Chapter 73
Using Video Gameplay to Measure Achievement for Students with Disabilities:
A New Perspective to Grading and Achievement Reporting

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ABSTRACT

Video gaming in the classroom offers students and educators the opportunity to conceptualize learning in new ways and address 21st century skills. This construct appears in research-based literature by leading trans-disciplinary experts in the field of special education and video gaming. Empirical research has established the application of video games as leaning tools in schools, and the benefits of video games for students with disabilities (Ke & Abras, 2013). This chapter focuses on the benefits and use of educational video game based learning for students with disabilities. The authors discuss (1) current barriers hindering widespread adoption of video games for learning and assessment, (2) characteristics of video games being used for learning and assessment, (3) how gameplay data represents academic achievement for grading, and (4) the types of assessments available and considerations for implementation. Finally, the authors explore avenues to prepare educators to use video gaming for learning and assessment in classrooms for students with disabilities.

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INTRODUCTION

Video games are often used as interventions or methods of integrating supportive content for students with disabilities (SWD), but should also be considered as a means of alternative assessment for learners (Marino, Basham, & Beecher, 2011). Traditionally, large-scale school assessments are administered with accommodations for SWD to ensure that: (a) all students can access and take the test and (b) SWDs are graded on a fair scale that measures their performance outcomes (Lovett, 2010). There are 6.4 million SWDs ages 3 to 21 years old served under the Individual with Disabilities Education Act (IDEA) receiving special education services (Kena et al., 2014). Delacruz, Chung, and Baker (2010) indicated evidence to support of using video games as an assessment alternative for measuring students learning outcomes, underscoring the importance of reform initiatives for K-12 educational assessment. According to the National Research Council report on games and simulation, "science games and simulations can be adapted for students with special needs, allowing them to be mainstreamed in science classrooms" (Honey & Hilton, 2011, p. 61). It is important to give consideration to the video games as an instructional and assessment tool given that 2.4 million SWDs have been classified as having specific learning disabilities (SLD) which affect students' cognitive learning process, and subsequently, academic outcomes (Cortiella, & Horowitz, 2014). In the field of special education research on video games as a support for students with disabilities is limited (Durkin, Boyle, Hunter, & Conti-Ramsden, 2013). This chapter will provide insight on the use of video games to facilitate academic success for students with disabilities in inclusive classroom settings.

Use of video games for game based learning (GBL), as an alternative assessment could be valuable considering the rich amount of feedback, data collection capabilities and accessibility features available within many games (Marino et al., 2011). Video game feedback components can have a significant impact on academic success rates for SWD especially those with SLD. Teachers can use students' video gameplay performance data to provide specific, detailed feedback. Such feedback is crucial when using educational simulation activities to increase students' academic performance (Savoldelli et al., 2006). In an empirical study on game-based feedback in virtual learning environments Serge and colleagues (2013) reported that participants who received detailed feedback during GBL tasks outperformed those who received general feedback. Students with disabilities sought activities in simulation-based scenarios and used this virtual medium to reflect and view their own successes (Anstadt, Bradley, & Burnette, 2013). With the increasing use of GBL curriculum as a support and intervention in educational settings many SWDs already have achievements from playing educational video games that can represent their academic performance (Manusos, Busby, & Clark, 2013).

This chapter will include the intellectual merits and broader impacts of video games and possible grading systems that can be used in the classroom. The authors have included references to how GBL has been utilized in inclusive classrooms and support the consideration that video games should be used as tools for learning, presenting content, grading, and assessing students' abilities. The purpose of this chapter is to initiate dialogue on benefits of further developments and research for SWD and their use of video games. Video games (regardless of game types or genres) can have the accessibility features, flexibility of creating environments, and feedback components beneficial for SWDs and not found in traditional educational content.