Transformative Writing Technologies: Improving Student Writing in English 2367 through Technology-Enhanced Instructional (Re)Design

The Transformative Writing Technologies (TWT) project enhanced student learning in three hybrid sections of English 2367 in Spring 2014 through hybrid pedagogies and learning technologies designed to coordinate large-scale peer-review and provide learners and instructors with analytics detailing student performance. This project made available to on-campus OSU students learning opportunities originally developed to support a Writing II Massive Open Online Course (MOOC).
Executive Summary

Goals
The TWT project revised both the delivery and content of English 2367, incorporating new technology to facilitate peer-based learning across sections of English 2367 and enable individual student self-reflective assessment. The project also sought to achieve better the learning outcomes articulated by the General Education Curriculum of The Ohio State University and the Ohio Board of Regents and create mechanisms for programmatic assessment of student learning.

Outcomes
The fifty-nine pilot students reported high satisfaction with the course. Peer learning opportunities available through discussion forums on u.osu.edu and peer review and discourse analytics in WEx (The Writers Exchange) greatly enhanced their learning. Instructors reported much more robust student self-reflective assessment in all facets of the course: peer review, writing and the writing process, and general learning aptitudes. Instructors also recognize the value of WEx as a tool for programmatic assessment of student writing and learning.

Process Analysis
The three main components of the project were achieved with minimal disruption:

- Technologal: The WEx engine was adapted for use in multiple on-campus sections of English 2367 and to communicate with OSU's learning management system, Carmen.
- Pedagogical: Assessments and activities of English 2367 were revised to accommodate these new technologies and pilot three sections of the revised course.
- Programmatic: Strategic working relationships in support of the project were leveraged to increase awareness of the project in the department and college, and to arrange ongoing support for the future development of the technology components.

What We Learned, in a Sentence
WEx—when employed in a pedagogically-robust fashion—has the potential to transform students’ engagement with their writing and learning at the University.

5 Talking Points
The instructional technologies employed in the “Transformative Writing Technologies” demonstrated for the project team the following:
1. WEx, The Writers Exchange, successfully facilitated peer-based learning among students across multiple sections of English 2367.
2. The u.osu.edu blog site also facilitated peer-based learning across sections of English 2367 although less consistently or productively than anticipated.
3. Both WEx and u.osu.edu enabled individual student self-assessment as both technologies allowed students to view their own progress and performance relative to their peers.
4. WEx holds great value (if used across multiple sections of 2367 or other writing courses) as a mechanism for programmatic assessment and assessment of student learning.
5. WEx, if integrated in coming years into writing intensive courses across the curriculum, may also serve as a University-wide platform for writing assessment and student self-reflection on learning.
Project Committee

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Project Goals and Objectives

Overview
The overall project goal for "Transformative Writing Technologies" was to enhance student learning in English 2367. Specifically, we aimed to improve student writing by deepening student understanding of the transactional nature of writing and facilitating student investment in peer- and self-assessments. In striving to meet this goal, we identified three challenges, all of which we successfully addressed through the project:

Challenge #1: Creating and Maintaining Consistency in Course Learning Objectives and Assessment
Through WEx Analytics, instructors and students were able to monitor and interpret aggregate student progress day-to-day, facilitating student self-assessment, instructor assessment of student performance and progress, and curricular efficacy. In other words, the data collected through the Analytics Engine provided comparative insights into student performance both synchronically and diachronically and can continue to serve as a mechanism for student self-assessment, program assessment, and curricular responsiveness to student performance.

Challenge #2: Limitations of the Current Course Structure and Implications of the Range of Student Demographics and Levels of Preparation
Utilizing these technologies in meaningful and consistent fashion enabled instructors and students of all levels of proficiency and experience to monitor and interpret student progress and instructional efficacy on a class-to-class basis. The technologies also facilitated more robust student self-assessment and writing assessment. WEx, utilized across multiple sections of English 2367 in the pilot project, also enabled students to interact with a wider range of peers and benefit from that greater diversity.

Challenge #3: Institutional Demands and Expectations
By engaging students as writers, reviewers, and editors through WEx and as self-reflective writers employing the elements of WEx Analytics, instructors in 2367 were able to deliver "just in time teaching" to facilitate "just in time learning" among students. By focusing instruction on meeting GE and OBR outcomes, instructors were able to emphasize to students the importance of those outcomes and determine the degree to which students (individually and collectively) met those objectives. In other words, because the peer review system in WEx is built around rubric-based assessment, the data were refined by instructors to speak directly to the GEC and OBR outcomes—ensuring closer relationships between course assessments and GEC and OBR outcomes.
Project Objectives contributing to Project Goals

The project employed technology-enhanced pedagogies that sought to:

- Facilitate peer-based learning across sections of English 2367
- Enable individual student self-reflective assessment
- Create mechanisms for programmatic assessment of student learning

Specifically, this project piloted the following enhancements in Spring 2014:

- Adapt the WEx engine for use in multiple on-campus sections of English 2367
- Revise curricular and assessment elements of English 2367 to accommodate these new technologies
- Pilot three sections of the revised course
- Arrange ongoing support by ASC Tech
- Identify and address programmatic and departmental process goals

The project achieved each of the general goals identified above. Details of the degree to which goals and sub-goals were met are noted below. Short commentary within each goal section articulates the degree to which goals and sub-goals were achieved.

