Ms. Mary Faure and her team launched a team-based digital video presentation project for 200+ students in Engineering 1181/1182, replacing an in-person PowerPoint presentation. Students developed multimedia explanations of research projects conducted during the semester, which were presented in a showcase at the end of term and, optionally, made available in iTunes U and other venues. In addition to the impact on the 200+ students in Spring 2013 and the potential of 2,000+ students in future semesters, the project developed best practices for video assignments in large-enrollment courses, such as equipping computer labs capable of large-scale video production, training students in basic digital literacy skills, and developing standard assignments and assessment rubrics for instructors.
Overview

The 2012 EEIC Impact Grant project developed an online assignment to replace an existing in-class version in 3 sections of the first year Engineering Scholars course, Engineering 1182. The new assignment is to create a technical presentation of the student’s Advanced Energy Vehicle (AEV) design project in video format. The previous assignment called for students to create a PowerPoint slideshow and deliver it in person in the classroom. The assignment directions, instructional modules, software tutorials, and surveys were provided as links from Carmen. Students worked in their 4-person design teams using out of class time to create the required visuals, video segments, storyboard and script, which they compiled using Camtasia software during open lab time using the PC computers in the EEIC classroom, Hitchcock 308 and in the first year computer lab, Hitchcock 342. Since the successful pilot, the assignment has been extended to an additional section of ENGR 1182, for a total of 4 sections in SP 14, and a modified version is being offered in 14 sections of second year writing, ENGR 2367 in Au 2013.

Outcomes

Students participating in the pilot successfully created technical presentations in video format. Their projects earned grades within the project’s target success criteria and earned course grades consistent with those of non-pilot sections.

After considering the results of the video assignment and the Hybrid nature of the experience, we feel that similar assignments could be successfully implemented in other targeted areas of engineering courses. Course planners and course teaching staff should collaborate closely and expect to spend a substantial number of hours developing their assignment materials, rubrics, and review processes.

Process analysis

The EEIC and ODEE teams immediately developed a close and effective working relationship during the drafting of the Charter and scoping for the project, which continued throughout the project. The ODEE team possesses experience that is essential to establishing a technology-driven assignment and developing an IRB-oriented research project to assess that assignment. Some of the necessary tasks were difficult for the EEIC team to complete. An unexpected rise in enrollment restricted access to some of the EEIC resources originally identified for the Impact Grant project. In those instances, the ODEE team filled in. The teams performed consistently, reliably, and with patience when needed to ensure that the collaboration remained positive.

What we learned, in a sentence

Tech-savvy first year engineering students can successfully plan, draft, develop, and deliver technical presentations in video format, provided sufficient resources and support.
Project Committee

Engineering Education Innovation Center

Project leads

- Mary Faure—Project Author
- Dr. John Merrill—Project Co-sponsor
- Dr. Robert Gustafson—Project Co-sponsor

Project contributors

- Andrew Parkhurst—Project Contributor and ENGR 1182 Lecturer
- Dr. Phil Schlosser—ENGR 1182 Lecturer
- Dr. Annie Abell—ENGR 1182 Lecturer
- Dan Vehr—Information Technology and Infrastructure Support
- Russell Stech—Graduate Student and Teaching Assistant
- Jill Bryant—Financial Officer

Office of Distance Education and eLearning

Project lead

- Thomas Evans—ODEE Sr. Instructional Designer and Open Courses Coordinator

Project contributors

- Robert Griffiths—Director, Digital Scholarship and Development
- Henry Griffy—ODEE Grants Support
Project Overview

Project Motivations

Engineers must have strong writing and oral communication skills in order to succeed in their professions. Regardless of the type of position they hold, their need to be able to convey information to multiple audiences for many purposes is a large part of their responsibilities. Therefore, it is necessary to begin developing foundational writing and oral communication skills and familiarity with multiple communication channels early in the engineering student’s career. The first year program is ideally set up to begin that skill building and allows students to explore three types of reporting: technical documents, description of the design process they learn, and the delivery of several presentations.

