

Chapter 8

Meeting the Needs of Exceptional Students: The Importance of Technology in Teaching and Implementing Universal Design for Learning Principles

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ABSTRACT

Today's K-12 classrooms are learning environments that present teachers with the challenge of meeting the diverse needs of learners. Utilizing technology and the principles of Universal Design for Learning (UDL) can help teachers to meet the exceptional needs of learners in a variety of areas. This chapter presents ideas and strategies to utilize technology to facilitate the implementation of UDL principles (using multiple means of representation, engagement, and expression in the design of instruction) in teacher education and K-12 classrooms. Each principle of UDL is described, and examples of technology that can support implementation of the principle are shared. The chapter concludes with considerations for teacher education programs including providing modeling of UDL instruction and designing instruction with UDL in mind.

INTRODUCTION

Classrooms today are more diverse than any other time in history in terms of race, ethnicity, language, and ability. Teachers at all levels need to recognize and respond to academic diversity

in ways that allow all students to benefit from the content being taught. Some educators, who are not well versed in Universal Design for Learning (UDL) principles, falsely believe this means watering down the curriculum. This is simply not true. Educators must move beyond the mistaken belief that high standards means there is only one

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way to complete an academic task. Instruction can be designed to enable learners of all abilities and backgrounds to access, engage, and succeed in mastering core academic tasks.

Powerful emerging technologies are providing new and exciting avenues for teachers to support the learning needs of today's diverse classrooms (Cardinali & Gordon, 2002). Future teachers need a clear understanding of these technologies and their benefits for K-12 students (Marino, Sameshima, & Beecher, 2009; Bausch & Hasselbring, 2004). Teacher educators need to model the use of technology to support student learning and provide opportunities for preservice teachers to practice using UDL principles. This chapter focuses on how technology can be used to support learners with diverse learning needs, both within teacher education programs and in K-12 settings. The first section provides an overview of the need for UDL and the background of the UDL concept. Next, examples of technologies that can be used to support each of three key principles of UDL are provided. The chapter concludes with our recommendations for teacher educators on implementing UDL in their programs and providing future teachers with the expertise and experiences needed to use technology to meet the needs of their future K-12 exceptional learners.

THE PROBLEM: ONE SIZE DOES NOT FIT ALL

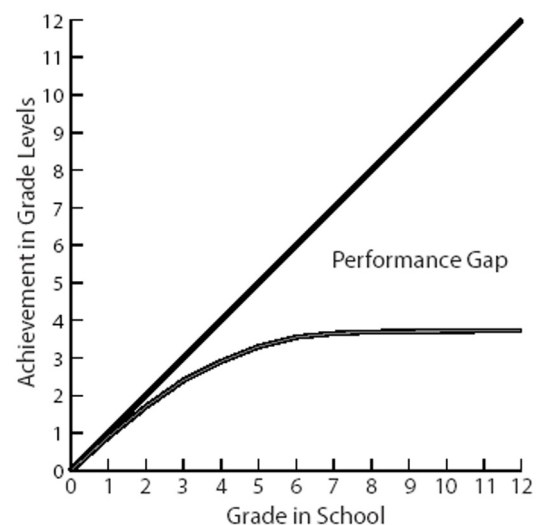
The achievement gap in schools is well documented. In Figure 1 the diagonal line illustrates the expected level of achievement of students where students gain one year of academic achievement for each year they are in school. The dotted line illustrates the pattern of achievement for many under-achieving students. Rather than offering multiple pathways to help students learn, the "one size fits all" printed textbooks and other traditional resources that typically comprise the general curriculum often serve as barriers to many students

in classrooms today (Rose & Meyer, 2002). This pattern of underachievement results in students falling further and further behind.

The area between the dotted line of performance by low achievers and the diagonal line of expected grade level is known as the "achievement gap." The graphic reveals the cumulative effect of students' underachievement. Chronic academic underachievement is a significant educational problem. In fact, concern about chronic underachievement is one of the core tenets of the federal education reform law known as No Child Left Behind (NCLB), as illustrated in the law's emphasis on measuring adequate yearly progress (Edyburn, 2006a). NCLB mandates increased expectations for all students, including those with disabilities, "to access, participate in, and progress in the general curriculum" (Pisha & Stahl, 2005, p. 70). According to Edyburn (2006b), the lessons one can take away from the achievement gap phenomenon are very clear:

- Current teaching practices are not effective for some groups of students.

Figure 1. Achievement gap (Edyburn, 2006a used by permission)



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