Linking Online Course Design and Implementation to Learning Outcomes: A Design Experiment

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Abstract

This paper reports on preliminary finding from ongoing design-based research being conducted in the fully online Masters of Teacher Leadership program at the University of Illinois Springfield. Researchers are using the Quality Matters (QM) and Community of Inquiry frameworks to guide the iterative redesign of core courses in the program. Preliminary results from the redesign of one course suggest that such approach can improve student learning outcomes. Results also support the efficacy of the QM and CoI theoretical frames, and the usefulness of design-based approaches in online learning.

Design-based research blends empirical research with the theory-based design of learning environments. It centers on the systematic investigation of innovations designed to improve educational practice through an iterative process of design, development, implementation and analysis in real world settings (Wang & Hannafin, 2005). The members of the Design-based Research Collective (2003) maintain that design-based research helps us understand "how, when, and why educational innovations work in practice" (p. 5) because its innovations are grounded in educational theory.

The research reported in this paper did not start out as a design experiment. It was originally conceived as a study exploring the effects of revising an online course based on the Quality Matters framework. When results refuted our original assumptions, it became an ongoing design-based study. In the sections which follow we explore the two theoretical frameworks which guided our study, and then describe the course redesign process as it unfolded. We next discuss the methodology of our study and its findings, and close with reflections on its educational significance.

Theoretical Framework

Quality Matters

Quality Matters is a faculty-oriented, peer review process designed to assure quality in online and blended courses (see: http://www.qualitymatters.org/index.htm). The QM review process is centered on a rubric originally developed by MarylandOnline (http://marylandonline.org/)] wanting to ensure the quality of shared online course offerings. The rubric is based on instructional design principles (Quality Matters, 2005) and is organized around eight categories – course overview, learner objectives, assessment and measurement, resources and materials, learner engagement, course technology, learner support, and accessibility (See Appendix A).

Within these eight categories are 40 individual standards with ratings of 1, 2 or 3. There are 17 three point standards and a course must receive a three point rating for each of these standards plus attain a minimum score of 72 of 85 total points to meet the QM level of course design acceptance. Three trained reviewers analyze the course site and rate each standard as existing, or not, at an 85% level or higher. The instructor completes a five page QM Instructor Worksheet that provides information about the course that may not be evident within the course design. This instructor worksheet is referenced by the reviewers as they analyze the course site itself before making a final judgment on each standard. If the reviewer believes the standard exists at this level the full point value is awarded. A standard that does not meet the 85% level gets no points. Two of the three reviewers must rate a standard as being met for that standard to be accepted. A major strength of the QM process is that comments are provided by the reviewer for each standard that isn't met and these comments guide the instructor during the redesign of the course.

The analysis process takes from one to three hours per reviewer to complete. The three reviews are combined to determine the level at which the course has been rated and those areas which are in need of revision are presented to the instructor. Changes are made to the design based upon the identified needs and a second review is performed to assure that all identified changes have been made.

Although little research to date has explored links between QM and learning outcomes, preliminary research (Legon, Runyon, & Aman, 2007) found higher grades and greater student interaction with course materials after redesign of a large enrollment undergraduate course. Currently, over 300 colleges and universities in 44 states are QM subscribers, including 11 statewide systems and several large consortia.

The QM framework, however, only addresses course design, and, it should be noted, with an objectives-based approach. Seven critical standards (standards that must be met or the course will fail the review) are linked to well specified course and module objectives. The QM framework does not address course implementation and/or the processes of learning.

Community of Inquiry

The Community of Inquiry (CoI) framework (Garrison, Anderson & Archer, 2000), on the other hand, does address learning processes. It addresses them, moreover, from a collaborative constructivist point of view. Building from the notion of social presence, the CoI framework represents online learning experiences as a function of relationships among three presences: social, teaching, and cognitive. The CoI framework views all three as working together to support deep and meaningful learning processes. Indeed, research findings have linked social presence (Swan & Shih, 2006), teaching presence (Shea, Li, Swan, & Pickett, 2005) and cognitive presence (Garrison & Cleveland-Innes, 2005) to each other and to such outcomes as course satisfaction, community and perceived learning.