**Goals achieved**

- **Adapt the WEx Engine for use in multiple on-campus sections of English 2367**
  
  - The WEx platform was harmonized with existing OSU technologies, including Carmen
  - The WEx platform was refined to accommodate student and instructor interactions from multiple sections of English 2367
  - The WEx platform was reviewed to ensure accessibility, compliance with FERPA and ADA, and other standards required of on-campus courses at OSU

  **Commentary:** The WEx peer-review server, analytics engine, and analytics dashboard were successfully adapted and configured for inter-section implementation in OSU courses in Spring 2014. Integration with Carmen (though time-consuming for support staff in ODEE and ASC) was seamless. WEx was reviewed and approved by ODS and ASC staff for accessibility and compliance. WEx was refined successfully to accommodate the multiple section pilot although we did encounter small challenges in implementation (likely due to programming “bugs”) that required us to fall back to Carmen as an alternative means of collecting and distributing student submissions for review. Unfortunately, submissions and reviews through Carmen did not generate analytics, compromising to some extent the data available to students and instructors for assessment.
• **Revise curricular and assessment elements of English 2367 to accommodate these new technologies**
  
  o Curricular elements were revised to align both delivery of content and instruction with the hybrid teaching environment
  
  o Assessment elements were also revised to ensure the emphasis on peer review and self-assessment as integral parts of the classroom pedagogy

**Commentary:** Perhaps the most labor-intensive element of the pilot project, developing and re-developing curriculum and assessment methods was an on-going concern and commitment for the project team. Although the course assets from the MOOC constituted the foundation of the hybrid curriculum, many additional assets were created to meet the curricular and assessment demands of 2367. In particular, the team focused considerable attention to creating forums in u.osu.edu as a means of extending class discussion and student engagement. Instructors focused evaluation on students’ peer review performances and their self-reflections, creating a modified portfolio assessment for the course that included a final course reflection and revised assignment.

• **Pilot three sections of the revised course**

  o The team of three instructors and one GAA support staff person worked collaboratively to create the curricular and assessments elements of the pilot
  
  o That same team assessed the content, instructional approaches, and uses of technologies at the close of the term

**Commentary:** As was the case with the MOOC on which the hybrid project was based, the collaborative work of course development proved a challenging yet rewarding experience for the team. Weekly one-and-a-half-hour planning meetings (August 27, 2013 through April 22, 2014) were fundamental to the success of the project, enabling team members to brainstorm, discuss, create, and revise all course assets, including course assignments and activities, library tutorials and quizzes, forum prompts, assessment rubrics, and video instructional materials.
• Arrange on-going support by ASC Tech
  
  o The WEx platform for on-campus course (WExOSU) was developed and continues to be refined (Summer 2014) to facilitate future expansion to additional sections of 2367 (Spring 2015) and additional courses (English 1110 and English 2269 in Autumn 2014).
  
  o A plan for routine maintenance and upgrades to WExMOOC has been composed.

Commentary: The WEx platform for the on-campus hybrid 2367 pilot functioned adequately during the term, with small glitches that required some “work-arounds” to ensure review of all student submissions. The difficulties encountered, however, have resulted in a decision to rewrite the code for WEx—a responsibility enthusiastically adopted by ASC Technology. Transferring to ASC the responsibility for development, maintenance, and upgrades of WEx will ensure its sustainability and growth.

• Pedagogically-related process goals
  
  o Selection, remediation, and creation of video assets to support instruction in the pilot were completed.
  
  o A standard procedure for instructors to propose revisions to the WEx platform has been developed.

Commentary: Although selecting, remediating, and creating video assets were the project tasks that most often fell behind projected planning deadlines, all elements of the course and all course assets were completed at least one to two weeks prior to implementation in the course. Achieving the second sub-goal, to implement a standard procedure for proposing revisions to WEx, was facilitated by ASC Technology, which implemented Pivotal Tracker as the means through which project owners can forward requests. Additionally, ASC created an expedited ticket system for reporting issues related to WEx. Both systems of communication worked well throughout the term and are sustainable means of communication between project lead administrators and ASC Technology staff.
• **Programmatic and departmental process goals**
  
  - This project has established strategic working relationships with and among the Digital Media Project, Digital First, ASC Tech, and ODEE through the collaborations required to achieve project objectives.
  - Communications to generate awareness of the project within the department and college were sent throughout the project.

  **Commentary:** At the outset of the pilot project, productive (although sometimes only periodic) working relationships existed among the Digital Media Project, Digital First, ASC Tech, ODEE, and the project team, largely because of the partnerships created through development of the MOOC. The weakest relationship at that time, however, was with ASC Tech, whose contributions to the MOOC consisted of videotaping and editing support. This hybrid project made the relationship between ASC Technology and the project team much more strategic—a relationship that is integral to the sustainability and growth of WEx both within and outside the department and college. With respect to communications, throughout the project, the team strived to generate awareness of the project—largely through conference presentations, university-sponsored colloquia, and communications to departmental and college administrators.

  **Goals partially achieved**

  • **Arrange on-going support by ASC Tech**
    
    - A Memorandum of Understanding has not yet been composed to document ASC Technology responsibility for maintaining and updating the WEx platform in subsequent iterations of 2367.

    **Commentary:** No MOU has yet been composed. However, ASC Technology has taken over responsibility for maintaining and updating WEx for both on-campus courses (WExOSU) and MOOC offerings (WExMOOC) and a lifecycle support statement (rather than an MOU) is currently under development. Redevelopment of WEx is currently underway and will be completed for hybrid, online, and MOOC platforms by mid-August 2014.
• **Pedagogically-related process goals**
  
  o Documentation and training materials for instructors to incorporate the WEx platform into their curricula are under development.

• **Programmatic and departmental process goals**

  o Materials and advertisements are under development with the goal of recruiting a limited number of GTAs/lecturers for AU 2014/Spring 2015.

