Digital Learning Design Laboratory

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Abstract: The authors outline a Working Examples project, the Digital Learning Design Laboratory (DLDL) that is under construction at Northern Michigan University. The DLDL is a new design space for k-12 students, teacher education students, and professional educators to explore teaching and learning with new media and technology. The authors respond to Working Examples prompts to provide an overview of the project.

Project and Vision

The Digital Learning Design Laboratory (DLDL) is an emerging space for individuals to interact with new media and technology at Northern Michigan University (NMU). Our vision is that the DLDL will allow k-12 students, teacher education students, and professional educators to explore teaching and learning with new media and technology. Deeply informed by constructivist and constructionist learning theories, the DLDL will have three fluid zones: one for design (design thinking), one for playing (game-based learning), and one for making (Maker Movement).

Problem and Why it Matters

Public education in the United States has largely been defined over the last decade by the increased focus, in political and public spheres, on standardized tests and standardized test scores. The result is that many schools are caught in the cycle of reacting to outside forces that limit freedom, narrow thinking, and effectively leave many disillusioned with k-12 education. As the industrial age efficiency model for education remains largely intact, the affordances of new media and emerging technologies are largely muted.

Innovative education models seek to unlock the affordances of new media and technology. Innovative approaches allow for many possibilities including the reimagining of time and space, the development of interest driven individual pathways, and the repositioning of the roles of teachers and students to that of designers. School models that value design thinking, game-based learning, and the Maker Movement, are increasing in number, as society continues to dialogue about the 21st century learner and what contemporary students need in a schooling experience.

The DLDL is being designed to help cultivate reimagined visions for what teaching and learning can be in the high tech world of the 21st century. The DLDL will be home to a range of technologies that will afford students and educators the opportunity to choose tools with intentionality, as they follow their interests and focus on developing the requisite skills to address a specific problem or need.

Relation to Others

The Digital Learning Design Laboratory was deeply inspired and informed by the ongoing work of a number of teams and their associated organizations. The Principles of Connected Learning and the HOMAGO framework were foundational to the development of the DLDL, as we sought to build an interest driven space where learners of all ages could interact with new media and technology by Hanging Out, Messing Around, and Geeking Out. We looked to YOUmedia and the Digital Youth Network as exemplars for how to translate the Principles of Connected Learning into action. Schools such as Quest to Learn and PlayMaker informed both the design aesthetic and the curricular design process. The DLDL is attempting to build on the aforementioned work to engage a range of learners including k-12 students, teacher education students, and professional educators.

Process and Evolution

In late August 2013, following an unsolicited alumna gift, the concept for the Digital Learning Design Laboratory started to emerge. With only a seed of an idea at the time, NMU undergraduate students became involved in the design process through the 'Education Media and Technology' course at NMU. The students were confronted with a game-like course structure that positioned them as the designers of the new space, in need/search of 100K in grant funding. The students explored game-based learning and the Maker Movement, while developing design skills, as they followed unique learning pathways based on their individual interests. Students experienced game-based lessons, they dabbled with game design, and they hosted a mid-semester Maker Faire to engage university decision makers with new media and technology. By the end of the fall semester, the students had assisted in designing the physical layout of the room and effectively lobbied for technologies to include in the space. During the final meeting of the semester in December, the students learned that funding for the room had already been secured, dating back to August, and that construction on the room, inclusive of many of their ideas, would start in

January.

In January, construction on the Digital Learning Design Laboratory (DLDL) started. Some of the unique design features of the DLDL include: double decker maker tables that were made on campus by undergraduate students, the majority of furniture rests on casters which allows for the room to be reconfigured to match each desired experience, and more than 50 percent of the walls in the 1500 square foot space are covered with whiteboard paint to support group design work.

The room has been utilized on a limited basis throughout the construction phase of the project, which allowed for the integration of new equipment over time. The DLDL is currently outfitted with two 4K LCD TVs, three short throw projectors, four Makerbot 3D printers, a Makerbot Digitizer, Makey Makeys, Arduino boards, a MinecraftEdu server, a poster printer, GoPro cameras, Narrative Clip cameras, LEGO Mindstorms EV3 and WeDo kits, assorted wearables, an industrial sewing machine, a total of 24 Apple computers and tablets, and a robust collection of professional design software.

Next Steps

Construction on the Digital Learning Design Lab will be completed during the summer of 2014, with a grand opening planned for the beginning of the fall semester. While the physical construction is nearing completion, the DLDL concept is still fluid and will continue to evolve. What types of programming should be considered for k-12 students, teacher education students, and professional educators? How can we best grow this community? What experiences will have the deepest impact on learners? How can we connect and sustain a relationship with the broader (national) community?

A number of individuals and organizations have been engaged in hopes of solidifying plans for connecting a wide range of learners and educators with the DLDL. The ongoing process of reimagining education in the Digital Learning Design Laboratory is underway.

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