With this project, we propose to enhance literacy training (e.g., writing and oral communication skills) by converting an in-person oral presentation assignment to a digital-video presentation format.

Problem

Traditionally in the quarter system, students received instruction in making team oral technical presentations, and these presentations were assessed using specified success criteria during in-person delivery of the presentation in the classroom.

However, during semesters, two challenges to the first year program required a response. The first is that classroom sessions are shortened compared to the quarter system; the second is that enrollment in classes required that classroom size be increased to allow for the additional enrollment. These challenges necessitated a move to the Hybrid model for some assignments, including the oral communications component which became an out-of-classroom oral presentation assignment.

Opportunity

Further, the nature of the literacy skills engineers need to possess continues to evolve. While the ability to plan, draft, and deliver in-person presentations remains necessary, digitally mediated or recorded communication is becoming increasingly common.

Government, organization, academic, and industry examples of key program, technical, news, and product information delivered in video format are more and more common.
Therefore, current and future engineers need to know how to plan, draft, and produce information for video formats and in some cases, to use video production software to create a workable version themselves. Appendix A below provides further examples of information provided in video format.

This expansion of communications channels, the shift to semesters at Ohio State University, and the desire of the instructional team to create a Hybrid assignment, provided the environment necessary to re-envision the oral presentation assignment in the Engineering (ENGR) 1182 course from the traditional, PowerPoint-supported live team presentation to a team-produced, technical presentation in video format. ENGR 1182 is a common course for all non-honors, first-year students of all engineering disciplines and serves over 1,700 students each year.

Today’s engineering students are technology-savvy. They use personal handheld electronic devices, such as iPads, Smartphones, and laptops with the ease of lifelong users. These students tell us that they get information and communicate with one another, family, and the University chiefly through electronic channels such as email, texting, Twitter, Facebook and websites. Therefore, one of our assumptions in preparing this assignment for today’s engineering students was that the opportunity to learn new technology would be inherently interesting to them. Later in this report, evidence is described that confirms that our assumption is correct.
Project Goals and Objectives Outcomes

Goals achieved

The project achieved its overarching goals:

• Students gained planning, multimedia, and presentation skills.
• Students are better prepared for subsequent courses and future employers

In pursuit of these goals, the following objectives and milestones were achieved:

• Following UCAT recommendations for incorporating a multimedia assignment into the course:
  o Creating Course Goals and Learning Objectives (login required)
  o UCAT: Course Skeleton
• Defining the multimedia assignment – a technical presentation in video format
• Fitting the multimedia assignment within the course layout – the assignment was to be completed entirely outside of class meeting time.
• Selecting the software solution
  o Selected software that offers screen capture and editing, including crop, splice, add text, add audio, slow down, speed up frames. – selected Camtasia
  o Selected software costs $131.00 per seat for licenses
  o Selected software that accepts media from many formats and can combine them into one video file viewable in a common viewer such as Windows MediaPlayer and other common viewers – accepted all formats that we were aware of.
• Selecting hardware to run the chosen software solution – Classroom: Hitchcock 308 and Lab: Hitchcock 342
• Creating assessment plans
  o Assignment – wrote assignments, rubrics, placed on Carmen
  o Project – with assistance from GTA created a rubric for evaluation of final videos
• Creating assignment instructions
  o The project team produced instructional modules that provided the step by step instructions that students require to produce the components of their technical presentations
  o Produced an assignment plan that includes iterative, scaffolding techniques, including storyboarding, technical reporting, and multimedia production.
  o Project staff became competent in using and applying the concepts of technical video media
  o Still in progress as of Summer 2013. The instructional team is creating materials to "teach the teacher." Materials will include workshops given by key Project Team Members; How-to worksheets and sample videos with commentary on how they were created. Links to useful resources.
  o Created materials for the students: instructional modules, worksheets, checklists, and homework assignments, surveys, samples of expected video results.
• Created a pilot course experience in which:
  o Students submitted a PDF of the initial design
  o Students submitted a storyboard draft in MSWord format.
  o Students recorded SolidWorks designs in Camtasia.
  o Students recorded video introduction segment
  o Students recorded post design team reflection video
  o Students edited individual recordings into a complete a video-based engineering design process presentation.