In 2008, researchers working with the CoI framework developed a survey designed to measure student perceptions of each of these presences. The survey consists of 34 items (13 teaching

presence, 9 social presence, and 12 cognitive presence items) that ask students to rate their agreement on a 5 point Likert scale (1=strongly disagree; 5=strongly agree) with statements related to the CoI framework (see Appendix B). The survey has been validated through factor analysis (Arbaugh, et al, 2009; Swan et al., 2008) and used to further explore the CoI framework and the interactive effects of all three presences (Garrison, Cleveland-Innes & Fung, 2010; Shea & Bidjerano, 2009) with some meaningful results. For example, researchers have linked 21% of the variance in program retention to two social presence survey items (Boston et al., 2010).). It should be noted, however, that perceptions are a subjective measure, and that while that is very appropriate in the constructivist frame, in may not be everywhere appropriate.

Accordingly, CoI researchers have recently begun exploring ways to link it to course outcomes (Arbaugh, Bangert & Cleveland-Innes, 2010; Boston et al., 2010). Quality Matters (QM) researchers have begun likewise investigating the relationship between course redesign and course outcomes. The research reported in this paper explores links between course design (as measured by the QM rubric), learning processes (as measured by the CoI survey), and course outcomes.

Course Redesign

The original purpose of this study was to investigate relationships between course design, learning processes, and course outcomes. Its focus was on the review and revision of one fully online, graduate course in educational research methods based on the Quality Matters (QM) framework. Learning processes were measured using the Community of Inquiry (CoI) survey; outcome measures included scores on major course assessments as well as final course grades (all standardized to percent of possible scores); and all measures were compared before and after a QM review and redesign. This study was originally designed to investigate whether redesigning an online course to meet QM standards would result in improved learning processes as measured by the CoI survey, and that improved learning processes would then result in improved student performance (see Figure 1)

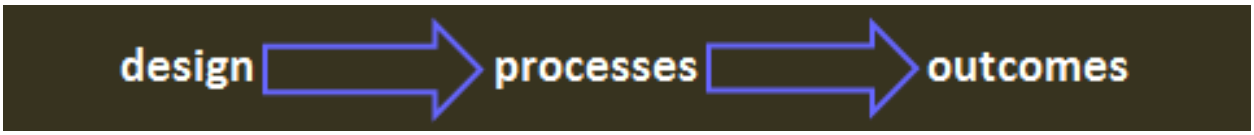


Figure 1. Initial Model of Effects of Course Design on Learning Outcomes

Our initial findings, however, showed an actual reduction in student perceptions of learning processes (CoI scores) but an increase in performance (course outcomes) after the QM redesign. This led us to believe that the QM and CoI frames are really orthogonal (see Figure 2); that is they view learning from differing perspectives and so measure different things. And because scores on the CoI survey went down after the QM redesign, we began exploring whether iterative changes to the course based on CoI responses could a) actually raise those scores, and b) result in improved student performance.

Figure 2. Revised Model of the Effects of Course Design and Learning Processes on Learning Outcomes

We have thus been conducting design-based research involving a single graduate level online course. Initial course redesign involved the use of the QM rubric to identify areas that needed to be improved. Most of these centered on the development of complete objectives for every unit in the course and the linking of objectives to assessments. QM redesign accordingly included the development of a course document (Figure 3) that summarized objectives and assessments by overall course goals and units.

