

Nexus Learning Grant Proposal—Digital Learning Tools to Enhance Student Learning

April 1, 2015

1. Project Abstract

The purpose of this project is to develop and assess the effectiveness of a scaffold of digital resources that support individual student learning in upper level design courses, specifically Jacquard and Advanced Jacquard. Students struggle with these courses as they are content-heavy, requiring rapid mastery of new information, technology, and collection resolution. Due to these challenges, six years ago I created a series of video demonstrations. While helpful, it is apparent that increased technological support via revised videos, searchable data fields and hyperlinks (a scaffold) will increase student mastery of course content.

My Nexus Learning hypothesis is that enhanced digital learning tools will support student learning through individualized pacing and mastering of complex and varied concepts. This project seeks to determine if increased integration of technology:

- Enhances pacing and depth of upper-level design courses.
- Enables students to participate as active, engaged learners in activities that foster exploration, synthesis and discovery.
- Facilitates better-informed design and structural decisions.
- Creates a structure that supports individualized learning in real-world projects.

The digital scaffold will be: developed in Summer 2015, implemented in 2015/2016 AY, assessed through focus groups, surveys, Blackboard site usage and assignment analysis, and disseminated through workshops and conference presentations.

2. Explanation of how the Project Advances Nexus Learning

Identification of Opportunity

Jacquard and Advanced Jacquard combine aesthetic and structural considerations to form image-based textiles. In these courses, students: create a targeted design collection, integrate industry-standard constructions, master a CAD program to translate designs into finished textiles and iterate to create a resolved collection. This process involves integration of previous learning experiences, which students find challenging.

As such, I began employing a flipped classroom model. I utilized Captivate software to create video demonstrations that marry structural concepts with software applications. Students watch the demos and apply the process to their designs. This homework allows me to assess comprehension and work through challenges in class. I have found these demos are a highly-successful learning tool, one on which students rely throughout the semester. This hybrid model, utilizing technology to provide tools with real world content, allows students to work independently, learning at their own pace.

Advancing Nexus Learning

This project seeks to expand the support of individualized approaches to learning and to the iterative design process. There is a high-level of content in these courses, requiring ongoing

student commitment and engagement with the material to be successful. With the current model, students struggle with the myriad possibilities that the courses present. This project is designed to create a scaffold that engages students; allowing them to learn/work at their own pace with sufficient, ongoing support. This project seeks to optimize opportunities for students to actively participate in their learning, apply knowledge and skills, and connect their learning experiences to the real world and to their future profession.

3. Specific Project Goals and Learning Outcomes

The overarching goal for this project is to assess the impact of technology integration in a flipped classroom model as a technique for individualized learning.

Primary Goals	Learning Outcomes
Develop scaffold of digital learning tools to enhance student learning	To determine if increased integration of technology enhances the pacing and depth of upper-level design courses. To determine if the scaffold allows students to learn at their own pace, mastering complex and varied concepts
Create interactive learning modules	To determine if this model supports the students as active, engaged learners.
Revise videos to model industry best practices	To determine if students are able to make better informed design and structural decisions through use of the scaffold

4. Description of Activities and Time Frame

- Summer 2015—Creation of video demonstrations (12 to 15 topics), searchable data fields and hyperlinks. Student focus group convened to test the new scaffolding.
- Fall 2015—Implementation of enhanced flipped model in Jacquard/Advanced Jacquard. Mid-semester and end-of-semester surveys administered to assess effectiveness of the model as a teaching/learning tool. Blackboard data analyzed to determine usage.
- Winter 2015/16—Analyze Fall 2015 data to determine necessary revisions.
- Spring 2016—Implement revised model. Administer surveys. Analyze Blackboard data. Revise for further implementation in future semesters.

5. Project Assessment

The project will be assessed utilizing the following measures: student focus group, student surveys utilizing Likert scale questions, tracking Blackboard usage and maintaining a log of student questions not addressed by the scaffold. Please see the below.

Primary Goals	Learning Outcomes	Evidence	Closing the loop
Develop scaffold of digital learning tools to enhance student learning	To determine if increased integration of technology enhances the pacing and depth of upper-level design courses. To determine if the scaffold allows students to learn at their own pace, mastering complex and varied concepts	Mid-semester and end-of-semester surveys	Review and analysis of results at the end of the F15 semester. Revisions made in Winter 15/16. Implementation in S16. Review and analysis of results at end of S16. Revisions as necessary. Ongoing incorporation.
Create interactive learning modules	To determine if this model supports the students as active, engaged learners.	Student focus group	
Revise videos to model industry best practices	To determine if students are able to make better informed design and structural decisions through use of the scaffold	Tracking blackboard usage; weekly question log	

6. Documentation and Dissemination

Project processes and outcomes will be documented and assessed throughout the project. Results will be shared with the Philadelphia University community through a campus workshop. Dissemination of the project will be proposed for pedagogical conferences including the Conference on Higher Education Pedagogy, The Teaching Professor Conference and the Lilly Conference on College and University Teaching and Learning. The goal is to have this project be a model to advance Nexus Learning strategies both on and off campus.

7. Project Personnel

I will be the primary faculty member involved in the project. Graduate students will participate through focus groups. Students enrolled in applicable courses will participate in Fall and Spring semesters.

8. Budget Narrative Worksheet

Please see the attached budget worksheet. Based on the videos created six years ago, 16 hours of work was required to create each 5-10 minute video. This significant time commitment can only realistically be undertaken in the summer. Four graduate students will be compensated for their involvement in focus group activities in summer and fall semesters. Camtasia software will likely be purchased to create the videos.