

## Chapter 60

# Teaching Exceptional Children With Mobile Technologies in a General Education Classroom

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### ABSTRACT

*Meeting the needs of all students is of crucial concern for all teachers. As technology continues to change our culture and the ways students learn, it is important for teachers to embrace new pedagogies that meet the needs of both gifted students and students with special needs. This chapter proposes a framework that supports the integration of differentiation, inquiry learning processes, and mobile technologies. The goal of presenting this framework is to provide a research foundation for a conceptual ideal geared toward practical implementation that benefits these two marginalized populations of students.*

### INTRODUCTION

Meeting the needs of students with special needs and gifts in the general education classroom is a crucial concern for professionals and advocates of special and gifted education (Anderson, 2007; Johnsen, Haensly, Ryser, & Ford, 2002). Professionals working in these areas continue to emphasize inclusion making it imperative that general education teachers understand the complex needs of diverse students. Teachers need to differentiate relevant instruction for all students, not just students with special needs and gifts (Clark, 2002; Tomlinson & Allen, 2000); however, students with special needs and gifts are the focus for this work.

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Although the effect of providing differentiated education to meet the needs of all students has shown to be positive, general education classrooms teachers tend not use this practice (Anderson, 2007; Latz, Speirs Neumeister, Adams, Pierce, 2009; Tomlinson, 2003, 2008; Wormeli, 2005). In addition, when differentiated instruction is used, often it is reactive and tangential, not planned and substantive (Schumm and Vaughn, 1991; Tomlinson, 2003). Students with special needs are often marginalized and receive didactic rote instruction that only provides surface level understanding of content and limited experience in applying knowledge to real world situations (Latz, Neumeister, Adams, & Pierce, 2009). In contrast, gifted students also perceive that their cognitive needs are not being met in general education classroom due to lack of challenge in classroom activities and discussions (Gentry, Rizzi, & Gable, 2001; Hong, Greene, Higgins, 2006).

In order for all learners to perform at their optimal levels, the educational context must offer challenging, differentiated opportunities that provide situations for students to solve problems and to be creative, while also demanding high standards of excellence (Feldhusen, VanTassel-Baska, & Seeley, 1989; Tomlinson, 1999; Torrance & Sisk, 2001). Mobile technologies can support teachers in moving away from didactic models. In these classrooms, mobile technologies can be used to enable student access to information and provide students with options for multiple means of expression. In this way, mobile technologies change the educational emphasis to focus less on knowledge acquisition and more on content application and depth of understanding (Huang, Chu, Yin, & Ogata, 2015; Sharples, 2000).

Mobile technologies provide teachers new opportunities to incorporate, alter, adapt and differentiate inquiry-based lessons to address learner differences (Shih, Chuang, & Hwang, 2010). Utilizing mobile applications and devices allows for anytime, anywhere learning that increases student interaction with content, thus enabling and supporting inquiry models. Additionally, open access mobile computing provides teachers the opportunity to change their pedagogy. Open access or free applications are available to all students who have a device, and they can be used as powerful tools in the inquiry process. Students can be empowered to engage in facilitated inquiry as they solve relevant problems using multiple means of inquiry and collaboration (Yerushalmy & Botzer, 2011).

This chapter will develop a theoretical and practical foundation that connects the use of mobile technologies, inquiry based learning, and the essential elements of differentiation in order to guide teachers towards developing culturally relevant, socially just, and academically effective instruction for marginalized students with exceptionalities. Students with exceptionalities include students considered gifted and students with physical, mental, or emotional impairments that make learning difficult in conventional classroom contexts or practices. This chapter will present practical examples of inquiry-based, technology-infused teaching that allow for differentiation.

## **TOWARDS INCLUSION**

### **Federal Law: Rights and requirements to Provide Adequate Education for All**

Throughout the educational reform movements in the United States, there has been a consistent concern and shift towards providing all students with an appropriate education based on student needs (Darling-Hammond, 2004(b), 2006; Darling-Hammond, Wise, & Klein, 1999; Gay & Kirkland, 2010; Melnick & Zeichner, 1998). Ongoing forces pushing for higher quality education, access to education for all students, and a focus on meeting the needs of all learners have influenced the landscape of education.

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