Title of project: Exploring the effectiveness of three different course delivery methods in online and distance education

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Part I – Reporting your project findings
1. During the project, did you do anything differently than planned in your final grant proposal? If yes, please describe and explain why.

In consultation with the TLC and the Centre for Online and Distance Education (CODE), we extended the timeline for the project by one semester, due to the lateness of our application for a T&L development grant, a few issues that needed to be worked out with CODE regarding the delivery of the online survey and obtaining consent from a third course instructor (who was not directly involved in the research project itself), and concomitant delays in obtaining final Research Ethics Board approval. Instead of surveying the students enrolled in the Spring 2013, Summer 2013 and Fall 2013 CODE offerings of Crim 101, Crim 104 and CrIm 131 (as was originally planned), we surveyed the students enrolled in the Summer 2013, Fall 2013 and Spring 2014 offerings of these three CODE courses.

In consultation with CODE, we decided to add a number of extra questions to the online survey, asking why students took CODE courses (as opposed to regular campus courses), how much effort they felt was required for CODE courses (as opposed to regular campus courses), how many hours a week they spent on CODE courses, whether they thought CODE courses were the same, better or worse than on-campus courses, etc.

In carrying out the project, a side research project emerged, in which our research assistants worked with Sheri Fabian, author of Crim 131 online tutorials, to undertake a qualitative analysis of the online discussions produced in WebCT. All of the on-line discussions for four on-campus versions of Crim 131 (Fall 2011, Spring 2012, Spring 2013 and Fall 2013) which used online tutorials and three fully online CODE versions of Crim 131 (Spring, Summer and Fall 2013) were downloaded into NVivo qualitative software for coding, categorization and identification of prominent themes. The preliminary results of this side research project were presented at the International Scholarship of Teaching and Learning in Quebec City in October 2014. Sheri Fabian and the research assistants hope to present the final results at the Scholarship of Teaching and Learning in Higher Education conference in Vancouver in June 2015. [NOTE: This side research project blends data from the present T&L Development Grant project with data from our first grant project].

2. Summarize your findings according to the question(s) from your grant proposal. Provide the results of your ‘data’ analysis for each question or describe the agreed upon ‘outcome’ from the proposal (e.g., course design, online tool, etc.).
   a. How can we best collect (and assess) evidence of the effectiveness of asynchronous online discussion groups?

We conducted a literature review of extant research studies on the delivery of online courses, paying particular attention to ‘best practices’ in online course delivery, and measures used by other researchers to assess the
effectiveness of asynchronous discussion groups. Information (and measures) derived from this literature review were used to develop specific groups of questions in the online survey, and also provided guidance to Sheri Fabian and the research assistants with respect to the side research project involving the qualitative analysis of the online discussions from the four on-campus versions of Crim 131 (Fall 2011, Spring 2012, Spring 2013 and Fall 2013) which used online tutorials and the three fully online CODE versions of Crim 131 (Spring, Summer and Fall 2013). Based on our previous experience with our first T&L Development grant study, and the fact that this present study targeted three fully online CODE courses, we determined early on in the process that the best way (in fact, the only way) to survey the students was by employing an online survey, using fluidsurveys.com software tools. [There was preliminary discussion about CODE mounting the online survey themselves, but it was finally determined that this would create difficulties with ethics approval, as the principal researchers would not be in a position to provide the necessary assurances regarding participant confidentiality, handling of data, eventual destruction of data, etc.]

b. How can we best collect (and assess) evidence of the effectiveness of interactive exercises/educational video games?

We conducted a literature review of extant research studies on the delivery of online courses, paying particular attention to ‘best practices’ in online course delivery, and measures used by other researchers to assess the effectiveness of interactive exercises (educational video games). Information (and measures) derived from this literature review were used to develop specific groups of questions in the online survey. We also examined the results of our earlier T&L Development grant study, to see what information we were missing, and to consider new lines of questioning that fill in the missing information. Based on our previous experience with our earlier T&L Development grant study, and the fact that this was a study of (fully online) CODE courses, we determined early on that the best way (in fact, the only way) to survey the students was by employing an online survey, using fluidsurveys.com software tools.

c. How can we best collect (and assess) evidence of the effectiveness of online performance quizzes?