EDL 541 COURSE GOALS AND OBJECTIVES

1. A GENERAL UNDERSTANDING OF QUANTITATIVE AND QUALITATIVE RESEARCH METHODS		
UNITS	OBJECTIVES (Students will be able to:)	ASSESSMENT
1	Distinguish between *types of research* and *research methodologies*	Unit One Quiz
1	Define *content analysis*	Unit One Quiz
1	Define *mean, median* and *mode* and give examples of when they and *percents* might be employed in descriptive studies	Unit One Quiz
1	Identify *independent and dependent variables* in experimental research	Unit One Quiz
2	Discuss *potential risks* in educational research and tell how these are ethically addressed	Unit Two Quiz
2	Identify the *characteristics of good research questions*	Unit Two Quiz
2	Define *variability* and distinguish between *range, variance,* and *standard deviation*	Unit Two Quiz
2	Explain *normal distribution.*	Unit Two Quiz
3	Distinguish between *experimental* and *quasi-experimental research*	Unit Three Quiz
8	List the *steps of action research*	Unit Eight Quiz
8	Distinguish between *action research and formal research*	Unit Eight Quiz
2. THE SKILLS NEEDED TO CRITICALLY READ EDUCATIONAL RESEARCH		
UNITS	OBJECTIVES (Students will be able to:)	ASSESSMENT
3	Critically review a research article employing content analysis.	Article Review #1
4	Critically review quantitative research	Article Review #2
5	Critically review qualitative research.	Article Review #3
6	Critically review a research article employing mixed methodologies	Article Review #4
3. THE ABILITY TO WRITE A RESEARCH PROPOSAL		
UNITS	OBJECTIVES (Students will be able to:)	ASSESSMENT
2	Write a *problem statement* for a research proposal	Problem Statement Assignment
3	Develop *literature sources* for a research proposal and correctly reference them.	Literature Sources Assignment
4	Write a *literature review.*	Literature Review Assignment
5	Write a *research question*	Research Questions Assignment
6	Develop and describe the *research methodology* for a research proposal	Methodology Assignment
7	Write a complete *research proposal* in proper APA style	Research Proposal
4. ABILITY TO APPLY QUANTITATIVE AND QUALITATIVE TOOLS TO DECISION MAKING		
UNITS	OBJECTIVES (Students will be able to:)	ASSESSMENT
1	Describe educational research and apply it to their own work	Unit One Discussion
2	Discuss the issues surrounding the use of children as research subjects.	Unit Two Discussion
3	Develop a research topic relevant to their own context.	Unit Three Discussion
4	Discuss the differences between and the advantages/ disadvantages of experimental and quasi-experimental research.	Unit Four Discussion
5	Describe in some detail research they could conduct	Unit Five Discussion

Figure 3. Portions of Course Goals and Objectives Document

As previously stated, however, CoI measures of learning processes declined, especially in the area of teaching presence. Thus, small measures were taken with the intent of improving CoI ratings. For example, over the course of three semesters all the course lectures and study guides were rewritten and redesigned to reflect the personality of the instructor and to make concepts clearer; discussion questions were changed to relate more to the students' experiences and were given significant credit within the courses (as compared with extra credit in original version of the course); student groups were required to agree upon written participation guidelines before beginning their work on collaborative article reviews; and journaling between students and the instructor was added and given a small amount of credit to make sure it occurred.

Our data show improved performance before and after the QM revision and performance gains resulting from changes made in course design based on CoI findings, but significant changes only across the whole process. We think this approach – bringing a course into compliance with the QM design standards and then iteratively "tweaking" it based on CoI ratings, holds promise, but of course this is only one course. We are now expanding the study to include all the core courses in our fully online Master of Teacher Leadership Program.

Methodology

Research Questions

The investigation reported in this paper was design-based research involving the iterative redesign of one graduate level education course based on the Quality Matters (QM) and Community of Inquiry (CoI) frameworks. Two research questions were investigated:

- Can course redesign based on meeting Quality Matters standards result in improved student learning outcomes?

- Can changes in course design and implementation targeted to enhance particular Community of Inquiry scores a) actually result in increased scores, and b) lead to improved student learning outcomes?

Subjects and Setting

Subjects were graduate students of education enrolled in a Masters of Teacher Leadership program at a small. Midwestern, public university. The researchers focused on one course in that program, EDL 541, which they submitted for a QM review in the fall of 2009 and revised for implementation in the spring 2010 semester. EDL 541 is a required graduate course in Educational Research Methods in a fully online masters program in teacher leadership, and because it is a core course, several sections, taught by multiple instructors, are offered every semester. To ensure consistency in learning outcomes, common goals, materials, and assessments are used by all instructors. EDL 541 had been taught online for nine years, and

although minor adjustments had been made to it by the multiple instructors who taught it, it remained basically the same course in the fall of 2009.

In the fall of 2009, two sections of EDL 541 were offered. Both were submitted for QM review, which involves a collaborative assessment by three evaluators led by a QM expert reviewer. The QM rubric consists of 40 items in eight categories describing criteria to be met. Items are assessed on a met/not met basis and assigned point values of 1, 2, or 3, depending on their perceived importance,. To meet QM review expectations, courses must meet all 3-point criteria and earn a total of 72/85 points or more on the entire evaluation measure. Both sections failed the QM review, mostly because of a lack of stated course objectives.

