

# Chapter 24

## A Phenomenological Study of Games, Simulations, and Virtual Environments Courses: What Are We Teaching and How?

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### ABSTRACT

*Educational technology programs from across the United States are offering graduate courses in games, simulations, and virtual environments (GSVE) to their students. However, these courses, until now, have not been systematically studied. This research uses a hermeneutical phenomenological approach to answer the research question: “How do instructors describe their experience teaching GSVE courses?” Five professors of educational technology that have taught GSVE courses were interviewed using a semi-structured protocol based on the TPACK (Technological Pedagogical Content Knowledge) framework. These data were analyzed both analytically and thematically. The results of the study showed a wide variety of topics, tools, and pedagogies are used within GSVE courses. The results had five themes emerge: Focus on Application and Theory, Experiential Learning and Constructivism, Instructor’s Prior Experience with Games, Heterogeneous Student Populations, and Range of Technology Tools. These themes as well as these courses are highlighted within this paper. A discussion is provided.*

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## INTRODUCTION

There is little doubt that the field of education is currently being shaped and influenced by several technological forces that have the potential to fundamentally change teaching and learning. One of these forces is the use of games, simulations and virtual environments (GSVE) for teaching and learning. Digital games alone are a \$25.1-billion-dollar industry (ESA, 2011) and have become an integral part of contemporary society. Educators within our field are working diligently to understand and harness this technology for educational applications. As the world becomes increasingly complex, interconnected, and technological, GSVE have the potential to facilitate meaningful learning (Williamson, Squire, Halverson & Gee, 2005). GSVE can be “sites of naturally occurring, intrinsically motivated learning” (Squire, 2006, p 22). A digital game-based learning approach taps into the intrinsic motivational nature of digital games and synthesizes it with academic content to create engaging instruction (Prenksy, 2003).

Consequently, there is an increasing trend in the field of educational technology to offer graduate courses in GSVE for teaching and learning. These courses are generally taken by both masters and doctoral students within the field. A scan of the educational technology (the term encompasses instructional technology, instructional systems design, learning technologies, etc.) programs housed within the Association for Educational Communications and Technology (AECT) program database helped to identify ten programs that offered a formal course in GSVE. The authors contacted the faculty that taught these courses within their respective programs and asked them to participate in a recorded, semi-structured interview.

The development and implementation of GSVE courses is a relatively new progression within the field of educational technology. Although some of shared their expertise on such courses (Hirumi, Appelman, Rieber, & Van Eck, 2010a; Hirumi, Appelman, Rieber, & Van Eck, 2010b; Hirumi, Appelman, Rieber, & Van Eck, 2010c), the problem of what we are teaching and how we are teaching within these courses remains a central topic for educational researchers. What body of knowledge does our field draw upon for such courses? What is the focus of the courses at various institutions of higher education? What do we hope our students will gain for enrolling and successfully completing such courses? What can employers expect from such students that complete these courses? These are a sampling of questions that one could ask about the design, development, and implementation of GSVE courses.

Thus, the purpose of this study is to examine examples of GSVE courses that have been offered at institutions of higher education by educational technology faculty. This research documents the design decisions, theoretical perspectives, and pedagogical frameworks of these courses. A fuller understanding of how GSVE courses are actually being implemented can help provide insight and guidance for future practice and can also contribute to the knowledge base of using GSVE in education. As GSVE become increasingly embedded in society and as GSVE solidifies its presence in education, it is important for educators and researchers to more fully understand best practices regarding GSVE in teaching and learning. This research explores GSVE courses and aims to provide a clear snapshot of GSVE in action by examining the faculty of such courses. The research question guiding this research was “How do instructors describe their experience teaching GSVE courses?” To this extent, we use the Technological Pedagogical Content Knowledge framework as a coherent platform to study such courses in action and to shed light on the design, development, and implementation of GSVE courses.

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