This project developed dynamic interactive learning materials to enhance the teaching and learning experience in an existing online course, ESEPSY 1259: Individual Learning and Motivation Strategies for Success in College, offered through the Dennis Learning Center. These materials incorporate contemporary learning technologies and integrate authentic learning and collaborative learning strategies aiming to promote students' motivation for learning in online classes. The learning modules and the process of developing them provided a best-practices template for remaking the remaining modules of this and similar courses.
Executive Summary

Goals
The driving goal of this project is to design and develop instructional strategies and learning technology interventions to support students' motivation and promote their engagement in ESEPSY1259: Learning and Motivation Strategies for Success in College.

Outcomes
The project goal was achieved through the revision of course materials, development of eLearning tools, and implementation of research. The results showed significant impact of the design and development on students’ motivation and their use of learning strategies.

Process Analysis
The grant process brought together a variety of perspectives and areas of expertise to collaborate and achieve the proposed goals and objectives. We were particularly pleased with the visual elements and multimedia production made possible through the sharing of resources and staff talent. Through working together, we were able to build new opportunities, be at the forefront of new Carmen template design, and ensure new course materials met standards for accessibility and copyright. The Learning Systems team generously established research access to the analytic data generated by the Carmen system; however, the difficulties of that dataset, exacerbated by necessary privacy restrictions, prevented effective interpretation.

What We Learned, in a Sentence
Project planning and implementation are iterative and complex processes; therefore, it is imperative that organization and communication are constant components of the process.

5 Talking Points
1. This project was a truly collaborative effort that strengthened the connections among Educational Technology, the Dennis Learning Center, and ODEE.
2. Design work was rooted in motivational theory and provided support for students’ interest, value, autonomy, competence, and relatedness.
3. The team developed four multi-faceted assignments that integrated engaging instructional materials with authentic and collaborative learning activities.
4. The project was at forefront of new Carmen template design, and the design elements will continue to be carried forth in the multi-section ES EPSY 1259 course, reaching nearly 1,000 students annually.
5. Students in the pilot sections increased their levels of motivation and use of effective learning strategies.
Project Committee

Educational Technology

Lead

• **Kui Xie** <xie.359@osu.edu>, Associate Professor in Educational Technology, Department of Educational Studies

Team

• **Lauren Hensley** <hensley.121@osu.edu>, Associate Director, Dennis Learning Center, College of Education and Human Ecology
• **Lynn Trinko** <trinko.1@osu.edu>, Director of Educational Technology, College of Education and Human Ecology

Office of Distance Education and eLearning (ODEE)

ODEE Project Lead

• **Henry Griffy** <griffy.2@osu.edu>, Grants Coordinator, ODEE Digital Scholarship

ODEE Constituents

• **Marcia Ham** <ham.73@osu.edu>, Senior Instructional Designer, ODEE Digital Scholarship and Development
• **John Muir** <muir.25@osu.edu>, Instructional Designer, ODEE Digital Scholarship and Development
• **Ben Scragg** <scragg.3@osu.edu>, Instructional Designer, ODEE Digital Scholarship and Development
• **Robert Griffiths** <griffiths.44@osu.edu>, Director, ODEE Digital Scholarship and Development
Project Goals and Objectives

Overview

The driving goal of the project was to design and develop instructional strategies and learning technology interventions to support students' motivation and promote their engagement in ESEPSY1259: Learning and Motivation Strategies for Success in College. The project concentrated on revising the note-taking module of the course in order to enable more thorough design and to research effectiveness. This general goal was achieved through three major objectives related to the revision of course materials, development of eLearning tools, and implementation of research. Each objective is addressed below.

Goals achieved

All goals and objectives were achieved with the exception of some sub-objectives, detailed below.

