Abstract

The use of games are being explored in many domains, why not libraries? Games as learning tools, has potential use in instructional activities such as the teaching of information literacy. The concentration of literature on the educative value of games has escalated since the late 1990s and has been generated in the areas of entertainment, military, academic, and business sectors acclaiming its positive effect on learning and its potential as an instructional tool (Bonk & Dennen, 2005; Bowen & Morrison, 2005; Chappell & Stitt, 2005; Foreman, 2003; Halverson, 2005; Jenkins & Squire, 2003; Oblinger, 2004; Oreovicz & Wankat, 2005; Prensky, 2000, 2001; Stafford, 2005). Books, and scholarly think pieces tout other benefits of the use of games such as knowledge acquisition, retention, recall of factual content, creative and critical thought, decision making, the development of strategic skills, and problem solving (Aldrich, 2004, 2005; Gee, 2003, 2005a, 2005b; Jenkins & Squire, 2003; Johnson, 2005; Lieberman, 2006; Prensky, 2000).

For most libraries, a primary component of their service missions is to educate users on information literacy concepts and skills. Information literacy has become a centerpiece for the continuing discourse on the role that librarians should assume in the educational spheres of instruction, curriculum and faculty development (Breivik, 1999). This type of instruction often occurs either in a face-to-face workshop setting or online. Ultimately, the goal of information literacy instruction is to encourage library users to be independent researchers confident in their abilities to locate and use valid information both in physical and digital formats (Eisenberg and Berkowitz, 1990). With the new philosophies and modified spaces in libraries there have also been changes in the delivery of instructional sessions over the years. Specifically, there has been interest and incorporation of experiential and collaborative learning techniques (Mabry, 1995). With the focus on information literacy there has been a heightened interest in the theoretical approaches to instruction. For example, Grassian and Kaplowitz, 2009 has an entire chapter in their book about learning theories. They cover specific theories from Piaget, Bruner, Bandura, Ausubel and Keller along with summaries about the cognitive science movement, behaviorist theory etc. There is also focus on research on learning styles such as Keefe’s categorization of styles and Kolb’s experiential learning.

The goal of this study is to explore how undergraduates collaborate to design educational games (using Scratch) that explore how to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate the sources needed, evaluate the sources critically, and share that information. It examines if the use of game design has an impact on learning and retention of knowledge of content that was taught. The study investigates the types of learning processes in three teaching strategies (lecture with gaming, lecture with game design and traditional lecture/discussion) and outcomes that resulted. Learning processes focused on how students represented their understanding in the three teaching strategies and in the context of developing an educational game as well as the collaborative influences in the process of developing and revising their games. A quasi experimental approach will be used to measure the variable(s) of interest. Observations, game artifacts and interviews would be used as qualitative data sources. Quantitative data from the quasi experiment will linked to the qualitative data to corroborate and extend the qualitative approach. The unit of analysis for study will be individual students, student

Investigating Learning Outcomes through Game Design in Information Literacy Classes

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groups and artifacts centered collaboration. Learning outcomes will document what types of learning and retention gains occurred in the three teaching scenarios.

The theoretical framework looks at the external process of constructionism, which emphasizes design and sharing of artifacts. Papert was instrumental in developing educational theory and pedagogy associated with young children as game or computer programmers, namely that of constructionism. One of the most distinguishing features of constructionism is programming or designing artifacts. Designing sharable artifacts reflect students’ different styles of thinking and learning make that principle of the theory most important. Papert, 1991 stated that in order for students to gain a deeper understanding of something, students have to create it, construct it and build it. Collaboration is another component of constructionist learning environments in which students share ideas and not only receive feedback, but also gain assistance. Interaction among individuals and collective activities are of critical importance in for learning and development in social context. Intersubjectivity involves cognitive processes consistent with Piaget’s, Vygotsky and Lave and Wenger view of constructivism (Koschmann, 1996, Koschmann, Zemel, Conlee-Stevens, Young, Robbs, & Barnhart, 2005). Intersubjective space in which the students operate act as the “glue” that holds the collaborative learning activity together. It is what makes possible the functioning of the group (Koschmann et. al., 2005). This study will also explore meaning and practices of meaning-making in the context of intersubjectivity and the ways in which these practices are mediated through collaborative designed artifacts (in this case game artifacts).

References