Based on the QM review, EDL 541 faculty began making revisions to course sections designed to address areas identified as in need of improvement. The first of these revised sections was implemented in the spring of 2010. The revisions took the section from a failing QM score of 58 to a passing score of 84. As previously stated, further changes to this single version of EDL 541 were made in the two semesters following the QM revisions based on CoI data.

The preliminary study reported in this paper used a quasi-experimental design. The independent variables were course design (before and after QM redesign) and implementation (iterative changes based on CoI data). The dependent variables were learning outcomes (as measured by overall course grades and grades for two major assignments, a research proposal and a final exam).

As previously stated, this is an ongoing study. We are currently exploring whether the redesign process outlined above – course redesign to meet QM standards and iterative tweaking of design and implementation factors to raise CoI scores – can work together to improve learning outcomes in other courses, beginning with the four courses that make up our program core. At present three more courses have undergone QM review and are being revised accordingly. The same research questions will be applied to these courses and the same independent variables will be manipulated. Dependent variables (learning outcomes) will, of course, vary depending on the course.

Data Sources and Analyses

This ongoing study used a design-based methodology to explore the effects of course revisions on student learning outcomes. Subjects were graduate students enrolled in one instructor's section of Educational Research Methods in the fall 2009 (n=12), spring 2010 (n=14), summer 2010 (n=9), and fall 2010 (n=15) semesters. Outcome measures included scores on a written research proposal and the final exam, as well as overall course grades. The former measures represent two of the four major course goals – the ability to write a research proposal and a general understanding of quantitative and qualitative methodology. Measures of the other two course goals – the skills needed to critically read educational research and the ability to apply quantitative and qualitative tools to data-based decision making – were not included in the analyses due to a ceiling effect. All scores were standardized to percent of total possible. In addition, CoI (learning processes) data was collected from a subset of students who volunteered to complete the survey each semester.

All students taking EDL 541 in the fall of 2009, before the QM review, were asked to complete the CoI survey and their course grades were collected. Six out of 12 students returned the surveys. In the spring of 2010, after the QM review and redesign of one course section, students in that course were asked to complete the CoI survey and their course grades were collected. Eleven out of 14 students returned the survey in the spring of 2010. This same section of EDL 541 was revised again for the summer 2010 semester when 9 students took the course and six returned the survey. In the Fall 2010 semester, after yet another small revision, twelve out of 15 students returned the CoI survey.

All data were averaged and compared using descriptive statistics. Outcome data were compared using analysis of variance.

Results

Initial findings regarding the effects of the QM revisions on learning processes as measured by the CoI survey were that there were no differences in overall CoI scores between students enrolled in the fall 2009 (before revision) and the spring 2010 (after revision) EDL 541 classes (Figure 4). In fact, teaching presence was rated substantially lower (4.82 fall; 3.91 spring) in the revised version of the course taught in the spring, although not significantly so due to the very low N. Social presence and cognitive presences were also rated slightly lower in the spring than they were in the fall (social presence – 4.18 fall, 4.04 spring; and cognitive presence 4.08 fall; 3.89 spring).