Commentary: Development of documentation and training materials were of tertiary importance during delivery of the course. Some attention was devoted to conceiving and composing recruitment materials and is ongoing during Summer 2014, anticipating a Spring 2015 hybrid offering in 2367 of up to six sections. Recruitment and training of instructors to the hybrid instructional model will be integral to creating a sustainable program.

**Goals not achieved**

• All goals were achieved or partially achieved.

**Goals not actively pursued**

• All goals were actively pursued.
Project Implementation

Students affected by pilot
This pilot affected 59 participants, enrolled across two sections of English 2367.01 and one section of English 2367.01H.

Students were from all academic ranks (2% freshman, 56% sophomores, 32% juniors, and 10% seniors) but were primarily sophomores and juniors and were enrolled in numerous academic majors: Accounting, Arabic, art management, athletic training, biology, business, business administration, communication, computer science, criminology, economics, electrical engineering, engineering, English, Exploration, health and nutrition, international studies, microbiology, neuroscience, occupational therapy, physical therapy, physics, Psychology, respiratory therapy, Spanish, speech and hearing science, sport industry, and women’s gender & sexuality studies.

Anticipated number of students affected by new course design in 2014-15
We anticipate that three groups of students will benefit from this project in the next year:

- Up to 150 students in English 2367
- Up to 180 students in English 1110
- Up to (nnn) students in WExMOOC

Approximate time spent by department faculty and staff on the project

<table>
<thead>
<tr>
<th>TEAM MEMBER</th>
<th>HOURS</th>
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<tbody>
<tr>
<td>Kay Halasek</td>
<td>560</td>
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<tr>
<td>Chase Bollig</td>
<td>310</td>
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<td>Kaitlin Clinnin</td>
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<td>Jennifer Michaels</td>
<td>275</td>
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<tr>
<td>Corey Staten</td>
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<td>George Abraham</td>
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<tr>
<td>Mike Butsko</td>
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<td>Kurt Mueller</td>
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<td>Susan Delagrange</td>
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<td>Scott Lloyd DeWitt</td>
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<tr>
<td>Ben McCorkle</td>
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<td>Cynthia Selfe</td>
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**Approximate total cost (not including ODEE staff time)**

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<th>Resources</th>
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<td>Software (MovieCaptioner)</td>
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<td>Work-Study Student (Salaries)</td>
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**Project Implementation Process/Timeline**

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<th>Milestone/Deliverable</th>
<th>Target</th>
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<tr>
<td>WEx&lt;&gt;Carmen Information Flow Requirements Document Created</td>
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<td>@10/15/2013</td>
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<td>Corey's Contract Activated</td>
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<td>End Date</td>
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<td>------------------------------------------------------------</td>
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<td>----------</td>
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<td>Assignment Sequence &amp; Units Competed + Asset List</td>
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<td>9/17/2013</td>
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<td>WEx Single-course Requirements Achieved: Single Sign-on + Accessibility</td>
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<td>Video Outsourced</td>
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<td>12/2/2013</td>
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<td>WEx Test Run in DeWitt's Class</td>
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<td>Course Materials Complete and Uploaded (to Carmen)</td>
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Relation of Charter Timeline to Project Timeline

Generally speaking, the project met deadlines described in the timeline. Deviations from the planned schedule did not result in disruptions. The required technological and pedagogical revisions were completed at least one to two weeks prior to implementation in the course.

Development of Pedagogical Material

The elements of the Charter Timeline most often not fulfilled in a timely manner (within two weeks of the projected completion date) were those related to pedagogical matters (e.g., completion and uploading of materials for class sessions, production and editing of video assets, and updating of WEx Training Guide). The delays were a result of two factors: (1) significant training of work-study students needed to ensure creation of error-free transcriptions and closed-captioning of videos and (2) underestimation of the amount of time needed to conceive and develop additional assets for face-to-face and u.osu.edu discussion forum portions of the course (those assets in addition to MOOC assets). The timeline was developed with buffers to account for the possibility of these kinds of delays.
WEx Single-course Requirements Achieved: Single Sign-on + Accessibility

Single Sign-on and Accessibility requirements were the focus of develop during September and October 2014. Ken Petri reviewed and commented on matters of accessibility in September and WEx meet accessibility standards in its final iteration in December 2014. Single sign-on code was written in mid-October and then adjusted for the live system in mid-November.

Test Run of WEx in Multi-Course Situation (did not complete)

No test run of WEx across multiple sections of a single course was completed. No multiple section courses with viable assignments were available at the appointed timeframe at which a test run was needed to determine the functionality of the system. The single-course runs in Scott DeWitt’s and Jen Michaels’ classes provided sufficient data to determine that the system worked on a small scale. Some complications did arise as a result of the decision not to run the multi-course test, but none were insurmountable and contingencies in place (i.e., exchange of student submissions and peer reviews via Carmen and email) functioned appropriately.
Project Assessment

Outcome summary

SEI reports from the three sections suggest students were satisfied with their experiences, with the 2367.01 sections earning overall SEI scores of 4.43 and 4.45 (against a College average of 4.3) and the 2367.01H section earning a 4.86 (against a College average of 4.4).

In general, students reported that the multi-section aspects of the course and the educational technologies employed enhanced and positively impacted their experience and learning in the course. They also reported recognizing the value of both giving and receiving peer reviews with respect to their own development as writers.

Overview of Assessment Plan and Methods

In creating the assessment plan for the project, we identified three success goals and one process goal:

- Goal #1: Improve Student Learning and Writing
- Goal #2: Facilitate Student Investment in Peer- and Self-Assessments
- Goal #3: Improve Instructor Effectiveness
- Goal #4: Create Valid and Reliable Assessment Methods

To assess the achievement of these goals, we created a comprehensive assessment plan that included pre- and post-course survey, assessments of student performance in and analytics of writing and peer review scores over time, and final course student discursive evaluations and instructor SEIs (Student Evaluation of Instruction).