• **Objective 1: Revise Course Learning Materials for the Module on Note-taking**
  
  o Design and develop learning materials, instructional strategies, and course artifacts for the note-taking module that will heighten motivation and engage students
  
  o These materials will be the equivalent of three class "sessions." Collectively, these "sessions" will include roughly an hour of reading, an hour of learning material, and seven hours of individual or group activity. These learning materials will be built around the following activities:
    
    ▪ *We thoroughly addressed all but one of the components of our first objective through an extensive revision of our course learning materials. We created engaging video lectures and images that demonstrated how to put note-taking strategies into practice. The topics covered were: (a) using abbreviations and (b) note-taking techniques (traditional outline, informal outline, Cornell method, mind map, analog note-taking tools, and digital note-taking tools). We also developed authentic learning activities that made direct connections to students’ coursework, encouraged collaboration and the exchange of ideas among peers, and emphasized student reflections on why and when to use different note-taking strategies. These learning activities included: (a) Abbreviations exercise and self-reflection (three-part assignment), (b) Note-Taking Strategies discussion, (c) Practicing Note -Taking Strategies project (two-part assignment), and (d) Evaluating Your Note Taking (two-part assignment). The materials were so comprehensive that we extended them to be the equivalent of four rather than three class sessions.*
• **Objective 2: eLearning Tools and Dashboard**  
  o Select, configure, and implement tools for the note-taking module and integrate the tools in the Carmen LMS as a centralized system  
    ▪ *We thoroughly analyzed the resources and tools available at OSU and integrated them into all of the class activities. Since students could access all course materials and complete course activities using OSU resources, it was not necessary to build a distinct dashboard to coordinate student use of them.*

• **Objective 3: Research Assessment Measures**  
  o Design, develop, and implement assessment measures to answer notable research questions related to students’ motivation, and ascertain success of project as perceived and experienced by students  
    ▪ *We collected data from multiple sources and performed statistical analysis on them. We are able to identify some significant impacts of this project on students’ motivation and learning. These measures will serve to assess ongoing course revision and can be used to measure the effectiveness of other courses’ materials.*

• **Process Goal 1: Reusability**  
  o Build course components so that they’re maximally reusable/adaptable in other contexts, such as ODEE distance education courses.  
    ▪ *A number of the course components allow easy reuse. These materials include images and videos that demonstrate effective note taking. Digital photographs cover transcription (what not to do), traditional outlining, informal outlining, mid mapping, analog note taking, and digital note taking. Narrated video tutorials cover using abbreviations, outlining, and using the Cornell method.*  
    ▪ *In addition, work done to organize the structure of the course and its look and feel have been standardized, revised, and packaged by the ODEE Distance Education team as a "Carmen Template for Online Courses," which is already being used as the basis for 10 online general education courses, as well as many others.*

• **Process Goal 2: Process Sustainability**  
  o Build a team and set up working procedures and documentation that can continue this work in the future, especially in the enhancement of the remaining modules of ESEPSY1259  
    ▪ *We have developed a strong team available for consultation and development in the future. Lauren Hensley will work with the Dennis Learning Center director and instructors to enhance the remaining modules and partner with other units as needed. The ODEE team will provide assistance with the use of Carmen templates. The EHE*
Goals partially achieved

- **Objective 1: Revise Course Learning Materials for the Module on Note-taking**
  - **Open Badges for Note-Taking Achievement**
    - We were unable to locate a technology resource person with the time and expertise to develop a system of open badges. We did, however, implement alternative methods of encouraging motivation with structurally similar course elements. First, we allowed students to vote on their favorite abbreviations in the abbreviations glossary activity. Second, we created a closing message at the end of the module that summarized students’ learning outcomes and accomplishments.

- **Objective 2: eLearning Tools and Dashboard**
  - **Design and prototype an integrated interface for the note-taking activities**
    - Due to the limited access to Carmen database and needed programming expertise, we were not able to build a dashboard for the note-taking module as originally envisioned. However, existing Carmen elements provide students with unified access to multiple tools.

- **Objective 3: Research Assessment Measures**
  - **Identify potential relationships among these three sources of evidence**
    - We collected data about students’ motivation and students’ achievement and analyzed the relationship between these two sources. We were not able to analyze relationships between these two sources and data drawn from learning analytics, because we were not able to derive meaningful data from the Carmen databases, as described below.

Goals not achieved

- **Objective 3: Research Assessment Measures**
  - **Define and refine five analytical measures (e.g., learning analytics in Carmen)**
    - In collaboration with the ODEE Learning Systems team, we were able to design and implement researcher access to a shadow copy of Carmen databases. However, the complexity of those databases and the limited documentation of them prevented researchers from deriving meaningful data from the tables. Some precautions required to guard student privacy also hampered efforts to gather meaningful data.
Goals not actively pursued

• All goals were actively pursued.
Project Implementation

**Students affected by pilot**
177 students, enrolled in six online sections, participated in the pilot in spring 2014.

**Anticipated number of students affected by new course design in 2014-15**
600. The materials will continue to be incorporated in the online course design of ES EPSY 1259 and will impact an additional 300 students per year.

