Online Teaching and Learning Experience: Capstone Research and Programming

Nexus Online Learning Grant 2014 - Final Report

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Project Overview

The purpose of this grant was to explore best practices introducing online pedagogy to an interior design seminar that was previously taught in a traditional, on-site lecture format. Capstone Research and Planning, a senior independent research course, was believed to be the ideal candidate for this pilot. In this course students research a specific design project type which might range from a homeless shelter to a hotel or a nightclub. Extensive research is completed during the fall semester, which culminates in a final book of the findings. This research is then utilized in the spring semester to inform student designs. The course features a weekly lecture but, for the most part, much of the research and writing is completed independently and students primarily meet instructors individually for personal critiques. There have typically been two sections of the course offered in recent years, taught by Professor Messinger and Asst. Professor Phillips. The two sections meet together weekly, sharing lectures, a common syllabus and assignment requirements.

There were two principal areas of concern for this grant that will be covered separately below.

Part 1: Online Peer Review (what we did)

One issue in Capstone Research and Planning was that in the past students frequently mentioned that they felt isolated in this very independent class structure. Since the projects are unique in nature, students expressed a desire to see more of the work of their peers in order to provide a frame of reference for their own work. Although there are many ways to connect students, collaboration and teamwork were less easy to apply to an independent research course. We had already added a few informal group critiques but we believed formalized peer review might be the answer for our particular problem.

Although we had tried on-site peer review in the past, we had less than exceptional results. Some students read faster than others, some students had difficulty focusing with others around. We believed students might respond more favorably to an online approach to peer review, allowing students to conduct their reviews remotely, since they already spend so much of their time online and feel comfortable in the virtual environment. We also hoped that students would see the value of not only having their work reviewed but also understand the benefit of doing the reviewing.

The first step was finding a method to peer review online. Our course features extensive writing but we also have students develop complex graphic formats. In the past we had used some of the online document management sites like Google Drive or Box.com, which allow one to upload files and folders to use for sharing, collaborations or for backup. We also used university sponsored systems like Blackboard or Moodle, which have an array of tools built in, including discussion boards, assignment uploading options and peer
The problem we had with all of these options however is that they usually require that Word files be uploaded in order to use most of the advanced tools. As graphic people we often work in Photoshop, InDesign and Illustrator, which were not files supported by many sharing site we could locate.

After extensive research, we finally found a solution by uploading a more universal file format, a pdf, which can be easily created from any program. These could then be uploaded to sites like Google drive and shared with the class. Unfortunately, the default pdf reader in Google Drive also has no markup tools so in order to provide peer review we still needed to use an add on application. The one we decided on was Notable PDF (which recently changed its name to Kami). Kami is a free program that allows in-text commenting, multi collaborators and an array of markup tools that other options were missing.

We knew we should train our student how to peer review so we discussed the tools available in Kami and provided standards so there was consistency. Various highlighter color markings meant specific problems in the peer review. One color meant the writing had grammar issues, spelling issues or sentences that were not formulated well. We designated another highlighter color to indicate two words that were repeated in close succession (“The building had a datum that divided the building equally”. A third color was reserved for what we called “banned words”, which were overused unprofessional words, often featured in marginal student writing.

When each new section of writing was due we imposed a deadline that the work had to be uploaded to Google Drive by. We then created a list of who would peer review who. This list rotated with each section so each student would review 10 different students throughout the term. We felt that the rotation helped students to view many of their peer’s work rather than the same student repeatedly. We also made the peer review a part of their grade so they were held accountable for doing it.

**Part 1: Project Assessment (what was learned)**

The peer review training went fairly smoothly and we found that most students were completing the peer review on time. After using the system for a few weeks we gave an anonymous survey to our two classes to determine the students’ opinions on the process. 95% of the students felt that the process was at least moderately helpful when being reviewed and also when reviewing.

<table>
<thead>
<tr>
<th>How helpful is it to YOUR process to have other students review your work in the peer review process?</th>
<th>Response Percent</th>
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<tbody>
<tr>
<td>Very Helpful</td>
<td>50.0%</td>
</tr>
<tr>
<td>Moderately Helpful</td>
<td>45.0%</td>
</tr>
<tr>
<td>Not Very Helpful</td>
<td>5.0%</td>
</tr>
</tbody>
</table>
There was a written portion of the survey that did reveal an area where we could improve however. Although there were many positive comments, students also felt that often the peer comments could be more critical and more focused. It was after this feedback that we provided an additional lecture on what constituted ideal comments. We also added a rubric to accompany the peer review process to focus students on the important topics for each section. Rather than grading their peers, we assigned categories that were more general including: “setting the pace” and “needs some improvement”.

Lastly, as a result of student feedback in this early survey we made one additional change to our process. Students voiced that they valued their peer reviews but that they wished they had the opportunity to make changes based on them before the instructor reviewed and graded them. In response we changed our policy so that if a paper was turned in by class time (9:30 am for both classes) then peer review had to be completed by midnight. The students then had a day and half to resubmit an updated version of their work which the instructor would then read and grade. This resubmission was not mandatory; however, several students eagerly took advantage of this opportunity to improve their writing.

It is of note that we did worry that this new system might lead to students turning in a poor first draft, knowing they could extend the deadline but this did not happen. Instead the peer pressure of having a fellow student read their paper was enough to keep such a practice in check.