The assessment plan was supplemented during the course of the project to include a student mid-term reflection and end-of-term focus group. The mid-term reflection asked students to comment on the course and its impact on their learning: “Compose a 250-500 word reflection on how you have evolved as a writer in this course, or how your understanding of your cause has developed in response to your research. Comment on four of your peers’ posts.” All students were invited to participate in end-of-term focus groups. Three students participated in a one-hour focus group intended to collect their insights into various elements of the course, including peer review, technologies interfaces, course assignments and structure, and other matters raised by the students themselves.
Goal #1: Improve Student Learning and Writing

Students and instructors alike were asked to assess the degree to which individual students' writing performances improved over time. Measures included the following direct and indirect approaches:

- Student pre- and post-course surveys included questions regarding the students' personal perceptions of the improvements in their writing as well as affective measures of their confidence in, anxiety about, and comfort with writing. Of most interest were students agreement that
  - the multi-section aspects of the course enhanced their experience and learning in the course.
  - these materials enhanced their experience and learning.
  - WEx positively impacted their learning in the course.
  - WEx was well-integrated into the course and that course materials made effective use of WEx.
- Calculated change over time in the peer assessment ratings
- Changes in various analytics taken over the course of the term
- (Blind) instructor assessment of student writing across sections

Goal #2: Facilitate Student Investment in Peer- and Self-Assessments

Student investment in peer- and self-assessments was judged according to a set of criteria developed by the pedagogy working group and included the following:

- Student self-reporting about the value of peer reviews with respect to their own development as writers
- "Helpfulness" of peer reviews as judged by the writers whose work has been assessed
- Calculated change over time in the "helpfulness" scores of reviews
- (Blind) instructor assessment of quality of peer reviews across sections

Goal #3: Improve Instructor Effectiveness

Instructor effectiveness in this new hybrid environment in a pilot study was difficult to evaluate as no comparative data are available. Nonetheless, several mechanisms remain for collecting data on instructor effectiveness and performance

- Discursive student evaluations and SEI scores
- Instructor self-assessments and process logs
- External review and assessments by peers
Goal #4: Create Valid and Reliable Assessment Methods

Development and delivery of valid and reliable assessment methods via WEx are the single most important pedagogical element of the course and are dependent upon:

- Clear and detailed instruction in peer review
- Instructor "norming" of peer reviews with instructor assessments
- Student feedback on the process and outcome of the reviews

Highlights from Assessments

Focus group conversations highlighted a number of shared opinions reflected across a variety of assessment tools (i.e., mid-term reflection, final course discursive evaluations). Students reported:

- They learned a great deal from peer review, particularly from the process of peer-reviewing other students’ work. Peer review, over the course of the term, allowed them to assess elements of their own writing more productively after diagnosing others’ writings.
- Recognized the potential of WEx as an educational technology.
- Commented enthusiastically about the value of the Carmen Checklist as a weekly (and critically important) navigation tool.
- Held very positive impressions of the writing assignments themselves, noting that they were “some of the best writing assignments I’ve had in college.” In short, they very much liked the arc of exploring a specific cause throughout the term.
- Appreciated the wide range of genres in the course, including visual and online genres and the opportunity to integrate multimedia into later course assignments.
- Valued instructors’ approaches to the course, including instructor expertise, availability, and engagements with the classes online and face-to-face.

Details from Assessments

In summary, students reported that:

- The multi-section aspects of the course enhanced their experience and learning in the course.
- The course materials enhanced their experience and learning.
- WEx positively impacted their learning in the course.
- WEx was sometimes not well-integrated into the course; however, they were not asked directly whether course materials made effective use of WEx.

Quantitative measures demonstrate that...
• Students in sections 20632 and 20637 averaged a GPA of 3.4—the same average GPA among students in all other non-honors sections (n=23) of 2367 (.01-.05)
• Students in section 20470 averaged a GPA of 3.7—slightly lower than the average GPA (3.9) among students in all other honors sections (n=4) of 2367 (.01-.05).

The hybrid pedagogical model met with mixed responses from students. Overall, students appreciated the flexibility to work on their own schedule and the multiple means of engaging the instructor and other students. Those who expressed appreciation for the hybrid model, noted that the “course design allowed me to think and finish my writing on my own time. I didn’t feel rushed” or that “[h]aving the course . . . online forced us to become more independent and interact heavily with peers. Peer reviewing multiple times and reading the articles/watching the videos helped me become a much better reviewer, but also a much better writer.”

Some students expressed disappointment that they “did not know . . . peers at all because we either barely met or never met face to face.” They also expressed concern that peers did not respond reciprocally to their work. One student remarked on the learning challenges posed by online environments, noting, “I am the kind of student who learns better in face-to-face situations. . . . I found it difficult to succeed in this class for that exact reason.”

Students were generally receptive to the discussion forums (via u.osu.edu) as a productive means of engaging one another during the course, with one student noting (in a course evaluation) the value of connecting “with students from all of the classes,” considering their peers’ work, and being “able to see other peoples’ ideas, comments” in an “environment [that] was very academic & friendly.” Other students commented that the discussion posts provided means of testing out ideas and receiving informal feedback, that they “helped dramatically with my understanding of upcoming assignments” and that they were “the most helpful” of course assignments and activities because those posts gave students “the opportunity to converse & brainstorm without instructor input.” Although some students reported that online discussion-forum postings were “busy work,” they noted that the space “was effective for creating a discussion on the topic outside of class and I could learn about my peers” and complimented a few specific assignments, such as the annotated bibliography and did not begrudge the time/effort that such assignments took as long as they felt the assignments were beneficial to their learning process.