**Approximate time spent by department faculty and staff on the project**

<table>
<thead>
<tr>
<th>TEAM MEMBER</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kui Xie</td>
<td>160</td>
</tr>
<tr>
<td>Lauren Hensley</td>
<td>180</td>
</tr>
<tr>
<td>Lynn Trinko</td>
<td>31</td>
</tr>
<tr>
<td>Christopher Wolters</td>
<td>12</td>
</tr>
<tr>
<td>EHE Educational Technology</td>
<td>33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>416</strong></td>
</tr>
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</table>

**Approximate total cost (not including ODEE staff time)**

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Worker salary</td>
<td>4,000</td>
</tr>
<tr>
<td>Software</td>
<td>1,000</td>
</tr>
<tr>
<td>Faculty off-duty pay</td>
<td>8,000</td>
</tr>
<tr>
<td>Travel</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$15,000</strong></td>
</tr>
</tbody>
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# Project Implementation Process/Timeline

<table>
<thead>
<tr>
<th><strong>MILESTONE/DELIVERABLE</strong></th>
<th><strong>TARGET</strong></th>
<th><strong>ACTUAL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Charter submitted</td>
<td>8/1/2013</td>
<td>8/1/2013</td>
</tr>
<tr>
<td>ADDIE Analysis Meeting</td>
<td>8/8/2013</td>
<td>8/8/2013</td>
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<tr>
<td>Content Videos Chosen</td>
<td>8/15/2013</td>
<td>8/15/2013</td>
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<tr>
<td>Document of Understanding with Carmen Team about Analytics</td>
<td>8/22/2013</td>
<td>incomplete</td>
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<tr>
<td>Exempt IRB Submitted (for Fall baseline data)</td>
<td>8/30/2013</td>
<td>8/30/2013</td>
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<tr>
<td>Qualtric Surveys + Grade-gathering Plan Completed</td>
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<td>9/6/2013</td>
</tr>
<tr>
<td>ADDIE Design Completed (activities, instructions, rubrics)</td>
<td>9/26/2013</td>
<td>9/26/2013</td>
</tr>
<tr>
<td>Inventory of Tech Tools Required for Project (including badges)</td>
<td>9/27/2013</td>
<td>9/27/2013</td>
</tr>
<tr>
<td>Pre-Module Survey (baseline data)</td>
<td>10/2/2013</td>
<td>10/2/2013</td>
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<tr>
<td>Unrevised Module #6 presented to students (Fall)</td>
<td>9/26 - 10/12/2013</td>
<td>9/26 - 10/12/2013</td>
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<tr>
<td>Dashboard Designed</td>
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<td>incomplete</td>
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<tr>
<td>Post-Module Survey (baseline data)</td>
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<td>Dashboard built</td>
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<td>Pilot of Module Built</td>
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<td>ADDIE Content Developed</td>
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<tr>
<td>IRB Submitted (ODEE)</td>
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<td>11/22/2013</td>
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<tr>
<td>Module Tested/Previewed</td>
<td>12/6/2013</td>
<td>12/6/2013</td>
</tr>
<tr>
<td>Module Uploaded in final form</td>
<td>12/16/2013</td>
<td>12/16/2013</td>
</tr>
<tr>
<td><strong>FIRST DAY OF CLASSES</strong></td>
<td></td>
<td>1/6/2014</td>
</tr>
</tbody>
</table>
Instructors trained on new module 1/10/2014 1/10/2014
Pre-module Survey (treatment data) 2/11/2014 2/11/2014
Post-module survey (treatment data) 2/27/2014 2/27/2014
Analytics Dimensions Identified 3/31/2014 incomplete
Determination of feasibility of gathering analytic data 4/7/2014 incomplete
Analytic data gathered and/or progress report written 5/1/2014 Partially completed

