three axioms were identified based on their consistency across various academic sources and their relevance to the context of disaster responsiveness in schools. These axioms, treated as self-evident truths, provided the foundation for generating propositions that define the logical and relational pathways underpinning disaster-responsive leadership in higher education.

This deductive-axiomatic design of theory generation looked into the literature to establish self-evident truths out of which propositions were generated ultimately leading to the generation of the Theory Disaster-Responsive Leadership. These axioms and propositions are summarized in Table 1.

This theory is built upon three key axioms: (1) Educators serve as frontline leaders in shaping a culture of disaster preparedness (Afrianti et al., 2023; Mishra & Suar, 2011), (2)

Collaborative engagement with communities and stakeholders enhances the contextual relevance and reach of disaster education (Zhai & Lee, 2023; Bajow et al., 2016), and (3) Continuous professional development, technological

integration, and mental health support are essential to sustainable preparedness and leadership (Krnjić & Cvetković, 2021; Gong et al., 2021; Huang et al., 2011).

TABLE 1. Propositional structures from axiomatic extractions of the Theory Disaster-Responsive Leadership

Axioms	Propositions	Contribution to the Theory	Theory
Axiom 1. Educators serve as key agents in promoting disaster preparedness through modeling, instruction, and leadership.	Proposition 1. Educators who model preparedness and integrate DRR principles into teaching can positively influence students' disaster readiness and leadership capacity.	Identifies the educator's role in leading and influencing disaster preparedness among students.	Disaster-responsive leadership in higher education is a dynamic and holistic process that is developed through modeling by educators, strengthened by collaboration across sectors, and maintained by an integrated approach that includes emotional resilience, ongoing professional development, and technology-enhanced learning in the learning environment.
Axiom 2. Collaboration with communities and stakeholders strengthens institutional disaster preparedness.	Proposition 2. Partnership with local agencies and integration of real-life community scenarios into curriculum enhance student engagement and practical readiness.	Emphasizes how real-world connections increase the relevance and effectiveness of disaster education.	
Axiom 3. Continuous professional development and psychosocial preparedness are essential for effective disaster leadership.	Proposition 3. Ongoing training, mental health support, and use of technology build resilience and leadership capacity among educators and students.	Highlights the importance of support systems and innovation in preparing academic communities for disaster scenarios.	

The overarching aim of higher education institutions, particularly in teacher education, is to prepare future educators who are capable not only of facilitating learning, but of leading in times of uncertainty and disaster. Central to this goal is the educator's role as a disaster-responsive leader, he is the one who models preparedness, guides students through experience-based learning, and fosters a culture of resilience within and beyond the academic institution.

Derived from the axioms and propositions in the literature, the Theory of Disaster-Responsive Leadership posits that disaster preparedness and leadership competence can be effectively cultivated in higher education when six core components work in synergy. As shown in Figure 1, the model places *Disaster-Responsive Leadership* at the center, surrounded by six critical pillars: Educator as Leader, Collaborative Partnerships, Curriculum Integration & Simulation, Technology-Driven Engagement, Mental Health & Resilience, and Continuous Capacity Building.

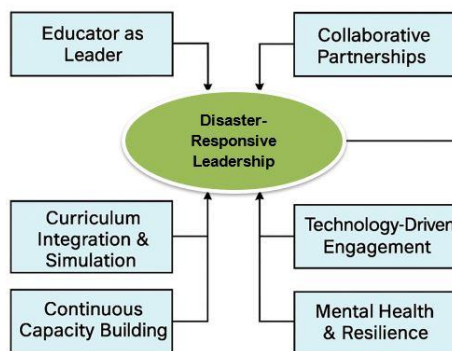


Figure 1: A schematic diagram of the Theory Disaster-Responsive Leadership in Higher Education

Each component contributes uniquely but collectively toward preparing students not just to survive disasters and emergencies, but to lead others through them. Educators take the lead in shaping attitudes and actions by modeling safety and preparedness (Afrianti et al., 2023). Partnerships with community stakeholders allow for contextualized and collaborative disaster planning (Zhai & Lee, 2023), while

curriculum-based simulations build practical, hands-on experience (Bajow et al., 2016). Integrating multimedia tools enriches learning and improves engagement (Krnjić & Cvetković, 2021). Meanwhile, psychological preparedness and mental health support provide emotional stability to cope during emergencies (Gong et al., 2021). All of these are supported by the continuous development of educators' leadership skills and disaster knowledge (Huang et al., 2011).