Print assignments with graded comments were included in the teams' Project Notebooks for evaluation at the Showcase on April 19, 2013. Videos were shown on a continuous loop in the Showcase Ballroom in the Lane Residence, in April 2013.

• Determine a video project distribution plan – used Carmen for links and YouTube as the repository for student team videos.
  o Students reported that they experienced few access problems to the instructional materials, the software, or the examples

• The team has begun to analyze results from pilot run. An issue with the data collected in Carmen has delayed this analysis.

• Mary Faure and Tom Evans delivered a conference presentation "Scaling Up Team-Based Multimedia Assignments: A Case Study" at EDUCAUSE Midwest Regional Conference March 19, 2013.

  Abstract:
  In most professions, strong authoring skills are required. Therefore, it is necessary to begin developing foundational writing and oral communication skills early for students. However, these early classes, especially at public institutions, enroll hundreds, if not thousands, of students. Scaling video and other multimedia projects can be complex, and quite frankly, a daunting task. This session will showcase an exemplar process and best practices for scaling a group-based student video assignment for hundreds of students, with the potential for scaling to thousands per semester. Small group discussion will facilitate an action plan to take back to your home institution.

Goals partially achieved

• A focus group is planned in July 2013.
• Team Faculty plan to share their findings to the American Society of Engineering Educators (ASEE) and STC Journal in 2014.

Goals not achieved

• The IRB-approved research for the course did not result in sufficient data to assess project success, as discussed above.
Goals not actively pursued

- It has been determined that full scale implementation of the video assignment across all sections of ENGR 1182 will not be possible in Au 2013. Instead, the pilot will continue in Sp 2014 with 4 sections of ENGR 1182 Scholars, a total of 288 students. The issues and opportunities for implementing a video assignment are described later in this report.

An updated extension to the assignment is to deliver a pilot as part of ENGR 2367 in all 14 sections meeting in the new Technical Communications Classroom, Dreese 713 in Au 2013.
**Project Implementation**

**Students impacted by pilot**

Approximately 216 undergraduate, first-year engineering students enrolled in three ENGR 1182 Scholars sections participated in the pilot of this Impact Grant project in the spring of 2013. Their piloted assignment was to create a team technical presentation in video format. The subject of their video was their Alternative Energy Vehicle (AEV) cornerstone design project. The Impact Grant project was proposed, planned, and the materials were created by Mary Faure, Manager of Technical Communications for the EEIC, and assisted by Andrew Parkhurst, Lecturer in the EEIC.

**Approximate time spent by EEIC instructors and staff**

Three principal Lecturers, Dr. Phil Schlosser, Annie Abells, and Andrew Parkhurst, provided the daily instruction for the pilot course during spring of 2013. Supporting them were three GTAs and six UTAs. As the project author, Mary Faure did not have a daily instructional role in the ENGR 1182 course in spring 2013.

The grant project occupied approximately 500 hours of Mary Faure’s work time spread over nine months. Andrew Parkhurst created a 3-part instructional module as part of the instructional materials for the video project. Andrew invested approximately 80 hours to draft and produce his module.

Because the video assignment was to be completed by students outside of class time, the course Lecturers, the GTAs and the UTAs did not have regular duties for the video assignment during the pilot in spring. Brief announcements regarding where to find the assignment details on Carmen, the graded tasks to be completed, the instructional modules, the surveys, and the TechSmith software tutorials were provided during class on a few days.