LAST DAY OF CLASSES 4/21/2014 4/21/2014

<table>
<thead>
<tr>
<th>PHASE-OUT MILESTONES</th>
<th>TARGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Report Due</td>
<td>7/31/2014</td>
</tr>
<tr>
<td>Phase-out agreement</td>
<td>7/31/2014</td>
</tr>
<tr>
<td>Support/development plan by department and local IT</td>
<td>7/31/2014</td>
</tr>
<tr>
<td>Prepare at least one conference proposal</td>
<td>10/31/2014</td>
</tr>
<tr>
<td>Draft Journal article</td>
<td>10/31/2014</td>
</tr>
</tbody>
</table>

**Relation of Charter Timeline to Project Timeline**

We successfully completed all tasks on time in this project, except the analytics pieces. In collaboration with the ODEE Learning Systems team, we were able to design and implement researcher access to a shadow copy of Carmen databases. However, the complexity of those databases and the limited documentation of them prevented researchers from deriving meaningful data from the tables. Some precautions required to guard student privacy also hampered efforts to gather meaningful data.
Project Assessment

Outcome summary
Reactions to the new note-taking module were quite positive from both students and instructors. Highlights of the assessment emphasized several features of the new design:

- The new materials were interesting, well explained, and well structured.
- The assignments were sequenced in a logical, progressive manner.
- The use of visual examples (e.g., photos of note-taking formats) and demonstration videos (e.g., how to utilize the Cornell method) were particularly helpful.
- Structuring the module within a single location (the Content section) helped provide a streamlined experience.

Overview of Assessment Plan and Methods
The assessment plan included the following aspects:

- Beta testing and formative usability feedback (summer 2013)
- Pre-test survey completed before the note-taking module (mid-autumn 2013 and mid-spring 2014)
- Post-test survey completed after the note-taking module (mid-autumn 2013 and mid-spring 2014)
- Summative feedback of new module shared by instructors in group meeting (late spring 2014)
- Course evaluation completed by students (late spring 2014)

The assessment include the following measures:

- **Motivation** was measured by Intrinsic Motivation Inventory (IMI), which is a multidimensional measurement tool intended to assess participants’ subjective experience related to a target activity (http://www.psych.rochester.edu/SDT/measures/IMI_description.php). The revised IMI measured five variables related to students’ intrinsic motivation including (1) eight questions measuring enjoyment, (2) seven questions measuring perceived value, (3) eight questions measuring feelings of autonomy, (4) six questions measuring feelings of competence and (5) eight questions measuring feelings of relatedness to student peers in class activities.

- **Student experience of the Note-Taking Strategies** was measured by Likert-style items created for this study including (1) nine questions measuring strategies of taking notes, and (2) nine questions measuring strategies of learning from notes.
• **Students' Attitude** toward the class in general was measured by nine Likert-style items created for this study.

**Highlights from Assessments**

**Qualitative Findings**
Instructors had a positive response to the enhanced module and expressed enthusiasm about the practical focus of the assignments and engaging elements of the instructional materials. Students also indicated that they particularly enjoyed the note-taking module.

**Quantitative Findings**
The findings revealed a strong predictive relationship between motivation and students’ note taking and studying strategies, both of which are the outcome variables designed in this intervention.

Motivation plays important roles in student learning; therefore, instructional design should not only include students’ achievement outcomes as design considerations, but also design for motivation as learning outcomes.

Our approach of design targeting to improve students’ motivation was successful. The results revealed significant increase of motivation over time. In addition, the results did not reveal any significant differences on motivation between the experiment online and face-to-face conditions, which suggest that the online class format was as effective as the face-to-face class format.

**Details from Assessments**

**Qualitative Findings**
Instructors and students provided summative assessments of the new course module. In terms of training, one instructor indicated that the changes to the online course “were adequately communicated through email as well as in our meetings. This aided in the ‘training’ for a new design of the course.” Another instructor indicated, “I am excited about the new design.” A common student remark prior to the implementation of the new module was “I'm not big into note taking like we learned.” In contrast, when students who took part in the pilot program were asked to make overall comments in the end-of-semester evaluation, they specifically made reference to the note-taking module with such comments as “I like the online note taking section” and “I think the way that module was taught was very effective and helpful.”
Quantitative Findings

**Relationship between motivation and note taking and studying strategies**

In order to investigate the relationship between motivation and note taking and studying strategies, linear regression analysis was performed, with the motivation factors as the predictors, and note taking and studying strategies as the outcome variables (see results in Table 1).