To address this research question, we looked at the results of our first T&L Development grant study, and asked ourselves how we could define/measure effectiveness. We decided that there were two ways to do this. One was to ask students whether the online quizzes were helpful to them in understanding the course materials, studying for examinations, etc (which we did). The other way (which we are still planning to investigate) is to compare students’ perceptions of the effectiveness/value of the online quizzes to their self-reports of GPA and self-reports of performance on exams in the three CODE courses.

d. How can we best collect (and assess) evidence of the effectiveness of online audio-visual instruction prepared specifically for the course (e.g., mini-lectures, or Webcasts)?

We conducted a literature review of extant research studies on the delivery of online courses, paying particular attention to ‘best practices’ in online course delivery, and measures used by other researchers to assess the effectiveness of online audio-visual instructional materials prepared by the course instructor (mini-lectures or tutorials in Webcast format). Information (and measures) derived from this literature review were used to develop specific groups of questions in the online survey. To address this research question, we again looked at the results of our T&L Development grant study, and asked ourselves how we could define/measure effectiveness and gather more in-depth information than in the previous study. We decided that there were two ways to do this. One was to ask students whether the audio-visual instructional materials were helpful to them in understanding the course materials, studying for examinations, etc (which we did). The other way (which we are still planning to investigate) is to compare students’ perceptions of the effectiveness/value of the audio-visual instructional materials to their self-reports of GPA and self-reports of performance on exams in the CODE course. We were also able to design survey questions that distinguished between online tutorial (mini-lecture) materials, online lectures, and the two courses that employed various versions of both.
Phase 2

e. Do students report that participation in asynchronous online discussion groups improves their learning outcomes? If not, do students at least report that online discussion increases their enjoyment or sense of engagement in the learning process?

From a purely quantitative perspective, this could best be described as a “split decision.” About half of the Crim 131 students felt that the asynchronous online discussion groups were helpful, and about half did not. Also, about half of the Crim 131 students said that the online discussions were about the same or better than discussions in traditional (on-campus) tutorials, and about half said that they were not. By contrast, 65% of the Crim 103 students felt that the asynchronous online discussion groups were helpful. On the other hand, only 44% of the Crim 103 students said that the online discussions were about the same or better than discussions in traditional (on-campus) tutorials. Qualitative analysis of the Crim 131 online discussions reveals a higher than anticipated degree of critical thought in the postings, prolonged engagement in some discussion groups, and some noteworthy (well informed) debates. As noted above, a side research project emerged, in which our research assistants worked with Sheri Fabian, author of the Crim 131 online tutorials, to undertake a qualitative analysis of the Crim 131 online discussions produced in WebCT. Further results from this side study will be forthcoming in the near future. Crim 104 did not employ asynchronous online discussion groups.

f. What do students say about the effectiveness of interactive exercises/educational video games? How do student reports of effectiveness compare with learning outcomes?

Ninety percent (90%) of the Crim 104 students said that the interactive exercises and educational video games were helpful in understanding the course materials, and 84% said they were helpful in preparing for exams. By contrast, 66% of the Crim 103 students felt that the interactive exercises and educational video games were helpful in understanding the course materials. When asked to assign an overall letter grade, 55% of Crim 104 students gave the interactive exercises and educational video games an A, while 33% gave them a B. When asked to assign an overall letter grade, 33% of Crim 103 students gave the interactive exercises and educational video games an A, while 42% gave them a B. Crim 131 did not employ interactive exercises and educational video games.

g. Which quiz formats did students find offered the best insight into whether or not they had met the learning objectives? How do student perceptions of performance quizzes compare with their actual performance?