Students were expected to complete the tasks, submit materials either in print or using the Carmen dropbox for evaluation and feedback, and to complete the segments of their videos using out of class time.
**Budget and Expenditures**

The budget breakdown for the project consisted of the following expenses:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software purchases</td>
<td>$13,500</td>
</tr>
<tr>
<td>Staff time for PC Upgrade/Lab Upgrade</td>
<td>$3,500</td>
</tr>
<tr>
<td>Release time</td>
<td>$3,500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$20,500</strong></td>
</tr>
</tbody>
</table>

**Piloted Video Assignment**

The Advanced Energy Vehicle (AEV) project is based upon a transportation scenario that is updated annually with new circumstances, vehicle maneuvers, and metrics required. Students in teams of 4 are directed to design a vehicle using a set of provided parts and other materials that they are encouraged to obtain. The instructional team implemented the outside-of-class assignment for which students created their technical presentations utilizing:

- hand drawn design sketches,
- still images generated from Solidworks software,
- Solidworks animations of the design,
- edited screen capture with scripted voice over audio, and
- video footage.

Students created their videos step-by-step by planning the sequence of visual information, drafting a script to explain each visual, delivering their script to accompany the visuals, and editing the material to improve the draft video.

In addition to revising the curriculum to incorporate the new assignment, the instructors created multimedia modules instructing the students how to plan and execute a quality oral technical presentation using digital video. Conversion of the in-person, PowerPoint-based final oral presentation to a digital video presentation required many of the same skills, yet also introduced students to new software, planning processes, and communication practices that they can now use, and often will be required to know, in later courses and in their careers.
EEIC 1182 Scholars students embraced the video project with enthusiasm as expected. At first, they were confused by the Storyboard, but once they saw Camtasia, they understood the chronological relationship between the Storyboard as a planning tool and the timeline interface in the software.

Students reported no significant difficulties with the software, the assignment, the technical points they were to make, or the production aspects of the project.

The students’ experience with the video project was very good. Grades on all the evaluated tasks were excellent with 100% of points given to all teams. The videos the teams produced were of varying quality as was to be expected. All the teams videos met the 80% of points criteria expressed in our project plan.

During the spring pilot, few students brought significant questions to the teaching staff or the project author, Mary Faure. The Scholars Showcase allowed a public demonstration of the videos, which were strong overall in meeting the goals of the assignment.

**Examples of the students' videos:**

Group "E" [http://www.youtube.com/watch?v=SZLOgniMf2w](http://www.youtube.com/watch?v=SZLOgniMf2w)

Group "N" [http://www.youtube.com/watch?v=8oP0r6hcXG0](http://www.youtube.com/watch?v=8oP0r6hcXG0)

Group "R" [http://youtu.be/dqUhkghsu8k](http://youtu.be/dqUhkghsu8k)

Group "F" [http://www.youtube.com/watch?v=RG506zU83sg](http://www.youtube.com/watch?v=RG506zU83sg)

**Analysis of Data from Pilot Assessment**

Data were to be gathered using several student surveys, one early in the course ("pre"), one following each major stage of the assignment, and one during the last week of the course ("post"). Surveys were composed, approved by the IRB, and made available via Carmen. However, student response rates on all but the pre-course survey were too low to make the data meaningful. It is thus not possible to provide quantitative evidence for the impact of the assignment.

The surveys placed on Carmen were to have been completed by every student. This was not emphasized sufficiently to motivate all the students to access and complete the surveys. The Pre-Assignment survey was completed by 66 students. This is roughly 1/3 of the enrollment. Participation in the surveys dropped substantially after the Pre-Assignment survey. Table 1 summarizes results from the surveys indicating the students' strong positive comfort with the use of technology. These results confirm our pre-project
assumption that first year engineering students are tech-savvy and are likely to find learning new technology interesting.

When asked why they did not complete any/all of the surveys, students stated that they found the other class project assignments difficult, changes and updates to the class schedule confusing, and the surveys on Carmen tedious, so many ignored the survey task. It is suspected that even if course points had been assigned, they would have completed the surveys reluctantly.