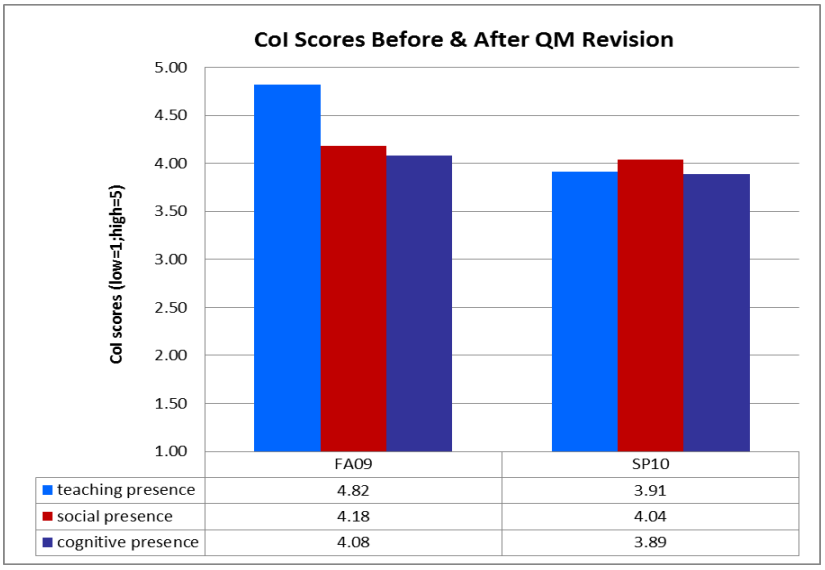


Figure 4. Comparisons of CoI Ratings Between Fall 2009 & Spring 2010 Sections

Partial responsibility for these results may be attributed to the fact that only half the students enrolled returned the CoI survey in the fall whereas nearly 4/5 of the students returned the survey during the spring semester. Thus, it could be that those students returning the survey in the fall were the ones who were most satisfied with the course. It could also be that the

instructor was attending to QM and not CoI issues in the course revisions, and so paid less attention to teaching presence in particular during the spring implementation.

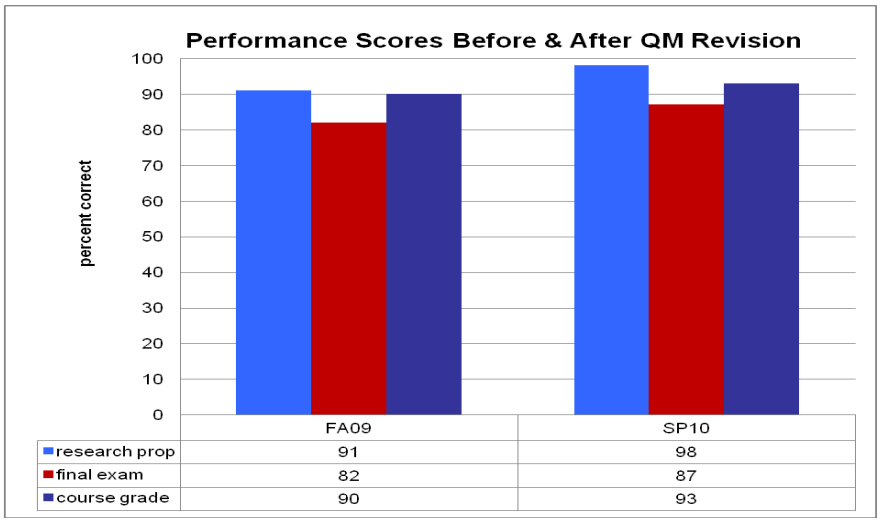


Figure 5. Comparisons of Learning Outcomes Between Fall 2009 & Spring 2010 Students

However, a comparison of learning outcomes for the fall and spring versions of the course (Figure 5) reveal meaningful, if not significant, increases on all three outcomes measures. Grades on the research proposal went from an average of 91 to an average of 98 percent, grades on the final exam went from an average of 82 to an average of 87 percent, and overall course grades improved from an average of 90 to an average of 93 percent. The findings suggest that the QM course revisions did indeed result in improved student outcomes. Arguably, student performance improved because the QM revision led instructors to focus on objectives and the mapping of objectives to outcomes, and that such focus translated into their activity in the course.

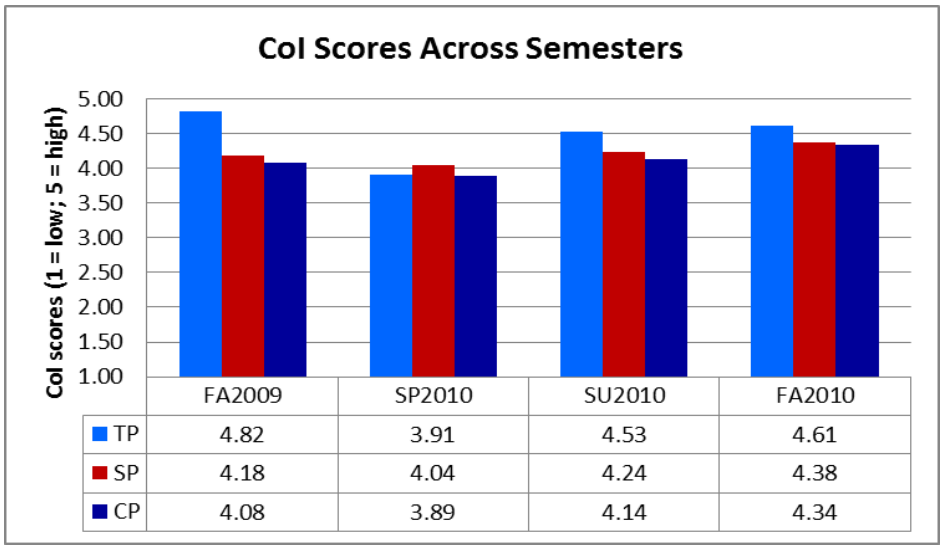
Moreover, taken together the CoI and outcomes measures suggest that the QM and CoI frameworks are actually orthogonal, that they view online learning from very different perspectives, and measure very different aspects of online courses. Such view seems quite reasonable since the QM review/revision is external, objectives-based, and rooted in course design, while the CoI survey is subjective, constructivist in nature, and rooted in course implementation. It follows that both measures might be used to improve online courses. The research has thus become design-based and has proceeded in two phases:

