Chapter 5
Technology for Gifted Students in Mixed-Ability Classrooms

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ABSTRACT

This chapter focuses on technology toolsets for the secondary classroom—with an additional focus on accelerative options for gifted and talented education (GATE) students. It identifies top instructional practices being used by various online resources. It attempts to generalize the current types of educators and gives input on professional development for new educators’ integration of technology in the classroom. It is relevant for professors of teacher education, elementary and secondary educators in any setting of education including, online, hybrid, blended, and traditional classrooms. It informs school district administrators, pre-service teacher support providers, and developers of online educational platforms.

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INTRODUCTION

Gifted students regardless of, or even despite, poor teaching, student distractions, increased class size, and other challenges, often continue to succeed. They may excel with limited direction and help. However, as experience dictates, these gifted students can go much farther if nurtured to their full potential. There are many challenges to overcome before they are 100% engaged and performing at their highest levels. In addition, there are numerous technological tools available to aid in that engagement. As many scholars advocate, technology is changing the way we teach to a more constructivist, student-centered, adaptive style of teaching (Barr, 1990; Carlson & Gadio, 2002; Christensen, Horn & Johnson, 2008; Cukurova, et al., 2016; Hmelo-Silver, Duncan & Chinn, 2007; Mann, 1994; Moursund, 1991). The social/ emotional development concerns for gifted students and pull-out strategies of the past (George, Cohen & Stanley, 1979) may still be a concern for some, however, these issues dim in light of online course and curriculum options. The trend toward one computer per one student, also known as one to one computing, demonstrates support and increased access to online learning. Of course, this requires an educator who can use technology to differentiate learning for various sub-groups in the classroom (Zimlich, 2015)—and this will be covered in the last section of this chapter.

There are many recent changes in the field of computer science. The federal government recently included computer science as part of Science, Technology, Engineering, and Mathematics funding, also known as STEM (Smith, 2015, p. 541). A national computer science framework was established in 2017 with support from industry leaders such as Apple, Amazon, Google, and Microsoft, as well as educational leaders such as Access CS for All, Association for Computing Machinery, the College Board, CSTeachers.org, the National Math and Science Initiative, and the International Society for Technology in Education (k12cs.org, 2017). While these developments acknowledge the importance of computer science, student engagement at the K-12 level is dropping (Gallup, 2016).
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