Table 1. Selected results from Carmen survey data.

<table>
<thead>
<tr>
<th>Pre-Assignment Survey Question</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Somewhat Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology helps me achieve my academic outcomes.</td>
<td>22</td>
<td>40</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>I get more actively involved in courses that use technology.</td>
<td>16</td>
<td>35</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>By the time I graduate the technology I have used in courses will have adequately prepared me for technology likely to be used in the workplace.</td>
<td>17</td>
<td>41</td>
<td>7</td>
<td>1</td>
</tr>
</tbody>
</table>
Next Steps

Plan for another pilot in ENGR 1182 Scholars sections 2013-2014

The EEIC has experienced a surprising uptick in first year student enrollment. In 2012-2013, several additional sections had to be created to satisfy the enrollment. In 2013-2014, that enlarged enrollment is set to increase again beyond the facility’s capacity to provide access to all students for the video assignment.

While the video project is a success for the Scholars sections, and the curriculum plan for 2014 includes the scholars sections (288 students) completing the video assignment, expansion to all sections of ENGR 1182 is on hold due to a substantial increase in student enrollment numbers for fall, the cost of the software to provide access to this larger number of students, and the issue of classroom and lab access for all students. The EEIC does not possess sufficient space to adequately support the assignment at this time.

Expansion of Video Assignment to ENGR 2367

Instead of expanding the assignment across 1182, the Technical Communications team has elected to pilot a modified video assignment that fits ENGR 2367’s (Second Writing) focus and topics. TechSmith’s online tutorials and in-class instruction and demonstration will be provided on using the Camtasia software along with successful examples. Classroom time will be scheduled to assist students in completing the video assignment in teams of 3-4 students. The pilot for this assignment will be in Autumn 2013 (14 sections, 350 students).
Reflections on the Impact Grant Process

What role did the Impact Grant (money and support) play in the project?

This project could not have occurred without the funding, support, technical assistance, and leadership provided by Rob Griffiths, Tom Evans, and Henry Griffy.

The funding was vital seed money to get the project started. The EEIC instructional team is greatly interested in creating Hybrid courses. The funding allowed the exploration to begin at a critical time in curriculum development so that a solution could be found to the communication skills learning objective for ENGR 1182.

Members of the EEIC instructional and administrative team possess the interest and experience to create instructional materials. The team was pressed for time on other curriculum projects and could not have devoted the time drafting a Charter, finding software candidates and testing them, and meeting with staff from UCAT, the OSU Copyright office and the ADA office without the scheduling help and support of Rob Griffiths and Tom Evans. They were instrumental in facilitating connections for the EEIC team both intellectually and technologically.

The IRB process necessary to create a satisfactory project plan was outside the scope of experience of the project author, Mary Faure. Rob Griffiths provided guidance and brainstorming ideas that supported the EEIC team’s thoughts as they drafted the plan. This part of the process could easily have delayed the project, and it did not because of Rob’s support.

Aspects of the grant process, procedures, and collaboration

Unanticipated benefits that positively impacted project success

The choice to work in an academic setting is sometimes made because of the enjoyment of teaching activities, the desire to help young people succeed, and the belief in the importance of the subject matter being taught, especially as it pertains to supporting the people who will develop the engineering innovations of the future. It is a privilege to teach engineering students at The Ohio State University.

To gain the added benefit of participating in a digital initiative such as our Impact Grant project is significant to all of us. The project extended our capabilities as well as those of our students. In addition, to see confirmed that our assumption regarding the interest of our students in technology provides an intrinsic benefit to the instructional team.

These are the primary unanticipated benefits:
• That tech-savvy students confirmed their ability to work independently on a challenging project using unfamiliar software.
• That we can now expand a similar video assignment to ENGR 2367 because the ENGR 1182 pilot is successful and because in a concurrent project we have gained the Dreese 713 classroom space from the university pool and transformed it into an appropriate PC-supported classroom for teaching technical communication skills to engineering students.