With respect to strategies for taking notes (model 1 & 2), the results showed that regression models for both class formats were significant. In specific, both value and autonomy had significantly positive effect on strategies for taking notes in online classes, whereas only value had significantly positive effect on strategies for taking notes in face-to-face classes.

With respect to strategies for studying notes (model 3 & 4), the results showed that regression models for both class formats were significant. In specific, value, competence, and autonomy had significantly positive effect on strategies for studying notes in online classes. Whereas interest, value, and competence were the factors that positively influenced strategies for studying notes in face-to-face classes.

**Table 1. Regression models for motivation predicting note-taking strategies**

<table>
<thead>
<tr>
<th>Model</th>
<th>Outcome</th>
<th>Predictors</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>R²</th>
<th>F</th>
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<tbody>
<tr>
<td>1</td>
<td>Strategies of taking notes (Face-to-face Condition)</td>
<td>Interest</td>
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<td>.06</td>
<td>.00</td>
<td>.07</td>
<td>3.21</td>
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<td></td>
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<td>.07</td>
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<tr>
<td></td>
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<td>Competence</td>
<td>.11</td>
<td>.06</td>
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<tr>
<td></td>
<td></td>
<td>Autonomy</td>
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<td>.05</td>
<td>.03</td>
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<tr>
<td></td>
<td></td>
<td>Relatedness</td>
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<td>.06</td>
<td>.02</td>
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<td></td>
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<tr>
<td>2</td>
<td>Strategies of taking notes (Online Condition)</td>
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<td></td>
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<td>.07</td>
<td>.16</td>
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<td></td>
</tr>
<tr>
<td>3</td>
<td>Strategies of studying notes (Face-to-face Condition)</td>
<td>Interest</td>
<td>.13</td>
<td>.05</td>
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<td>.30</td>
<td>17.22</td>
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<tr>
<td></td>
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<td>.07</td>
<td>.21</td>
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<td></td>
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<tr>
<td></td>
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<td>Competence</td>
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<td>.05</td>
<td>.03</td>
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<tr>
<td>4</td>
<td>Strategies of studying notes (Online Condition)</td>
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<td>.10</td>
<td>.07</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Impact of Design on Motivation and Learning Strategies

To examine the effect of class formats and time on students’ motivation and note taking/learning strategies, repeated measure MANOVA analysis was conducted, with the motivation and note taking/learning strategies as the dependent variables separately, time as the repeated measure factor, and class format as the independent variable.

Results suggest that both time and class format had significant main effect on students’ motivation. In specific, time had significantly positive impact on students’ interest \([F(1,323)=9.97, p=.002, \eta^2=.03]\), competence \([F(1,323)=15.37, p<.001, \eta^2=.05]\), and autonomy \([F(1,323)=14.31, p<.001, \eta^2=.04]\) in both online and face-to-face classes. Students in the post-survey felt significantly more interested, competent, and making more choices than they felt in the pre-survey. Time also had a significant main effect on students’ both strategies for taking notes \([F(1,324)=87.48, p<.001, \eta^2=.21]\) and strategies for studying notes \([F(1,324)=5.96, p=.02, \eta^2=.02]\). Students in the post-survey reported to use significantly better note taking and studying strategies than they reported in the pre-survey.

In terms of the class format, there was only a significant difference of relatedness between online and face-to-face classes, \(F(1,323)=85.55, p<.001, \eta^2=.21\), with students in the face-to-face classes felt significantly more related than those in the online classes. No other motivation factors were significantly different between two class formats. No significant differences of note taking and studying strategies between online and face-to-face classes. No significant interactions between time and class format were found in the results. Means and standard deviations are presented in Table 2.