IV. RESULTS AND DISCUSSION

The development of disaster-responsive leadership in higher education presents a transformative approach to preparing academic communities for the realities of disaster risk and emergency response. It is anchored in cultivating proactive leadership, relevant curricular integration, and community-wide resilience within the institution. Drawing from current research, this theory proposes that effective disaster preparedness must transcend theoretical knowledge and embed itself into educational leadership practices that are adaptive, inclusive, and reflective of real-world challenges. **Axiom 1:** *Educators who serve as proactive leaders in disaster risk reduction shape a school culture that values preparedness, safety, and resilience.*

Educators are not only conveyors of knowledge but act as pivotal figures in promoting disaster-responsive behavior within academic institutions. Afrianti et al. (2023) underscore that teachers play a key leadership role by demonstrating safety measures and serving as role models in emergency preparedness. These actions directly influence students' perceptions and behaviors during crises, making educators essential to building a safety-centered culture in schools. Similarly, Mishra and Suar (2011) emphasize that when disaster education is effectively delivered, students gain confidence and are more emotionally equipped to face disaster risks. Hence, the educator's influence is foundational in promoting a proactive and preventive mindset in the learning environment.

Proposition 1: *If educators model disaster-responsive leadership and apply practical preparedness strategies,*

students will adopt more confident and proactive responses to emergencies.

Through scenario-based learning, mentorship, and consistent reinforcement of disaster response protocols, educators help students develop real-life coping strategies (Mishra & Suar, 2011). When students observe leadership in action through drills, information dissemination, and supportive behaviors, students will gain not only technical skills but also the assurance needed to act effectively in high-stress situations.

Axiom 2: *Collaboration with community stakeholders enhances the reach and impact of disaster education within educational institutions.*

Zhai and Lee (2023) argue that engaging with local government units and community organizations is essential to building a more inclusive and responsive disaster education program. Disaster responsiveness is not a stored responsibility of schools, it requires the integration of external expertise and localized knowledge. Curricular alignment with real-world conditions, as emphasized by Bajow et al. (2016), strengthens the relevance of disaster education and ensures students are equipped to respond to the specific needs of their communities.

Proposition 2: *Collaborative engagement between higher education institutions and community stakeholders improves the relevance and effectiveness of disaster education programs.*

This reflects the belief that experiential and community-based learning enables students to connect classroom lessons with local realities, encouraging deeper participation and shared responsibility in disaster response efforts (Zhai & Lee, 2023; Bajow et al., 2016).

Axiom 3: *Sustained disaster preparedness depends on the integration of continuous professional development, technology-enhanced learning, and mental health support.*

According to Krnjić and Cvetković (2021), the integration of multimedia and interactive learning environments enhances students' retention and practical use of disaster knowledge. It is also stressed that mental health support must be embedded in disaster education to help students cope with the psychological stress of emergencies. Continuous training for educators is also necessary, as noted by Huang et al. (2011), to keep them informed and capable of guiding students in both technical and emotional aspects of preparedness.

Proposition 3: *When disaster education includes mental health strategies, technology integration, and ongoing teacher training, student resilience and preparedness significantly improve.*

A holistic disaster education program must empower students not only with knowledge but with emotional strength and adaptive skills. This integration enhances their long-term ability to manage crises, contributing to institutional and societal resilience (Gong et al., 2021; Huang et al., 2011; Krnjić & Cvetković, 2021).