Still, students noted the u.osu.edu site was difficult to navigate and identified limitations to the discussion forums, describing them as “irritating to comment on” and “pointless” or that they “felt forced with little continuity.” As one student put it, “one of the best parts about a small class is the ability to hold discussions [; I] would have rather gone to class 2 days a week than have cut and dry blog posts.” The students generally shared a sentiment that they were required to complete too many discussion posts, which they perceived kept their posts from being as effective as they might have been. This observation from students leads us to reconceive some post prompts, eliminate others, or remediate still others into face-to-face classroom activities.
Students’ comments—aligned with the instructors’ sense of the forums as well—contributes, as well, to our recommendation that hybrid sections be taught on a MWF schedule, with two days meeting face-to-face and one day online/asynchronous.

Outside of its technological limitations (i.e., limited formatting of students’ submissions of alphabetic text and “bugs” that required significant “work around” through Carmen dropbox), WEx received high scores from students, who commented that they appreciated that WEx allowed them to “go back and check reviews & statistics whenever I wanted” and that “it showed averages of scores/reading levels, etc.” Students in their course evaluations did not frequently mention these analytics, but the few who did comment on them noted their value as learning tools. In short, students recognized the sound theory behind WEx and appreciated peer review as a useful tool that strengthened their writing, reading, and critical thinking skills—but they also noted that the technological issues were frustrating from a user perspective.

Students identified the Carmen site—and particularly its Checklist function—as integral to their ability to navigate the work assigned each week. This was particularly critical for student engagement and understanding as students noted “[i]t was really hard to stay on top of everything, especially at the beginning because we weren’t used to all the online forums and we didn’t get much explanation of them face-to-face.” Again, comments like these have encouraged us to revisit the class session model (Tuesday/Thursday or Monday/Wednesday/Friday) for teaching hybrid courses.

In their mid-term reflection posts to the course discussion forum, in their anonymous discursive course evaluations, and during the end-of-term focus groups, students identified that the primary strength of the course was its focus on peer review.

Many students wrote that peer reviews helped them become better writers and more thoughtful readers. Conversely, they also expressed some disappointment with their peers’ reviews of their own writing. They pointed to isolated peer reviews that were helpful, but they also noted that much of the feedback was “stuff I already knew” or “not very thoughtful feedback.” These responses are not, however, contradictory to one another as students in general simply valued their own processes of peer review more than they did the reviews they received. In particular, responding to specific criteria made them more attentive to assignment requirements and encouraged them to read beyond grammatical errors. They also reported that reviewing others’ writing through the peer reflection process and then receiving feedback enabled them to evaluate new perspectives on writing, reflect on their rhetorical goals in the first drafts of assignments, and more effectively revise based on their goals and reviewer feedback. At the same time, some students expressed concern about the workload created by the extensive peer review component of the course, noting that the focus on peer review detracted from developing their writing or research skills. Some reported taking up to two hours to complete a single peer review, which certainly demonstrates their commitment to the process but also suggests that, in future offerings, instructors allow for longer periods of time for students to
complete peer review. Students also reported that they would have appreciated more instructor feedback on their assignments, although they were careful to say that they don’t want that in place of their peer feedback.

The theme and content of the course—with its focus on examining, researching, and writing about a single social cause of personal interest, importance, or related to their major courses of study—was well received by most students who recognized the value of engaging the various processes of learning and writing required by various audiences and genres. As one student put it, “the brainstorming we did before the assignments all the way through the reflections really made the writing process complete. We were continually making comments on others [sic] pieces, giving suggestions, and reflecting on what we could do to make our work better.”
Experience of Teaching with Learning Technology

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

1. The use of technology improved student learning in my course.
   
   **Strongly Agree**

2. The use of instructional technology improved my teaching.
   
   **Agree**

3. My students had the technology skills needed to succeed in my courses.
   
   **Agree**

4. My students had adequate access to hardware and software.
   
   **Strongly Agree**

5. There was adequate network access for all on-campus activities.
   
   **Strongly Agree**

6. I spent too much class time teaching technology to my students.
   
   **Disagree**

7. Additional comments or feedback
   
   **N/A**

Effect of Learning Technologies on Instruction
The technology enabled the course instructors to flip the classroom, so students watched videos and completed online activities prior to the weekly face-to-face class meeting. This flipped setup meant that in-class time could be spent building upon and complicating the online content.

The WEx peer review system allowed instructors to easily track student writing over the course of the semester. Instructors could pull up all students’ writing (assignment submissions, peer
reviews given, peer reviews received, and reflections), which allowed for instructors to provide more individual feedback to students about their progress and various writings in the course. This “just-in-time” teaching provided students with individualized instruction. However, the technology also caused a proliferation of items for instructors to respond to. Instead of in-class discussion, multiple discussion forums were used each week to foster conversation about the class material. This required instructors to be judicious in their response approach, namely what instructors should respond to, how often they should respond, and how they should respond to individuals or the entire group.

Ultimately the technology led to a shift in the classroom relationships. It was a different affective experience to teach a class when only meeting face-to-face once a week. The hybrid model required different ways to relate to students and build a rapport.

**Effect of Learning Technologies on Learning Outcomes**

The WEX peer review distribution system was very successful despite some bugs. The majority of students in discursive feedback in in-class conversations talked about the value of these peer reviews on how they worked as writers.

In particular, the seamless distribution of anonymous reviews allowed students to quickly review their peers’ work with a level of honesty that is not available in face-to-face peer reviews. While this sometimes created the need for conversations about how to respond to others’ work diplomatically (a conversation that we have with any peer review activity), the use of WEx to comment also created an opportunity to talk about anonymity in online writing environments. The distribution of peer reviews back to the authors allowed students to take as much time as they needed to reflect on their feedback.