**ODEE Staff**

Everyone on the Impact Grant team performed admirably in every moment that they supported the project.

**Aspects of the project that worked above expectations**

The Impact Grant project staff, Rob Griffiths, Tom Evans, and Henry Griffy, diligently supported the EEIC team’s progress through the project process. Step by step, they helped us understand how the many aspects of an IRB project work together to provide measurable data about the success or shortcomings of the project.

Tom Evans’ software skill set is uniquely suitable to graphics, distance, and video instructional projects. He has the training and creativity to take a concept that I envisioned and represent it accurately via a segment of the 1182 instructional video modules. He taught me a number of tips about how to create a good video that allowed me to finish several on my own.

Henry Griffy has a broad range of talents including effective teaching skills that he used to help me learn how to phrase objectives and outcomes and to construct effective survey questions. Henry also has extensive knowledge of Carmen which he was able to use to help me build a question library, upload that to Carmen and construct surveys much more rapidly than I could ever have done on my own.

**Unanticipated risks that negatively impacted project success**

**Carmen as a Survey Tool**

The grants process favors ODEE services, which led us to choose Carmen as a tool for conducting surveys. Carmen did not perform reliably as a tool for conducting surveys. Exported results contained incorrect information. The VLE team overcame this data error by exporting through SQL which allowed for analysis but delayed the process. The grants team had to spend additional time processing the results to get usable output.
Key lessons learned

The EEIC project team members learned that engineering students can use video to communicate their designs and research and this is a powerful form of literacy that we need to teach and they can learn.

We learned how to develop the facilities required to sustain complex multi-media assignments across multiple courses that can scale to accommodate a growing enrollment.

Scaling any assignment to present to hundreds of students requires careful planning and effective collaboration. The second Introduction to Engineering course options (ENGR 1182 and 1282) are very high enrollment courses. Typically, the EEIC provides instruction to a total enrollment annually of 1,700 + regular students; 220 Scholars students; and 500 + Honors students. These numbers are rising to such an extent that the number of students is challenging the facility’s capacity.

Timing is everything. The instructional staff for ENGR 1182 Scholars found it a challenge to provide the kind of attention to daily instruction while simultaneously reminding students of the tasks to complete for the video assignment. The source of challenge was primarily that they were simultaneously adjusting to semesters and to a brand new curriculum. We could have done a better job of anticipating that staff time conflicts would arise.

Suggestions for improvement

An aspect of course improvement not considered at the outset of this project was the total scope of change occurring concurrently within the program and at the university. The video assignment pilot itself went well. It would have been better had we, the project team, been more aware of the risks caused by implementing a new curriculum and a new semester scheme simultaneously.

As the transition to semesters is likely to be a one-time change at Ohio State, its impact will be felt only once. However, course content changes regularly; therefore, future project teams need to be made more aware that content change can cause delays and unexpected negative impacts on the implementation of a new digital assignment pilot.

Suggestions for future recipients

This project was successful because we had the expertise, support and sometimes actual assistance to complete tasks from the ODEE grant team. Without them, the project planning, materials creation, IRB process, and Carmen surveys would have been much more difficult to create and would have taken much longer to produce.

We recommend that teams be realistic about the amount of time and expertise each team member can contribute and, when gaps are apparent, that the ODEE grant team be called
upon to assist. The ODEE grant team members have the experience and specific knowledge of tasks necessary to complete digital and distance education projects.

**Three Words to describe working with ODEE grant team**

1. Reliable
2. Robust
3. Professional

**Describe an "ah-ha" moment during the grant project**

While reading background material on out-of-class assignments and flipped classrooms, as the project author, I realized that *motivation to persist* was key to the students' successfully completing any out of class project.

I had to develop a rationale that would establish in the students' minds that this project was pertinent to their future success and could be a useful tool for finding internships or career positions.
This project presented an opportunity to develop a communication experience for our first-year engineering students that will allow them to further develop fundamental communication skills in the discipline while using modern tools.