### Table 2. Means and standard deviations between conditions

<table>
<thead>
<tr>
<th></th>
<th>Face-to-Face Condition</th>
<th>Online Condition</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Test</td>
<td>Post-Test</td>
<td>Pre-Test</td>
<td>Post-Test</td>
</tr>
<tr>
<td>Interest</td>
<td>2.94 (.120)</td>
<td>3.07 (.121)</td>
<td>2.90 (.120)</td>
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</tr>
<tr>
<td>Value</td>
<td>5.98 (.95)</td>
<td>5.99 (.94)</td>
<td>5.90 (.99)</td>
<td>5.94 (.97)</td>
</tr>
<tr>
<td>Competence</td>
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<td>4.55 (.117)</td>
<td>4.55 (.112)</td>
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<tr>
<td>Autonomy</td>
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<td>4.00 (.127)</td>
</tr>
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<td>Strategies for taking notes</td>
<td>4.00 (.84)</td>
<td>4.45 (.89)</td>
<td>4.07 (.96)</td>
<td>4.46 (.81)</td>
</tr>
<tr>
<td>Strategies for studying notes</td>
<td>4.53 (.109)</td>
<td>4.74 (.99)</td>
<td>4.66 (.94)</td>
<td>4.76 (.94)</td>
</tr>
</tbody>
</table>
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.
   - Agree

2. The use of instructional technology improved my teaching.
   - Strongly Agree

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

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

5. There was adequate network access for all on-campus activities.
   - N/A

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 effect of learning technologies on instruction in EDUPSY1259 is strongly positive. Learning technology enables the course to be delivered online, which provides students with the flexibility to attend anytime, anywhere, an especially valuable feature for the students in this course. Further, learning technology enables deeper learning activities, in some cases beyond what can be achieved in non-technology-enhanced instruction. Students can practice note-taking on carefully chosen lectures, rather than written or ad-hoc delivered material. Students can collectively compose a shared resource, such as the spreadsheet of favored abbreviations.
This project also demonstrates the power of careful deployments of established technologies. In this project, we utilized the Carmen course management system rather than “new” or cutting-edge learning technologies. Innovation came through design. The revised module utilized the current CMS to provide a clear path for the students to navigate the module. Similarly, typical course designs are based on the content learning outcomes, while this project designed the content module and the activities within in a manner that encourages motivation and engagement as learning outcomes. We prioritized and simplified the user experience while emphasizing simplicity, consistency and stability in the content module.

**Effect of Learning Technologies on Learning Outcomes**

The revised content module was designed to be more engaging, collaborative, and motivational. The activities in the module are authentic, current and encourage an active learning process. The real-life connectedness allows students to easily apply note taking to their daily academic life. Data did not reflect statistically significant differences in student performance; however, it is not unusual that learning gains may not manifest in the pilot term of a course.

**Best examples of effect of technology on teaching**

One of the best examples of the effect of technology on teaching is that instructors who taught both in-person and online sections were so pleased with the quality of instructional materials that they asked to copy their pilot modules into their Carmen shells for the in-person sections (we asked them to hold tight!).

**Challenges**

The instructional design and development process took a lot of time. All team members have other commitments in their jobs, which drew out the process.

In addition, the goal of conducting learning analytic research on the Carmen database encountered multiple obstacles. Determining the appropriate level of access for the research team and implementing the controls necessary to maintain student privacy required a few weeks of planning. The Learning Systems team was able to establish remote access to the system and provided introductory training about how to query the data. However, the data itself proved opaque. Within the scope of this project, it proved impossible to identify reliable correlations between the system data and student behavior. The difficulties of interpreting the data were exacerbated by some restrictions required to protect student privacy. These obstacles prevented achievement of the learning analytics goals with available resources.

**Assessment of Assessment Plan**

Overall, our assessment plan was designed and implemented successfully. There were some limits to gauging the effect of the pilot as experienced in a single module, though student
feedback indicated that an expansion of the design elements to additional modules would be well received. This view was echoed by the instructional team, who expressed enthusiasm for the pilot elements and a desire to see the new design and structured applied to the rest of the course. Future assessment plans would extend the assessment items to cover the whole course and seek out additional qualitative feedback from students.

**Experience of Tech-enhanced Teaching**

The experience of technology-enhanced teaching enabled instructors to feel confident that their students were gaining high-quality instruction on the topic of note-taking. The lessons integrated text, images, and videos in a way that provided a more engaging and robust learning experience for students than had previously been the case. Instructors also reported enthusiasm for the assignments, as they had a natural progression and had clear applicability to students’ study habits.

**Moving Forward**

The design work begun in this project is extending in three different projects.