The theory of Disaster-Responsive Leadership in Higher Education, titled "*Prepared to Lead*," synthesizes the interconnected roles of leadership, education, and preparedness in cultivating resilient academic communities. At

its foundation is the recognition that higher education institutions, especially those engaged in teacher training, are in a critical position to produce leaders who are equipped not only with pedagogical competence but also with the capacity to respond effectively to disasters and crises.

This theory is built upon three key axioms: (1) Educators serve as frontline leaders in shaping a culture of disaster preparedness (Afrianti et al., 2023; Mishra & Suar, 2011), (2) Collaborative engagement with communities and stakeholders enhances the contextual relevance and reach of disaster education (Zhai & Lee, 2023; Bajow et al., 2016), and (3) Continuous professional development, technological integration, and mental health support are essential to sustainable preparedness and leadership (Krnjić & Cvetković, 2021; Gong et al., 2021; Huang et al., 2011).

Guided by these axioms, the theory proposes that disaster-responsive leadership can be cultivated through integrated strategies that empower both educators and students. The curriculum must go beyond theory to include simulations and community-based scenarios that allow experiential learning. Educators must not only teach but model preparedness, serving as influential figures in promoting a preventive and proactive school culture. Mental wellness and adaptive leadership skills are also vital, ensuring emotional resilience during emergencies.

Moreover, the theory supports the idea that disaster education is most effective when embedded in a holistic framework that unites institutional policies, leadership training, and student engagement. When these elements are synchronized, higher education institutions become incubators of disaster-ready citizens and leaders who are prepared not just to survive disasters—but to lead through them with courage, competence, and compassion.

V. CONCLUSION

This article developed a deductive theory of disaster-responsive leadership in higher education, grounded in axioms and propositions derived from the literature. Given the increasing vulnerability of higher education institutions to disasters and health emergencies, the need to foster proactive leadership among future educators is more pressing than ever. The integration of disaster preparedness, mental health assistance, simulation-based learning, and cooperation with stakeholders lays a solid basis for fostering a culture of readiness and resilience (Cabuga & Cañete, 2023; Barrable et al., 2018; Glauber et al., 2020).

Rooted in three central axioms, the theory emphasizes the educator's role as a disaster leader, the value of community and institutional partnerships, and the necessity for sustained professional development. As stated by Mishra and Suar (2011), educators who model preparedness have a significant impact on students' confidence and coping strategies. Moreover, collaboration with stakeholders enhances the relevance and applicability of disaster education (Zhai & Lee, 2024; Abedin & Shaw, 2015). Supporting these efforts with mental health programs and technological tools ensures a comprehensive and inclusive approach to leadership

development (Krnjić & Cvetković, 2021; Barrable et al., 2018; Huang et al., 2011).

The six-pillar model introduced in this theory, the educator leadership, collaborative partnerships, curriculum integration, technology-driven engagement, mental health and resilience, and continuous capacity building provides a structured guide for embedding disaster-responsive leadership within higher education institutions. This theory aligns with the findings of Toprak (2020) and Hallinger and Kovačević (2021), who emphasize the evolving responsibilities of educational leaders in shaping institutional culture and enhancing outcomes during times of crisis.

Practically, this theory holds value for curriculum developers, institutional policymakers, and leadership training programs. Its implementation can empower both educators and students to transition from passive recipients of knowledge to active agents of safety and resilience. As Buschlen and Goffnett (2013) and Gotangco et al. (2020) emphasize, leadership preparation in disaster contexts enhances institutional and community-wide responses to crises.

Finally, this theory invites further empirical validation. Future research can explore how these components interact in diverse educational settings and how leadership interventions influence actual disaster preparedness and response behaviors. As higher education continues to navigate uncertainty, this theory offers a transformative pathway toward nurturing future-ready leaders who are not only prepared to teach but also to lead.

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