**Project 3- Research Paper: Technology-based Educational Leadership**

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EDTC 802: Principles of Educational Technology Leadership

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Leadership principles in education demonstrate conduct for the common good that is acceptable and appropriate for all stakeholders. With over a decade of personal experiences working in the education field in urban districts and serving as a vice principal in charter schools, I recognize the diversity of learning styles among students and how educational technology focuses with great attention and effort on improving student achievement through science, technology, engineering, arts, and mathematics (STEAM) education. Thus, my vision of leadership in educational technology is to create a foundation of success that draws from the strengths of educators and quantifies the efficacy of student learning advances by improving their educational technology experiences.

Providing a variety of technical strategies, methods, and models in making learning accessible and exciting for all learners is fundamental to student success. My mission and vision are in direct alignment with the STEAM philosophy. This approach, along with problem-based learning, enables the classroom teacher to evolve from a process-oriented supervisor to a product-oriented supervisor (Mills & Treagust, 2003). When providing students with different scenarios, challenges, or workshops, students begin to explore, experiment, think critically, and make discoveries. The Australasian Journal of Engineering Education explains that these forms of workspaces aid adolescent problem-solving development, interpersonal and team-building skills, and problem-based learning. These technologies and STEAM-based workshops can be the accelerators to alter education into a problem-based learning environment for our 21st-century learners.

In order to strengthen educational settings, curricula emphasize the balanced approach to teaching and learning, including the arts, design, and humanities. This aspiration created a space for STEAM, a transdisciplinary approach that focuses on problem-solving (Quigley & Herro, 2016). Because STEAM is an interdisciplinary educational philosophy firmly grounded in and supported by educational research, hands-on project-based learning experiences are incorporated into elementary school curriculums (Kim & Park, 2012). These hands-on STEAM experiences challenge our students to learn the content standards and apply knowledge of the 21st-century skills and discoveries that tackle evolving real-world challenges. STEAM enhances multi-sensory learning through visual, auditory, kinesthetic, and tactile experiences that educate students (Joshi et. al., 2002). The STEAM-based technical activities involve teaching through hearing and speaking, seeing and perceiving, touch, movement, and action. Multi-sensory teaching techniques also stimulate learning by engaging students on multiple levels. They encourage students to gather information, link information to ideas they already know and understand, perceive the logic involved in solving problems, learn problem-solving skills, and make endless discoveries (Taljaard, 2016).

Leading with technology and design as the platform in education allows all learners the ability to express their creativity while developing new skills and grasping an understanding of the standards. Technology in education provides students with a wealth of information and knowledge. It is an increasingly significant part of the school systems and inspires students to think and form inquiries based on their discoveries and findings, allowing for increased intrinsic motivation and growth. Technology has changed the way individuals live, from internet usage to how we communicate with text messages and e-mails. This change is also evident in our school system. Principals’ leadership roles have changed in the school setting because of digital usage in today’s society. Ugur and Koc (2019) explain that principals must be leaders of technology in their mission and vision. They must be involved with the preparation and infrastructure to ensure their schools are properly equipped with technology tools. Leaders must also support, promote, and encourage technology usage throughout the curriculum. Teachers require training in professional developments on how to incorporate technology into the classroom effectively. Students will then be better able to compete in the digital age of the 21st century. Therefore, school administrators are being held accountable for integrating technology into the curriculum in schools (Anderson & Dexterm, 2005).

Leaders should be implementing technology in an instructional environment to communicate with teachers, students, and the community. Bringing the community together digitally will enhance the culture and climate in schools and aid in student learning. Pellicer (2008) explains that a true leader is one who follows first. By linking the importance of beliefs, values, and dreams to leadership behaviors, leaders become authentic and inspire others to become their own leaders. Every leader must have a leadership philosophy that they can follow and encompass to guide their actions and decisions. Spaulding (2018) explains that leaders live and lead with the heart and, in doing so, transform their teams, organizations, and communities. Effective leadership ultimately depends on a conventional relationship between leaders and stakeholders based on a common core of shared values. These shared values imply a high level of communication resulting in a clear understanding and an acceptance of those shared values.

In conclusion, the research collected for this paper indicates that principals must be leaders of technology in their mission and vision for their schools. Leaders must have a purpose and strategies within the school's vision. This purpose is guided with the heart and shared through beliefs, values, and collaboration. Educators must be properly trained in technology usage in order for students to be able to excel in this digital age of learning. Schools must incorporate STEAM-based experiences to educate and enhance students' multi-sensory learning through visual, auditory, kinesthetic, and tactile experiences. These STEAM experiences challenge students to learn the content standards and apply knowledge of the 21st-century skills and discoveries that tackle evolving real-world challenges. Providing students with different scenarios, challenges, or workshops, students begin to explore, experiment, think critically, and make discoveries. By following a shared vision and focusing on children's individual needs, our community is more likely to be able to come together to create the schools our students require in becoming lifelong learners.

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