The instructors of the Dennis Learning Center, with support from OTEL, are developing further modules in EDUTL 1259 based on similar instructional design principles and templates.

Kui Xie, in collaboration with the ODEE Distance Education team, is developing another course designed to teach online learners the skills required to excel in online courses.

Much of the design work conducted for this course has provided a basis for the ODEE Distance Education template and standard practices.
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.
   
   **Strongly Agree**

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

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

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

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

6. Additional comments or feedback

   *The Impact Grant experience was a valuable learning experience that provided clear structure to help support the design process. We particularly enjoyed working with ODEE staff, who lent their expertise in project management and instructional design.*

Reflections on the grant process—what went well

The grant process was a wonderful opportunity to bring together a variety of perspectives and areas of expertise. We were particularly pleased with the visual elements and multimedia production made possible through the sharing of resources and staff talent. Through working together, we were able to build new opportunities, be at the forefront of new Carmen template design, and ensure new course materials met standards for accessibility and copyright.
Reflections on the grant process—what did not go well

Learning Analytics. As described in the Challenges section above, the Learning Systems team generously established research access to the analytic data generated by the Carmen system; however, the difficulties of that dataset, exacerbated by necessary privacy restrictions, prevented effective interpretation.

Key lessons learned

Project planning and implementation are iterative and complex processes; therefore it is imperative that organization and communication are constant components of the process.

Plan your project and follow the plan. Adjust as needed to meet the outcome and be willing to recognize that it is “okay” that the outcome is different from the original idea.

Suggestions for future recipients

- Recommend having someone take notes each meeting and distribute so all know the action items.
- Keep aligned and follow the Charter and timeline.
- Be practical on the expectations of the project.
- Communicate often (weekly) with the grant team and all stakeholders.
- Allocate a dedicated time to work on the project each week and do it!
- Have fun and enjoy working with your colleagues.
- Take advantage of all the expertise that ODEE has to offer. The team is a pleasure to work with on projects.

Three words to describe working with the ODEE Team

1. Colleague
2. Resourceful
3. Creative

Ah-ha moment of the grant process

While designing the course, realized that too often student motivation is not considered in the activities.
August 1, 2014

Dr. Kui Xie
310K Ramseyer Hall,
29 West Woodruff Avenue,
Columbus, OH 43210

Dear Dr. Xie:

Congratulations on your recent ODEE impact grant. I am very pleased that you received this grant; the results of your work already have had an important impact on a number of valued outcomes that are benefiting the Department of Educational Studies, the College of Education and Human Ecology, and The Ohio State University.

As you know, our college and department are engaged this year in writing new five-year strategic plans. Both our departmental plan and the college plan call for greater involvement of faculty and staff in developing and providing online courses. The interactive online learning module that you and your team members have created for the ESEPSY1259 course serves as an example of effectively addressing this need. First, through your revision of course materials, development of eLearning tools, and implementation of research, the results in a pilot study showed significant impact on students’ motivation and their use of learning strategies. Second, the project was at forefront of new Carmen template design. The learning modules and the process of developing them provided a best-practice template for redesigning the remaining modules of this and similar courses, and the design elements will continue to be carried forth in the multi-section ESEPSY 1259 course, reaching nearly 1,000 students annually. In addition, I am happy to learn that you are continuing working with the ODEE team to develop a new online course. The ESETEC5011: Orientation to Online Learning course will have a great potential to bring even broader impacts of learning technologies to the success of online college students at The Ohio State University.

Your work in the area of learning technologies is invaluable to our long-term goals, and the funds provided by the ODEE Impact Grant have had a wonderful impact both locally and beyond. Please let me know how I can continue to support your work in this area.

Sincerely,

Eric M. Anderman
Chair, Department of Educational Studies
By ODEE Team

Goals and objectives pre and post relation/connection

The central promise of this grant was the opportunity to bring together instructional design experts from multiple areas with the time and resources to design exceptional learning materials. This did, indeed, take place. ODEE and EHE instructional designers successfully collaborated to produce an exemplary use of Carmen and other resources. The design and templates piloted in this grant now serve as the basis for the online educational template used by ODEE programs and is serving as the basis for the full course revision of EDUTL1253 now underway.