Along with peer feedback, students received analytics that included Flesch-Kincaid readability scores and comparisons with the class. While many students had difficulty responding to these analytics, some students were able to insightfully connect their readability scores to questions of genre and audience, and to note where content-based writing problems (e.g. a lack of research and analysis) were reflected in the analytics generated for that assignment.

The use of the u.osu.edu forums facilitated the assignment and assessment of writing process documents that include brainstorms, researched summaries, and reflections on writing and research processes. The threaded comment function created a space where the students themselves could engage with each other about these writing processes. In terms of limits, the participation on the u.osu forums was not representative of the energy students brought to face-to-face sessions. While the students resoundingly appreciated the energy, tenor, and depth of in-class conversations, many students described as “busy work” the experience of posting short reflections or analytical assignments and comments (meant to reproduce the effect of class discussion). This characterization speaks to a fundamental challenge of asynchronous online pedagogies: how to encourage students to participate as part of a social organization rather than atomistically. One of the limitations of this learning technology is that the students had no
social incentive to extend the conversation, for example, by being “tagged” in someone else’s post.

Best examples of effect of technology on teaching

Both u.osu.edu (discussion forums) and WEx, The Writers Exchange, enabled cross-section engagement among students—a function that students and instructors alike valued highly. Carmen (particularly the Checklist function) also provided students an easily navigable platform from which to engage course materials.

Other particular elements of WEx such as the “Reflection” and “Helpfulness” functions that asked students to reflect on the peer reviews they received, create a revision plan, and assess the quality of their peers’ reviews provided students significant opportunities for learning.

The experience of one student demonstrates the potential of WEx for student learning. This student, “Christa,” received a comment from an anonymous peer that the prose in one of her assignments was “distractingly pretentious.” Certainly, the tone of the comment was somewhat problematic, but rather than respond defensively or dismiss the comment, Christa reviewed her other peer reviews (which noted some difficulty in navigating her essay) and saw her way to the WEx Analytics Dashboard, which showed in the same piece of writing that her prose style (relative to those of the other students submitting the assignment) scored much higher on the Flesch-Kinkaid reading scale and reading grade level (relative to those of the other students submitting the assignment)—suggesting, as Christa herself noted in her Reflection, that her prose perhaps was too formal for the audience, purpose, and genre for the assignment she’d composed. In other words, the analytics and collective peer reviews led her to a meaningful conclusion about her draft and a concrete plan for revision of sentence-level matters.

Challenges

Several bugs related to the WEx system limited its impact, the most significant of which was uneven distribution of peer feedback to students, which meant that, although all students completed the minimum required peer reviews, some students received no peer feedback. Students also struggled with the lack of rich text formatting in WEx, which frequently eliminated line breaks. The result was that students received less effective peer reviews, and some students even reported writing in “one big block of text” as they composed. This undermines writing pedagogy about structure, organization, and analytical composing and reading. Student writing on the u.osu.edu forums, which often included socially-oriented process writing tasks, did not reflect the energy or depth of in-class conversations.

Assessment of Assessment Plan

A good deal of the assessment of student writing performances from the pilot project are ongoing as project personnel work with the WEx database and Qualtrics. The outline below accounts for the process of the various assessments within each identified goal for the project.
We are well satisfied with students’ assessments of the course and the means by which we collected the data (initial and end-of-term surveys, mid-term reflection, focus group, discursive course evaluations, SEIs). Assessment of student performances over time and the alignment of peer assessments of student writing with instructor assessments of that same student writing is, however, on-going, with no quantitative data available for analysis at present.

**Goal #1: Improve Student Learning and Writing**

Students and instructors alike will be asked to assess the degree to which individual students’ writing performances improved over time.

**Completed:**

- Student pre- and post-course surveys that includes questions regarding the students’ personal perceptions of the improvements in their writing as well as affective measures of their confidence in, anxiety about, and comfort with writing
- Comparison of class average final grades against non-hybrid sections of 2367

**Underway:**

- Calculated change over time in the peer assessment ratings
- Improvements in various analytics taken over the course of the term

**Planned but not yet undertaken:**

- (Blind) instructor assessment of student writing across sections

**General Findings:**

The assessments undertaken confirmed instructors’ impressions of students’ experiences in the course. Specifically, pre- and post-course surveys gave students’ the opportunity to relate personal perceptions about their own performance, the course, and instructor performance. Additional assessments underway or planned (e.g., change over time of peer assessment ratings, improvements in discourse analytics over the course of the term, and blind instructor assessment of student writing across section) will provide detailed understanding of student performance. Until those assessments are completed, interpretation of data and research findings are incomplete.
Goal #2: Facilitate Student Investment in Peer- and Self-Assessments

Student investment in peer- and self-assessments will be judged according to a set of criteria developed by the pedagogy working group and will include the following:

Completed:

- "Helpfulness" of peer reviews as judged by the writers whose work has been assessed
- Student self-reporting about the value of peer reviews with respect to their own development as writers

Underway:

- Calculated change over time in the "helpfulness" scores of reviews

Planned but not yet undertaken:

- (Blind) instructor assessment of quality of peer reviews across sections

Findings:

- Students reported that peer review activities enhanced their own learning and writing experiences

Goal #3: Improve Instructor Effectiveness

Instructor effectiveness in this new hybrid environment in a pilot study will be difficult to evaluate as no comparative data are available. Nonetheless, several mechanisms remain for collecting data on instructor effectiveness and performance

Completed:

- Discursive student evaluations and SEI scores
- Instructor self-assessments and process logs
- External review and assessments by peers

Findings:

