Chapter 24
Historical Perspectives on Games and Education from the Learning Sciences

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ABSTRACT

This paper reviews three classic theorists' writing on games, learning, and development. Piaget, Vygotsky, and Bruner all wrote about games and play as important to thinking and learning. This review attempts to synthesize their perspectives as a means to revisit underused theoretical perspectives on the role of games in education. The views of Piaget and Vygotsky are applied with respect to the role of games and play in learning and development to the design of a popular commercial game. Bruner's perspective offers the embodiment of games into a larger and controversial curriculum intended to teach young people about human culture. Each of the perspectives is reviewed and considered in light of new gaming technologies and their potential for educational change.

INTRODUCTION

Most researchers who study games and education recognize that close ties between games and learning have existed for centuries. While traditional, western, classroom-based education has perhaps frowned on games through the early and middle parts of the 20th century, theories that focus on the integration of experience, learning, and development have often included a special role for games and play.

Despite a glut of research that indicates the possibilities for successfully integrating game activity with educational activity (Shelton, 2008),

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there exists surprisingly little in the way of tying gaming activity to historical precedent as a foundation in the empirical literature. There could be different reasons for this lack of reference. One is that classic learning and development theories are not applicable to current research. Technology, now at a stage that supports many types of social gaming activities, is pervasive to the extent that it is ubiquitous. So the natural match between educational activities and their focus on gaming activities is reaching a new level of importance that perhaps was not seriously considered in earlier decades (Clark, Nelson, Sengupta, & D'Angleo, 2009; Ketelhut, 2009). The foundations and theoretical underpinnings that would support the integration of games in education exist, but are largely unreferenced. The technology, while critical for the support of gaming activities, is not mutually exclusive to how people learn.

Another reason might be that the term "game," historically associated with leisure, is not welcome in serious education and by those who take education seriously. Therefore, the game and play theory espoused by classic theorists have been buried beneath what is the more popularized notion of learning theory, despite their existence. Still another reason could be that most recently, the use of digital games in education is simply another fad in a long line of promising technologies that have failed to live up to expectations. The same promises were once made regarding film, television, radio, and microworlds (Cuban, 1986). Perhaps the need to relate new technologies and the activities they support in gaming are far too ephemeral to bother tying to classic theories. And yet it is undeniable that the Internet and its influence in sharing information and helping people connect with each other has altered the kinds of information we think are important to teach, and the way people spend their time (Boyd & Ellison, 2008). The electronic networks that make the Internet possible also support the kinds of game play that directly relates to many classic theories on teaching and learning (e.g., Asakawa & Gilbert, 2003; Kiili, 2005; Steinkuehler, 2004).

In this review, we explore those theories, reintroducing them as appropriate for today's technological infrastructure; namely how gaming technology can and does support the interactions between people, people and machines, and the resources they use. Space does not permit a full accounting of learning theory as it relates to video games. Instead, we will focus on those areas which seem to us to have the most relevant to both video games and the traditional school structure. Our review covers a selection of axioms, references and examples of how games and game play were used by two classic theorists of education and learning (Piaget and Vygotsky) and those that have carried on their work (i.e., Bruner).[1] We chose these three theorists because they are, in many fundamental ways, linked to each other through their conceptual stance, but more importantly through the foundational epistemological beliefs of learning scientists. They are three of the most widely cited individuals whose tenets are taught within learning theory classes (not game design classes) due to their ideas that students can and do play a large role in their own learning, and there is value in approximations of common understandings within different individuals. It is their treatises that help learning scientists' research and theorize about learning and learners in context as much as any others.

We provide their perspectives using examples of how their theoretical views on learning are present in the design of games throughout the latter half of the twentieth century. Additionally, we take on the task of relating those theories to modern technology and gaming activities. We assert that creating these ties can serve to strengthen the theoretical basis for modern game research by providing a familiar grounding of how and why our educational system uses methods disparate from the enjoyable experiences of modern games. The implications would directly relate to any kind of