Ninety-two percent (92%) of the Crim 104 students said that the performance quizzes were helpful in understanding the course materials, and 92% said they were helpful in preparing for exams. Eighty-eight percent (88%) of the Crim 103 students said that the performance quizzes were helpful in understanding the course materials, and 86% said they were helpful in preparing for exams. Sixty-nine percent (69%) of the Crim 131 students said that the performance quizzes were helpful in understanding the course materials. Student perceptions of the helpfulness of the quizzes and the degree to which this corresponds with their overall performance in the course is still a subject of ongoing statistical analysis.

h. What benefit do students report deriving from online audio-visual instruction designed specifically for the course (e.g., mini-lectures, or Webcasts)?

Eighty-nine percent (89%) of the Crim 104 students said that the online lectures were helpful in understanding the course materials, and 87% said the Crim 104 online audio-visual (tutorial) presentations were helpful. Seventy-three percent (73%) of the Crim 103 students said that the online lectures were helpful in understanding the course materials (Crim 103 did not use online audio-visual (tutorial) presentations). Ninety-three percent (93%) of the Crim 104 students said that they viewed most or all of the online lectures, while 87% of the Crim 104 students said that they viewed most or all of the online lectures. Crim 131 did not employ
online lectures or online audio-visual (tutorial) presentations.

i. Are learning outcomes (e.g., understanding of content, clear presentation of materials, links to course themes and critical analysis, facilitation of discussion, etc.) demonstrated in the online presentations in CRIM 131?

Only 41% of the Crim 131 students found the online presentations helpful in understanding course materials. From a purely quantitative perspective, only 12% of the students described the online presentations as the most enjoyable part of the course, whereas 27% described them as least enjoyable. In the next version of the e-tutorials, Sheri Fabian is considering dropping the presentation aspect or reducing it and having students prepare discussion questions, a link to current events, or a video clip, and then make them responsible for facilitating discussion.

j. Are learning outcomes (e.g., critical thinking skills and engagement with course materials) demonstrated in the CRIM 131 on-line discussions?

Qualitative analysis of the Crim 131 online discussions reveals a higher than anticipated degree of critical thought in the postings, prolonged engagement in some discussion groups, and some noteworthy (well informed) debates. As noted above, a side research project emerged, in which our research assistants worked with Sheri Fabian, author of the Crim 131 online tutorials, to undertake a qualitative analysis of the Crim 131 online discussions produced in WebCT. Further results from this side study will be forthcoming in the near future.

Part II – Implications and dissemination

3. Have you changed anything (or plan to change anything) in your teaching of particular courses or in general, because of your experiences in conducting this project? Please provide examples.

Barry Cartwright has designed an entirely new set of Crim 101 online tutorials, and an entirely new (fully online) Crim 101 course for CODE, taking into consideration the findings of this study (and our first T&L Development grant study) with respect to the effectiveness of the Crim 104 online materials. Sheri Fabian is re-designing the Crim 131 online tutorials and CODE version of Crim 131, with an eye to making the online presentations more appealing to students, and thus (hopefully) facilitating even better online discussion.

4. We asked that you share information about your project with close colleagues either in a formal or informal way. How did you share your findings with colleagues?

We presented our preliminary results at the Teaching and Learning Centre’s Symposium on Provocative Pedagogy in May 2014. We shared the results with the Centre for Online and Distance Education (CODE), by having their representatives attend the TLC symposium. We also showed the results informally, to various of our colleagues in the School of Criminology.

5. Have you become involved in other activities or projects (e.g., departmental committees, curriculum projects, other grant projects) because of having conducted a grant project or because of the findings of your project?

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identification of prominent themes. [NOTE: This side research project blends data from the present study with data from our earlier T&L Development grant study].

6. If you have presented your project at a conference or have a publication about your project, please provide the citation. We would like to accurately record and promote the work of project grantees.


7. Do you have plans for future dissemination of your project?

We are hoping to present our final research results at the Society for Teaching and Learning in Higher Education Conference in Vancouver in June 2015. We also hope to publish a research paper in a scholarly journal.