- Instructors reported and evaluations suggest highly effective teaching and learning in the hybrid project courses.
Goal #4: Create Valid and Reliable Assessment Methods

Development and delivery of valid and reliable assessment methods via WEx are the single most important pedagogical element of the course and are dependent upon

- Clear and detailed instruction in peer review
- Instructor "norming" of peer reviews with instructor assessments

Completed:

- Clear and detailed instruction in peer review

Planned but not yet undertaken:

- Instructor "norming" of peer reviews with instructor assessments

Experience of Tech-enhanced Teaching

On the whole, tech-enhanced teaching strategies represent a useful complement to face-to-face pedagogies, but that technology does not substitute for the value of face-to-face class discussions. For matters of disseminating information—sharing readings, simple reading responses—and for the management and distribution of files—the automated, anonymous peer feedback—tech-enhanced strategies represent a significant convenience. Such teaching strategies also present students and the instructor with opportunities for conversations about ethical and effective writing in digital environments, as well as discussions about time-management and organizational skills required for tech-intensive work environments. While the pre-recording of lecture information and “flipped” classroom strategies offer students the chance to work through materials at their own pace, and to re-encounter these texts until they have achieved understanding, the tasks required to follow up on these online materials (quizzes, short writing assignments) sometimes detracted from students’ learning experience (“busy work”).

Moving Forward

We plan to streamline the course in the future.

Based on student evaluations and focus group feedback, there was a consistent sense that students learned the most from providing peer reviews on the assignments, and we plan to continue this emphasis on peer review. We will provide additional opportunities for students to engage in dialogue with their peer reviewers. We intend to create a space for students to provide discursive rationale for the helpfulness scores they assigned as well as a mechanism for students to read the reflections of those individuals for whom they completed peer reviews so that reviewers will be able to see how their reviews have been received and acted upon.
We also will be more selective in the online videos and activities. Students felt that some of the videos and activities were not well incorporated into the class or felt too much like busy work. In the next iteration of the course, we will be moving to a MWF schedule with two face-to-face classes, so we will move some of the more complicated activities into the physical class time and have more time to discuss the online work in class.

In Spring 2015, the Second-year Writing Program will again offer up to six sections of hybrid English 2367. Offerings will be determined in large part by availability and interest of instructors to participate. In that upcoming offering, we anticipate a number of revisions and innovations:

- A revised course schedule to MWF, allowing instructors to teach face-to-face two days per week and online and asynchronously one day per week
- A retooled WEx platform created for on-campus hybrid and fully online sections of English 1110 and 2367, including enhanced instructor and student dashboards and data access
- Development of The Instructor’s Guide to WEx, which will provide training and support for instructors teaching using WEx in and outside of English 110 and 2367
- Further collaborative development and refinement of curriculum in English 2367
- Continued analysis of data collected
Impact Grant Experience

Survey
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.
   - Agree

2. I am satisfied with the grant project contributions I received from the ODEE staff.
   - Agree

3. I have learned the skills necessary to continue related work on my own.
   - Agree

4. I found the ODEE staff approachable.
   - Agree

5. The lessons learned during this pilot will guide future course design.
   - Strongly Agree

6. Additional comments or feedback
   - n/a

Reflections on the grant process—what went well
Generally speaking the grant process provided the project team ample opportunity to work collaboratively with ODEE to create a successful research and pedagogical experience. In particular, the development of the Charter (despite its cumbersome nature from time to time) allowed for a forward-thinking approach to project development. ODEE staff were available as needed and responsive to team requests.

Reflections on the grant process—what did not go well
In short, unexpected requests from ODEE during the course of the project sometimes took the team’s attention away from development or implementation. Once in the midst of planning and development (after receipt of the grant), the team focused its full time
and attention to the project, and unexpected requests for information or action from ODEE divided that energy to matters that seemed tangential to the primary work at hand. A clearer and more structured statement of on-going team obligations to ODEE would be much appreciated.

**Key lessons learned**

The key lessons learned for our project team revolved largely around two matters:

- The importance of collaboration in developing both pedagogical and technological elements of the project. Also a lesson learned in our previous MOOC project, we were reminded time and again about the importance of collaboration as we developed and implemented this project. Not simply a matter of sharing the workload, collaboration was at the heart of our research and pedagogical approaches and extended well beyond the team in English to include ASC technology staff, who were instrumental in the project. 
- The importance of flexible planning. The Charter and initial plans for the project were that . . . plans. As we developed and refined the course and project as a whole, flexibility of thought and plans were critical to the success of the project.

**Suggestions for future recipients**

- Plan and plan early
- Contingency plans may seem superfluous, but they are critical elements
- Identify clearly the expected obligations (both time and type of contributions) for each member of the project team
- Secure departmental or unit support for the project, especially in terms of human resources available for project development and implementation
- Keep your department chair, department colleagues, and dean informed about the project and your research

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

1. Responsive
2. Attentive
3. Engaged

**Ah-ha moment of the grant process**

Perhaps the single most visible “ah-ha” moment in our grant process was the realization of the value of contingency planning.
At the outset, we had a firm plan in mind for instructional staffing. Two graduate students and one faculty member had “signed on” to teach the three sections of English 2367 in Spring 2014. All three were fully involved in developing the MOOC on which the hybrid project was based and had worked together for over a year with WEx and other technologies used in the hybrid project.

Then, in late Autumn 2013, one of the graduate students had to withdraw from teaching in Spring 2014, necessitating the recruitment of another graduate student to take on the assignment. Because we had created a contingency plan for such a substitution, the transition to the new instructor was smooth.

Certainly, this is simply one example of contingency planning—but it emphasizes its single greatest value: It makes unexpected change routine.
14 July 2014

ODEE Grants Program
Attn: Henry Griffy, Grants Coordinator
230A Mount Hall
1050 Carmack Rd.