In the first-year engineering sequences we give considerable focus to both communications and teamwork. Our philosophy has been to create realistic experiences where students can develop both communication and teamwork skills in a supportive and structured learning environment. By converting one of our presentation exercises over to use a video format, we can continue to effectively both introduce fundamentals of visual and oral communication as well as forward looking technology for this task. Student and faculty are both highly motivated by this.

Although the pilot was very successful, we will be doing a second year testing at a slightly larger scale (288 students) prior to considering full-scale implementation (more than 2,000 students per year). The additional time will be needed to align technical resources including time to address software and hardware issues for full-scale, training of personnel and finalizing of curriculum resources. I am optimistic that this can occur; it will just take some more time and cycles of development. I am pleased that in the interim we will see this approach implemented in selected sections of ENGR 2367, the second writing course, offered through Engineering. As these students progress through their academic careers I have no doubt that they will take full advantage of the knowledge they have gained through this approach. It will serve them well in future classes and in the development of professional portfolio material.

This project has allowed EEIC staff support needed to pilot this new approach. The staff have gone well beyond the norms of curriculum development expectations and are enthused about continuing the project. Support of the ODEE grant team has been very professional and critical to its success so far. I expect that the relationships developed will continue to be productive for future projects.

Robert Gustafson

Professor and EEIC Director
Survey Response

Please indicate how strongly you agree or disagree with the following statements:

1) I am satisfied with the communication I received from the ODEE staff.
   a. **Strongly Agree**

2) I am satisfied with the grant project contributions I received from the ODEE staff.
   a. **Strongly Agree**

3) I have learned the skills necessary to continue related work on my own.
   a. **Strongly Agree**

4) I found the ODEE staff approachable.
   a. **Strongly Agree**

5) The lessons learned during this pilot will guide future course design.
   a. **Strongly Agree**

6) Additional comments or feedback
Closing Thoughts

The Digital Scholarship group supported the efforts of the EEIC project team 110% throughout the process. When we felt we were stuck, we called upon Tom Evans, Rob Griffiths or Henry Griffy for help without any hesitation. Without their support, the EEIC team would not have attempted to complete an educational technology project of this scope and at this time of vast changes at Ohio State.

As project author, I also realize now, in June 2013, that this project was more difficult to complete than I had believed last year due to unanticipated semester change complications, curriculum changes, and pacing problems. The ENGR 1182 Scholars sections were behind schedule in creating their projects before spring break. To create the video, students needed to have project components finished at various steps in the process; therefore, as the project was delayed, so was the video assignment. The instructional staff basically could not support both the in-class curriculum and the video assignment. Fortunately, the students helped each other and used the instructional materials they were given effectively.

Students said that they struggled at the end of the term to finish their Alternative Energy Vehicle (AEV) design project and yet they completed their videos successfully despite issues caused by the many challenges. I believe the reason the students’ videos are successful is that the video assignment was fun, had a purpose beyond use in the course, and was instantly rewarding for them since they could see and hear the product of their efforts.

During the Scholars Showcase, as a judge and as the project author, I evaluated the project notebook and videos of 48 students (in teams of 4) out of the 216 enrolled in the course. Many of these students stated that they now [at the conclusion of the course] have a product that they can be proud of and that they can use to get internships, to get career positions, and to inform their creation of future video technical presentations.

In the end, the project created a win-win for the students and the instructional staff.