Students were asked for feedback several more times throughout the semester and the rates of satisfaction increased as we refined the process. We also noted better writing being submitted and an exciting shift in sharing within the online community. Students quickly began to understand the power of the review and realize how much it could strengthen their research. They began to leave questions to their peer reviewer, asking for suggestions, mentioning areas where they were struggling or asking for opinions. As an instructor, it was enjoyable to add to the pre-started conversation within the online submissions. We were able to agree with the peer reviewer or add additional suggestions within the thread.

**Part 2: Online Video Conferencing** [what we did]

The second part of this grant addressed an issue student often had finding appropriate outside advisors in Capstone Research and Programming. Advisors are required in this course as students are generally dealing with project types they are unfamiliar with. Professionals are valuable resources but we had found in the past, that students typically were limited to advisors who were available, rather than those who were the most qualified or desirable. Our hope was that in an online learning environment students could instead utilize virtual interviews and conferencing to gain access to diverse experts in their fields.
Students were encouraged to find professionals on their own but we also located five experts from varied areas of speciality throughout the United States, including the cities of Miami, San Francisco and New York City. We set up Skype sessions with these advisors during class time, when students were able to directly ask questions concerning their projects. All students were required to attend, regardless of if the topic applied to them or not.

The inclusion of Skype interviews required some adaptation of the classroom to be certain that speakers were working and that we had an ethernet cable to minimize loss of the signal over wifi. Very few problems occurred during the five Skype sessions. Rarely, a connection was lost but in general, the process went smoothly.

Part 2: Project Assessment [what was learned]

As all Skype sessions occurred within a one week time span there was not a great degree of feedback that we could obtain except for discussion with the students after each session to determine if they felt that the process was valuable and successful. On all occasions, the students seemed to be surprised by the amount of information that was gained during the interviews. As a result, we continued to repeat the process without major adaptations. At the end of the semester, several comments were written on the final course evaluations specifically related to the interviews.

Student Comments from Reflections at the End of the Semester

I enjoyed the Skype sessions and found them very informative. Although the ones chosen did pertain to me, I did realize that not everyone in the class benefited as much from the sessions if they had a topic that was more unique.

I think the professionals covered most of the topics and their insight was very valuable. It's hard to cover every topic, especially when some are hybrids, but as long as the general categories are sufficiently covered it's great. Additionally, those of us who had advisors that seldom wrote back to us found it to be a valuable resource.

I found it inspirational and very informational.

This was great- even when it didn't relate to my specific project. I was able to draw from most of the Skype conversations for my own project.
End of Semester Results:

After the course was completed we conducted a final survey to compare the results of this class to the previous year. The results are below.

Since the Skype interviews were a new addition we had no previous information to compare the scores to but it is of note that students ranked the Skype sessions as the single most useful teaching tool utilized during the course of the 2014 semester, ranking even higher than individual critiques with the instructors, which scored the highest the previous year. “Consulting with outside advisors” also rose from 2.92 the previous year to 3.28 in 2014.

The score for “peer” review showed a very steep increase due to the online implementation. In 2013, when we had utilized in-class review the usefulness of peer review was only ranked at 2.92. In 2014, when we moved the review online, the number increased to 4.06.

Comparison Chart Between 2013 & 2014

<table>
<thead>
<tr>
<th>Method</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>skype sessions</td>
<td>n/a</td>
<td>4.67</td>
</tr>
<tr>
<td>peer review</td>
<td>2.92</td>
<td>4.06</td>
</tr>
<tr>
<td>consultations with outside advisers</td>
<td>2.92</td>
<td>3.28</td>
</tr>
<tr>
<td>literature based case studies</td>
<td>4.08</td>
<td>3.94</td>
</tr>
<tr>
<td>visits to case studies</td>
<td>4</td>
<td>4.05</td>
</tr>
<tr>
<td>instructor feedback you received via electronic markup</td>
<td>4.15</td>
<td>3.33</td>
</tr>
<tr>
<td>individual critiques with your instructor</td>
<td>4.69</td>
<td>3.44</td>
</tr>
<tr>
<td>lectures</td>
<td>2.46</td>
<td>3.65</td>
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Probably the most exciting change was that we noticed that the grades for each section seemed to be higher than in the past. To test if our intervention did have an impact on the final grades, we went back 4 years (which is about how long we have been teaching the course cooperatively) and calculated the average final grade average. It should be noted that the grades in the course are generally over a B (or 3.0) as the class is at the senior level and the ability to select the project makes the motivation high.

It was clear that the grade average in 2014 was at an all-time high for the course, with the average grade coming in at 3.55. This is particularly powerful when compared to the year before was almost 3/10th of a point lower. Whether this was due to peer review, Skype sessions or other factors not examined is difficult to prove but it is encouraging that the grade average increased, rather than decreased, during this time.

**Deliverables & Dissemination**

Two presentations (listed below) were made at design conferences, discussing the results of the research grant. In addition, we presented our methodology and best practices to the Philadelphia University Community during a Celebrate Teaching Week Presentation in 2016.

“Increasing Student Learning through Collaborative Online Methodologies”. Presented by Alex Messinger in March 2015 in Chicago, IL at the International Conference on Design Principles and Practices.


We continue to utilize the techniques implemented in our grant in Capstone Research and Programming. It should be noted that the peer review methodology has also been successfully utilized in the studio setting, to provide students with feedback when they are on fieldtrips and site visits.