Assessing Student Growth in a Constructivist and Integrated Digital Curriculum

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Abstract: This poster explores the process of assessing student learning in constructivist digital settings on student engagement, and ultimately students' academic and social-emotional growth. In particular, this paper examines how explicitly integrated and constructivist digital curriculum better engages students in learning and how this can be measured. We situate our examination of constructivist digital curriculum in a descriptive case study of the Wisconsin Center for Academically Talented Youth, a blended online program that offers stand-alone replacement courses for students in grades 5-8. Early findings suggest digital education can be a vehicle where media is used to create a student-centered, educator-driven and ultimately co-constructed curriculum leading to greater student engagement and learning. Yet, this case also illustrates the significant time, capacity, and communication required when implementing assessment systems in a constructivist digital curriculum.

Objectives

This poster will explore the possibilities and challenges in assessing student academic, social and emotional growth in constructivist digital instruction. We will investigate these possibilities through a descriptive case study guided by the following research questions:

1. What are both the possibilities and limitations to implementing a truly constructivist curriculum in the digital education context?

2. How do live instructors assess student academic, social and emotional growth in a constructivist digital instructional setting?

These questions are significant to not only gaining better understanding of both the promise and perils of digital courses, but to offer concrete examples of how assessment of a constructivist digital curriculum might function.

Conceptual Frameworks

This paper will draw upon the concept of epistemic frames, or the idea that learning in our global society must occur in a community that shares and constructs knowledge, skills, practice and ways of knowing (Shaffer, 2006; see also Morrison & Collins, 1996). This concept of co-constructing knowledge and learning within a community of practice is central to a constructivist curriculum, which is based on the premise that students make meaning and construct knowledge through experiencing and reflecting upon the world around them (Brooks & Brooks, 1999; Honebein, 1997). This analysis also draws upon a related research base on the importance of integrated and interdisciplinary contexts to learning, which suggests that such a curriculum can positively impact student attitude towards and engagement in schooling, problem-solving skills, and higher achievement in college (Austin, Hirstein, & Walen, 1997; Barab & Landa, 1997; Kain, 1993).

Research Design

We situate our examination of constructivist digital curriculum in a descriptive case study of the Wisconsin Center for Academically Talented Youth (WCATY) Academy, a blended online program that offers stand-alone replacement courses for students in grades 5-8. WCATY is a not-for-profit, university-based organization that enrolls approximately 1,400 participants per year from 130 different schools across the state. Each WCATY Academy course translates to either nine or four weeks worth of course credit for students and is designed to replace part of a district's language arts curriculum. This investigation draws upon early findings from this case study of the processes in which WCATY develops and implements its online-only and blended online courses. Case studies situate phenomena (i.e. constructivist digital curriculum) within its real-life contexts (i.e. the WCATY Academy and its students), they are bounded by both time and place, and they involve data collection from multiple data sources that triangulate with one another (Yin, 2003).

Our case study of the WCATY Academy blends a qualitative investigation of the nature of the digital curriculum, with a quantitative analysis of descriptive and assessment data. Data sources include focus groups with district coordinators, WCATY staff using a semi-structured protocol and parents of students enrolled in WCATY courses. Responses are analyzed with codes based on the above research questions. Observations of both digital and in person settings of blended courses use a standardized, tested observation instrument. Student, parent and district coordinator pre and post surveys are analyzed for perceptions of both academic and social-emotional growth. In addition, program documents and websites are analyzed with the same coding structure as above. This paper will include descriptive data on student enrollment rates, subcategorized by total enrollment, return rates and demographics, and along multiple years.

Early Findings

This poster details ways in which the WCATY Academy illustrates instruction that creates epistemic frames, or communities of practice for students and both the curriculum and assessment process is truly constructivist and integrated in that both instructors and students determine the direction of the course through game and project-based learning. Students are expected to consistently use higher order thinking skills, not only to respond to instructor prompts, but also create and assess the content of their learning experience. The WCATY case illustrates how digital education can be an avenue where media is used to create a student-centered, educator-driven and ultimately co-constructed curriculum *and* assessment.

Yet, this case also illustrates the significant time, capacity, and communication required when implementing and assessing a constructivist digital curriculum. This presents important questions when considering the extent to which constructivist digital programs such as WCATY could go to scale in ways similar to the static and asynchronous software-based courses offered to school districts across the country. Emerging research on the digital curriculum present in low-income settings suggests it often consists of skill and drill routines that demand little critical thinking (Burch & Good, 2014). This is of special concern when many large school districts serving students from low-income families have adopted technology plans that invest millions of dollars in hard and software that will deliver less than innovative digital curriculum.

Scholarly Significance

Digital and blended online learning has great potential to engage students and teachers in co-constructing learning, knowledge and media itself. Yet as this case study illustrates, a truly constructivist and integrated curriculum requires considerable time and expertise on the part of instructors and may be difficult to bring to a large scale across multiple settings and contexts. This is especially true in school districts facing constant budget cuts. This case study offers insights into the theoretical possibilities and importance of constructivist and integrated digital curriculum, but also a concrete and empirically-based examination of how digital education programs and school districts can bring innovative digital curriculum to their students. A study such as this has implications for the level and quality of student access to engaging, integrated and constructivist curriculum in the digital age.

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