Design Based Research Approach for Faculty Development on Innovative Classrooms
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Abstract
Providing standardized workshops for faculty interested in teaching in tech-rich can be challenging because faculty are at different levels of development in using technology in teaching and learning. The Technological, Pedagogical, and Content Knowledge framework is helpful because it identifies seven overlapping skill sets and competencies for teaching with technology. Applying the design based research method to faculty development creates a research platform conducive to cyclical iterations inclusive of collegial feedback. The results of three iterations of research and instructional design for faculty use of innovative classrooms, combined with student feedback will be presented.

Context: Webster 101 Innovative Classroom
Webster 101 Innovative Classroom Opened: Fall of 2012

PARTICIPANTS
• Fall 2012: 12 Faculty - Iteration I
• Spring 2013: 14 Faculty - Iteration II
• Fall 2013: 11 Faculty - Iteration III (Student Feedback)
• Fall 2014: 14 Faculty

Instrumentation
1. Post-survey at each iteration.
2. Focus Groups
3. Workshop evaluations
4. Student survey after third iteration

About TPACK
The Technological Pedagogical Content Knowledge is a collaboratively developed framework of scholars and researchers seeking to conceptualize and clarify the competencies that evolve from the intersection between pedagogy and technology. Investments in new and interactive technologies in education require both the technical and pedagogical skills to use them. The Technological Pedagogical and Content Knowledge framework articulates the complexity of overlapping by explicitly identifying the overlapping skill-sets required of teachers using technology which teachers often demonstrate synergistically.

About DBR
Brown (1992) presented DBR in response to the “synergistic,” iterative, and complex nature of classrooms and teaching. Design-based research is a method of inquiry that evolved directly from the development and desire for data-driven methods for classroom-based inquiry, which is action research. The process of praxis involves collaboration between researchers and participants in the identification of practical real-world problems, and then uses that information to enact change or frame practice, and extend or develop new theories. Action research reflects these ideals by being a teacher-involved and localized method, resulting in immediate instructional modifications based upon student response (McNiff & Whitehead, 2009). Using the phases of design guidelines (Reeves, Herrington, & Oliver, 2005), the researcher applied the phases of design-based research to this study.

Qualitative: Faculty
- Faculty expressed varying degrees of comfort in Technology, and particularly concerned with Technological Pedagogical Knowledge required of teaching in a “tech rich” environment.
- Faculty preferred individualized checklists to larger workshops when being oriented to innovative spaces.

Quantitative: Students
Students reported an increase in student engagement, group and project work. 85% of students reported that being in an environment conducive to working with their classmates was most conducive to their learning.

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References


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