Chapter 92
Does Mobile Technology Have a Place in Differentiated Instruction?

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ABSTRACT

Although mobile technologies are relatively new, they have quickly become ubiquitous in education, despite a limited evidence base for their efficacy in instructional design. This chapter discusses differentiated instruction for the inclusive classroom and how this can be best accomplished using mobile technology as an educational tool. Using mobile computing devices such as the iPad in differentiated instruction has many advantages, but is not without challenges. Many of these challenges can be addressed using suggestions from previous research in the areas of differentiated instruction and educational technology. Future research is necessary to provide a solid evidence-base supporting the use of mobile technology with diverse learners in all levels of classroom instruction.

INTRODUCTION

Today's classroom teacher is required to do more than just stand at the front of the room and teach. Teachers are expected to deliver the standard curriculum in very inclusive environments, which is no simple task. Student populations have become increasingly diverse, including young people with a range of abilities from intellectually disabled to gifted, all learning the same material, in the same classroom, from the same teacher. Many initiatives to assist teachers in teaching everything from literacy to numeracy to appropriate classroom behavior and self-management skills have been introduced over the past few decades. Keeping track of these initiatives, never mind actually implementing them, can be a daunting task for the modern educator. Rather than looking at the differences among these initiatives, focusing on the similarities of the different research-based practices and showing where they converge will support teachers in implementing the most effective teaching and learning practices (Demirsky Allan & Goddard, 2010). Two of these, differentiated instruction and mobile technology implementation, include

many of the characteristics mentioned above, and, when implemented together, have the potential to make teaching and learning more accessible for diverse student populations.

Although the digital revolution has been evident in educational settings for nearly three decades the rate of adoption of technology in schools is rather slow compared to that in the business and personal sectors (Elgort, 2005). The one exception to this appears to be mobile technologies. The reason for this may be because historically, the most successful technologies in education are the ones that have been the most available to the most citizens (Keegan, 2005). Mobile technology has become ubiquitous, with the latest statistics showing that at the end of 2011, there were over 6 billion mobile subscriptions worldwide (Mobithinking.com, 2012). Stories about school and district-wide adoption of iPads and other forms of mobile technology are becoming commonplace in the popular literature in the U.S. and globally.

How can teachers best reach all of their students and incorporate this technology into their practice seamlessly rather than just viewing it as one more initiative they are required to learn and implement? This chapter looks at the incorporation of mobile technologies into differentiated instruction by focusing on the following aims:

1. To clearly define differentiated instruction and its application to inclusive education.
2. To define mobile technology.
3. To objectively look at the adoption of mobile technology in education, particularly in the area of inclusive education, via differentiated instruction.
4. To discuss where further research is needed.

BACKGROUND

Differentiated Instruction

Differentiated instruction is a pedagogical strategy that evolved from the need to provide access to the curriculum for an increasingly diverse student population (Demirsky Allan & Goddard, 2010). This diversity includes but is not limited to both male and female students from a variety of sexual orientations, ethnicities, and cultures and who may have one or more of the following: a.) special gifts and talents, b.) learning disabilities, c.) attention deficit hyperactivity disorder, d.) intellectual disabilities, e.) communication disorders, f.) sensory disabilities, and g.) autism. It began, and is still regarded, as a general education initiative. Although its original aim was to answer the problem of sufficiently challenging gifted students in the classroom, it has evolved into the accepted model for students of all abilities at all levels (Hall, Strangman, & Meyer, 2011). Its focus is planning different ways for all students to access the same curriculum. Tomlinson (1999) describes it as all students taking different paths to arrive at the same destination. Teachers who properly differentiate instruction recognize and instructionally plan for student variations such as background knowledge, experience, readiness, language, and interests. Effective differentiation ensures that all students in the classroom are learning to their ability in the style that allows them the most success.

Differentiation then, means adjusting lessons and their components to meet the needs of all students. Differentiation can take place in three parts of instruction: content, process, and product (Tomlinson, 2002). This can be accomplished by giving students choices in each of these areas so that they can learn as well as demonstrate what they have learned in the format that fits each student's individual interests

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