The opportunity to pilot analytic access and research to Carmen was essentially a windfall bonus for this project, since it had been selected on the basis of the course redesign exclusively. However, the Learning Systems team was able to determine and meet requirements for providing team members remote access to all relevant student data in Carmen, as well as two training sessions about how to find and interpret this data. While the intricacies of D2L data structures limited the use that could be made of this data, major steps were taken toward researching, rather than merely storing, the data in the Carmen system.

While all project objectives were met, however, the project goals were not entirely achieved within the project timeline. Preliminary results from assessments indicate that there were not statistically significant improvements in student motivation, engagement, and performance. There are many possible reasons. Most likely, revision of a single module was not sufficient to produce measurable changes. Possibly the course designs fell short in the effort to engage and motivate students sufficiently. Possibly the fundamental assumptions of the grant over-predict influence for motivation.

Number and roles of ODEE individuals involved in the grant project

7 ODEE staff played significant roles in this project.

- Henry Griffy, Grants Coordinator, was project lead for ODEE.
- Marcia Ham, Senior Instructional Designer, helped design and build learning objects for the course
- John Muir, Instructional Designer, helped design and build learning objects for the course
- Ben Scragg, Instructional Designer, helped design and build learning objects for the course
• Vedu Hariths, Learning Systems, helped coordinate the learning analytics work of the project
• Bryce Bate, Learning Systems, helped trained the grant team for the learning analytics work of the project
• Mike Groeniger, Learning Systems, helped coordinate secure access to the Carmen database for the learning analytics work of the project

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

<table>
<thead>
<tr>
<th>TEAM MEMBER</th>
<th>HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Henry Griffy</td>
<td>90</td>
</tr>
<tr>
<td>Marcia Ham</td>
<td>24</td>
</tr>
<tr>
<td>John Muir</td>
<td>18</td>
</tr>
<tr>
<td>Ben Scragg</td>
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</tr>
<tr>
<td>Vedu Hariths</td>
<td>10</td>
</tr>
<tr>
<td>Bryce Bate</td>
<td>30</td>
</tr>
<tr>
<td>Mike Groeniger</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>204</strong></td>
</tr>
</tbody>
</table>

**Reflection of what aspects of the grant process, procedures, and collaboration worked at or above expectations.**

This team's combination of enthusiasm and expertise made this project both productive and enjoyable to work on. Despite busy calendars, team members were able to meet regularly for collaborative meetings which included both production and planning. Team members generally completed promised work according to schedule. Timely communication and open collaboration maximized efficiency of meeting time.

The project had two main benefits within ODEE. First, it served as a useful onboarding project for the team of instructional designers who had recently been hired to work on distance education programs. The limited scope and timeline of the grant project enabled a focused opportunity to learn the nuances of OSU's learning environments and
to begin developing standard templates for building learning materials within them. Second, the learning analytics thread of the project provided occasion for the team who manage those learning environments to pilot providing researcher access to learning systems data.

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

No part of the grant process was below expectations; however, the grant project could arguably have accomplished more than revision of the single module. Unfortunately, there was a misalignment between instructional design time and administrative guidance. Early in the grant, ODEE’s instructional design team had time to do more work, but recent leadership changes in EHE made it advisable to delay rebuilding the course. Later, once decisions about the course had been made, ODEE instructional designers were no longer available to assist as intensively.

This missed opportunity has been mitigated by the emergence of a new project. Kui Xie and ODEE’s Distance Education team are collaborating to design and build a new course to teach online learning skills to online learners.

**Three words to describe working with the recipients.**

1. Motivated
2. Researchers
3. Balanced

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

Watching the various members of the team present in the auditorium at the 2014 Innovate conference -- the departmental team and I discussing this project in one session, the ODEE instructional designers making a more general presentation in another session -- brought home how much had been achieved and how much expertise had been gathered for this project.

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

This team had applied during a previous Impact Grant round and not been selected. They followed up and accepted our offer of consultation hours, undertook the work and research we suggested, and used this experience to improve their application in the next round. This experience emphasized the potential benefits to be gained from working with non-recipients, which has led me to put more effort into doing so.
The standing meeting model was especially successful in this project. The regular schedule of work to be done punctuated by collaborative review and revision ensured that work continued to progress. This reinforced the importance of scheduling regular meetings with grants teams.

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.