Dear Henry and Colleagues,

“Transformative Writing Technologies: Improving Student Writing in English 2367 through Technology-Enhanced Instructional (Re)Design” stands as the first venture into hybrid online learning undertaken by the Department of English on the Columbus campus of Ohio State University. And what a successful venture it’s been! Thanks to the generous funding and support of the Office of Distance Education and eLearning and the support of the College of Arts & Humanities and Office of Arts and Sciences Technology, the project has made significant strides toward enhancing and innovating writing instruction in our department.

By all measures—not the least of which are student satisfaction with the course and their performance in it—the project was a success. With its goal of revising, enhancing, and extending both the delivery and content of English 2367, the project refined WEx, The Writers Exchange, to facilitate peer-based learning across sections of English 2367 and thereby encourage students toward deeper and more meaningful self-reflection on their own writing.

As a faculty member in English, I read with great interest descriptions of the diverse approaches to student engagement in the pilot, including WEx and the u.osu.e du blog site for hosting discussion forums. As department chair, I find particularly compelling the potential of WEx as a platform and tool for the programmatic assessment of student learning and writing across our GEC courses and undergraduate major and minor programs. The project has paved the way for extending both the pedagogical and assessment innovations to other courses in our department—and perhaps the college.

The department remains supportive of this and related projects exploring online educational opportunities for the students in our courses. In fact, the English 1110 online pilot funded and supported by the College of Arts and Humanities and Department of English will make
substantive use of WEx, The Writers Exchange—demonstrating again the value of the work made possible by the ODEE Impact Grant.

I look forward to the coming year and the innovative work of our faculty as they continue to investigate the possibilities of extending and improving student learning in our GEC writing courses.

Sincerely yours,

Debra A. Moddelmog
Professor and Chair

Cc: Mike Hofherr, Vice President and CIO
Mark Shanda, Dean, Arts and Humanities
Goals and objectives pre and post relation/connection

The overarching goal of this project was to introduce technology and course design developed for a MOOC to courses for on-campus OSU students. This goal was achieved, and this project serves as another powerful demonstration that open courses can serve as an effective testing ground for technologies that can then benefit OSU students. The improvements made with support of this impact grant will also benefit students in future iterations of the MOOC.

The curricular objectives were likewise achieved. The team successfully designed, built, and delivered three sections of 2367. The larger impact of this work -- the achievement of the institutional goals -- is less clear at the moment, but early indications are positive. The successful delivery and close alignment of the three sections demonstrates that this is a realistic model for other 2367 sections and illustrates that this technology can contribute to such alignments. The use of the WEx engine in the online sections of English 1110 likewise demonstrates that the pedagogical model piloted in this grant project has wider application and may reform a wider array of courses. Second-writing instructors in other disciplines have inquired when WEx will be available for their use.

Number and roles of ODEE individuals involved in the grant project

4 ODEE staff played significant roles in this project.

- Henry Griffy, Grants Coordinator, was project lead for ODEE.
- Vedu Hariths, Learning Systems, provided infrastructural support for integrating WEx with Carmen.
- Valerie Rake, Learning Systems, provided end-user support for integrating WEx with Carmen.
- Steve Lieb, Digital First, provided support for adapting and using u.osu.edu.

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

<table>
<thead>
<tr>
<th>TEAM MEMBER</th>
<th>HOURS</th>
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<tbody>
<tr>
<td>Henry Griffy</td>
<td>79</td>
</tr>
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</table>
Reflection of what aspects of the grant process, procedures, and collaboration worked at or above expectations.

Collaborations across ODEE went very well. Questions about Carmen were answered quickly, which enabled the team's developer to integrate WEx without disruptions. The technology did not distract from the teaching. Likewise, Steve was able to mediate the team's requests for improved discussion functionality in u.osu.edu with the vendor to implement changes and updates with rapid turnaround.

The team cohesion and work ethic are impressive. Kay Halasek has gathered a large and close-knit group of instructors interested in developing technology-enhanced writing courses. The team's history of collaboration and shared goals result in effective and consistent work toward a larger goal.

Reflection of what aspects of the grant process, procedures, and collaboration were below expectations.

We discovered late in the project that the style of coding used to build WEx was inconsistent with Arts and Sciences preferences, resulting in extensive revision of the codebase for future deployment. We coordinated early meetings among ASCTech, ODEE, and the English department team, but plans for follow-up and ongoing communication were not followed through, resulting in additional work to ensure the long-term continuity of WEx.

Communication between the English department and Grants team might have been more consistently open. We were able to track and complete the important milestones of the project, but opportunities for more involved collaboration may have been missed. I feel like years of experience teaching English composition were not fully mobilized. Some reduced communication was driven by concern for student privacy. Concerns about intellectual property also prevented some open communication.
Three words to describe working with the recipients.

1. Close-knit
2. Productive
3. Committed

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

Early in the project, I convened a meeting among representatives of the English department team, ODEE's programming team, ASC Technology's programming team, and the programmer contracted to make the changes to the WEx server. The ensuing conversation clarified the pedagogical vision of the project with a precision that previous conversations had not. The precision forced by the need to program the system provided detailed insight into the assumptions and vision of the team.

Changes to our processes from this grant experience

This project reinforces the ongoing effort to identify and build on collaborations with other areas in ODEE, especially those relating to open courses and distance education.

We were already more proactive in continuity planning for this project than some earlier grants. We reached out to ASC Tech soon after the grant was awarded and coordinated meetings early and late in the process. Even more planning and coordination could have been helpful. We will revise processes to increase collaboration with local support staff even more intensively in future rounds, especially when the project involves locally supported technology.