- Mary Faure
Appendix A: Uses of Multimedia Literacy in Engineering Education

Appendix A provides links to just a few examples of other academic organizations that sponsor student video projects in engineering:

• **The National Academy of Engineering** ([www.nae.org](http://www.nae.org)) hosted an engineering student video competition: [http://www.nae.edu/?id=65183](http://www.nae.edu/?id=65183)

**Two Engineering School Video Competitions:**


• US Dept. of Energy Information for the Public
  

• **Microsoft User Support Videos**
  
  [http://www.microsoft.com/athome/video/entertainmentcenter.aspx#fbid=NYtUQ6qVXH2](http://www.microsoft.com/athome/video/entertainmentcenter.aspx#fbid=NYtUQ6qVXH2)

• **National Council on Teacher Quality**
  

• **University of California, San Diego "microgrid"**
  
  [http://blog.rmi.org/the_ucsd_microgrid_showing_the_future_of_electricity_today](http://blog.rmi.org/the_ucsd_microgrid_showing_the_future_of_electricity_today)

• **OSU Your Plan for Health 2014 Health Insurance Changes**
  
**ODEE Experience**

**Project Charter to Analysis relation**

In the project charter, we set two goals for students and one for faculty.

Through the project, we wanted students to gain planning, multimedia, and presentation skills. We also wanted students to be better prepared for subsequent courses and future employers. Due to lower survey response rates, it was difficult to ascertain whether there was a gain in planning skills. However, the quality of student video presentations indicated a higher skill level in multimedia and presentation skills. This higher skill level helps prepare the student for more advanced courses along with the engineering workplace.

The goal for faculty was to have instructors gain multimedia and presentation skills. While the curriculum coordinator gained skills in multimedia production and presentation, the faculty teaching the courses remained removed from the video presentation assignment. In subsequent applications of this assignment, one recommendation would be to actively engage the faculty to have them closely involved in the assignment preparation and implementation phases.

**Approximate number of ODEE people-hours spent on the grant project**

150 hours

**Reflections on the grant process—what went well**

Mary Faure was a great project partner. She was highly interested and motivated to learn the tools that the students would be using in this class. She made it a point to model her tutorial videos after the same process that the students would follow throughout the technical presentation project. Overall, Mary was committed and worked hard to produce each module for the project.

Throughout the grant, we collaborated with various people from within ODEE and the University as a whole in support of this project. From consulting with UCAT on course design to working with Cindy Gray on storyboarding, a plan for building the assignment came together.

**Reflections on the grant process—what did not go well**

In looking at the overall progress of the grant, there were a few obstacles that needed significant effort to overcome. First, the addition of two high level changes in the course, overall curriculum and video project, resulted in some confusion at the faculty level which in turn caused the timeline of the course to vary among sections. With all three courses
running at a different pace, it was difficult to maintain a balance in the grants timetable. Second, there was some shakeup within the EEIC team when one team member was taken off direct involvement with the project. This ultimately caused some delay in the production of the modules. Third, the lack of faculty involvement in the grant project process detracted from our ability to capture analytical data in our research of this project. The faculty weren't interested in promoting the module surveys and, in turn, the students response rate was lower than needed to draw meaningful conclusions.

**Three words to describe working with the EEIC Team**

1. Eager
2. Dedicated
3. Curious

**Describe an "ah-ha" moment during the grant project**

An ah-ha moment for this grant was when I realized how critical it is to have the course faculty on board and involved in the grant project from start to finish. While the faculty might not have been as ingrained in the project as the curriculum advisor was, the project did yield successes and quality student outcomes both in their videos and in their satisfaction of the project. Because the faculty weren't headlining the engineering technical video presentation project, they weren't reminding students to watch the modules and take the surveys. This led to a very poor survey response rate. That said, the poor survey response rate doesn't imply that the students didn't like the assignment, in fact, anecdotally, students shared that they were really engaged in the project.

**Changes to our processes from this grant experience**

After this grant was completed, it really brought to mind how direct faculty involvement is integral to the successful implementation of a course transformation project. Working with the curriculum advisor as a lead in a grant is good; however, direct faculty buy-in and involvement throughout the entire process is critical for maintaining student involvement in all aspects of the project. Going forward, I believe that our Grants team will take more initiative to insist faculty teaching courses transformed by an Impact Grant are involved and invested throughout the entire grant project process.

- Tom Evans