

## Chapter 6

# Gaming in Education

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### ABSTRACT

*This chapter addresses student motivation, engagement, and content acquisition through the use of gaming, digital game-based learning, and gamification, as well as clarifying the difference between terms related to gaming that are often mistakenly used interchangeably. The chapter will utilize current literature, explain theories linked to gaming in education, and offer a method for using gaming to impact the future of teaching and learning. The aim of this chapter is to provide an overview of how the use of gaming for emerging realities and the implementation of gaming during remote learning can be supported. Learning theories such as the theory of gamified learning, the self-determination theory, and the theory of flow demonstrate the link between learning, motivation, and goal-setting, as well as providing a basis for teacher education on the link between theory and the use of gaming in the future of technology in the classroom.*

### INTRODUCTION

Technology-based tools for the classroom are flooding the educational field, and educators are constantly on the lookout for motivational, engaging, and exciting ways to deliver content. With the onset of Covid-19, many school districts turned to remote learning and the demand for worthwhile technology-based educational tools increased, experiential learning has become more relevant than ever, and teachers are teaching using games and game creation as tools for motivation, engagement, problem-solving, and creativity (Baker, 2020). Whether educators are teaching in remote, hybrid, or synchronous face-to-face classrooms, improving the student experience remains a vital component of the education system. As the education field changes and adapts to global shifts, educators are faced with the daunting task of finding ways to harness technology to extend and transform student experiences. Video games are one option that can be used to support learners in setting goals and work toward them, as a form of feedback and reinforcement, to improve self-esteem, and to keep a portfolio of academic and behavioral growth (Griffiths, 2014). Implementing unfamiliar game-based tools can be overwhelming, but beginning with the critical pedagogy that supports educational technology can guide educators as they connect the

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purpose of the tool with the underlying pedagogy during the process of creating lesson plans. With a clear understanding of theoretical frameworks that support educational technology, educators can better support students in an increasingly technology-heavy educational environment (Seaborn & Fels, 2015).

As teachers sift through the myriad strategies and tools emerging on the market, students are concurrently being immersed in technology-rich environments on a daily basis, and most identify as gamers or own gaming platforms (Prensky, 2009). Initiated by Piaget in 1692, play as a form of learning has long been known to have positive influences on cognitive development in children. Educators frequently incorporate play into the school day via content-related games and for educators working remotely or in hybrid environments, play can become a natural part of the school day as teachers implement educational games or use computer gaming elements within the educational setting. The use of games and gaming elements in a classroom setting can provide students with opportunities to use problem-solving skills, collaborate on a shared mission or goal, and practice the social-emotional skills of communication and teamwork, all within the supportive educational environment. Educational games often incorporate content-specific objectives or strategies taught within the classroom, and seek to increase student engagement, motivation, and mastery. Playing educational video games, experiencing gamification, or participating in game-based learning in the classroom allows the learner to exercise skills such as attention to detail, resilience, and perseverance while accumulating content knowledge (Spiel Times, 2019). Successful learning frequently involves students accepting successes and failures with resilience and grit, which gamification provides because “gamification offers the promise of resilience in the face of failure. Gamification can shorten feedback cycles to maintain engagement, give learners low-stakes ways to assess their own capabilities, and create an environment in which effort, not mastery, is rewarded” (Su & Cheng, 2015, p. 270). Students metacognitive skills can evolve to see setbacks as opportunities, instead of feeling anxious, helpless, or even fearful (Lee & Hammer, 2011). As teachers begin the work of integrating gaming or gamification elements with purpose in the classroom, having a strong understanding of the pedagogy behind the use of these strategies is an essential piece to meaningful technology integration in education. Without a clear understanding of underlying pedagogy, educators cannot wholly understand the potential impact of thoughtfully implemented game-based lessons because, “in the absence of critical pedagogy for Digital Game-Based Learning (DGBL), educators unfamiliar with games or gaming culture are faced with confusing and conflicting agendas which they are ill-equipped to interrogate” (Nolan & McBride, 2013, p. 2). This chapter will explore the trends in the use of gaming in education, provide insight into current literature on gaming in education, discuss theoretical frameworks, and provide practical application practices for educators, educational leaders, and instructional designers as they prepare students for the increasing demands of their technology-rich world for the years to come.

## **BACKGROUND**

Video games have expanded and grown with consideration to improved graphics, in-depth storylines, and complex systems of leveling up. As the video game market grows, gamification has become prevalent in many industries, with the education industry producing pioneers in educational gamification (Leigh, 2018). As gaming, gamification, and game-based learning gain notoriety, the research world has continued to investigate the use of gaming both in and out of the classroom. The use of gaming and game elements in the classroom can improve the classroom environment for students, as well as improve mastery (Yang, 2012). Gaming provides the opportunity for increased student engagement and motivation

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