STEM for All:
Fostering Innovation in an Elementary Classroom

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EXECUTIVE SUMMARY

With a full-time resident assigned to their fifth-grade classroom, two teachers (one general education, one special education) felt they had the bandwidth to try a new approach to science instruction. The teachers were moving into uncharted territory. The high-need district, designated as low performing because of reading and mathematics test scores, had yet to include science as a targeted area in its improvement plan. Using the Next Generation science standards to guide their thinking, the three-person team devised an accessible, equitable science unit on freshwater, water pollution, and water justice. The team met with the principal and requested $1,000 to fund laboratory materials, reference texts, and a class field trip to a nearby water plant. Would the principal be making a prudent decision if she gave the teachers the funds they were requesting?

INTRODUCTION

More than twenty years ago, the U.S. Office of Special Education, in its *Ideas that Work* series, published a monograph about the vital role that principals play in establishing a prosperous climate for children and adolescents with special needs (DiPaola & Walther-Thomas, 2003). In their abstract, the authors stated:

Special education presents one of the significant challenges facing school leaders in this era of comprehensive school reform. Today, schools must provide students with disabilities appropriate access to the general curriculum and effective instructional support. Student progress must be monitored closely and demonstrated through participation in assessment efforts. Research suggests that the principal's role is pivotal in the special education process; however, few school leaders are well prepared for this responsibility. (p. 4)

Bateman and Bateman (2014), in a Council for Exceptional Children publication entitled *A Principal's Guide to Special Education,* identify nine themes that should be covered in pre-service or in-service principal preparation programs: 1) responsibility for all students in the school; 2) knowledge of special education key concepts and practices; 3) strategies for building awareness among all staff about special education service delivery; 4) systems that ensure that individual education programs (IEPs) are fully implemented; 5) recognition of the importance of collecting, analyzing, and using student performance data; 6) creation of a shared understanding of how to go about identifying students with disabilities; 7) facilitation skills that can be employed when leading meetings related to services for students with disabilities; 8) appreciation of the unique needs of all children; and 9) proactive, school-wide strategies for reducing behavior problems (p. 4). While the text was written close to a decade ago, these themes still capture the essence of what building leaders need to know and be able to do to be effective and inclusive.

Given the multiple aspects of special education, a principal should address how confident and competent principals feel about working with special populations in their buildings. Sun and Xin (2019) surveyed principals from a northeastern state in the U.S. Over 1000 online surveys were distributed; 134 principals completed the survey (yielding approximately 13%). Despite the low response rate, some initial findings suggest a need for further investigation and enhanced leadership development. Respondents reported that they had little or no exposure to special needs issues in their administrator preparation programs and that the knowledge and skills they possessed were acquired "on the job." The training they received mainly focused on compliance. While principals reported that they handled legal matters as they arose and established school-wide discipline norms, for the most part, when it came to

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