- the revision of EDL 541 to meet QM course design standards and the comparison of CoI and outcome scores before and after those revisions;
- and the semester to semester "tweaking" of EDL 541 based on perceived deficits highlighted in the CoI responses. In this phase, CoI data became a way of making sure changes made actually improved perceived presences, and outcome data was compared across semesters to test their effects on student performance.

In Phase One, QM revisions were centered on developing detailed objectives at the unit level and linking the objectives to assessments. This process also resulted in revisions to course lectures, study guides, and quizzes make them more suited to the instructor's personality and more focused on particular concepts.

In the summer of 2010, Phase Two, CoI-based changes made centered on making participation in course discussions required (and counting for 16% of the course grade) to value social interaction more and adding journaling between the instructor and students. In the fall of 2010, discussion prompts were changed to make them more relevant to participants' practice and student groups were required to agree upon written participation guidelines before beginning their work on collaborative article reviews.

Phase Two changes to course design and implementation actually did result in gradual improvements in students' perceptions of teaching, social, and cognitive presence from the spring of 2010 to the point where teaching presence scores in the fall of 2010 were almost as high as the fall 2009 scores, which may have been an anomaly due to a poor response rate, and social presence and cognitive presence scores were a good bit higher in the fall of 2010 than they were in the fall of 2009 (Figure 6).



	FA2009	SP2010	SU2010	FA2010
TP	4.82	3.91	4.53	4.61
SP	4.18	4.04	4.24	4.38
CP	4.08	3.89	4.14	4.34

Figure 6. Comparison of CoI Scores Over Four Semesters.

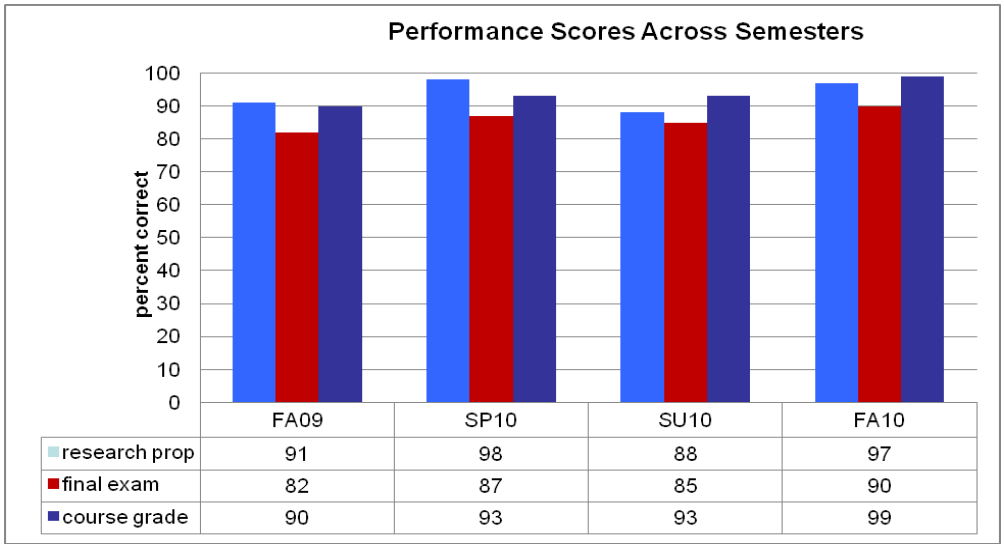


Figure 7. Comparison of Learning Outcomes Across Four Semesters

Perhaps more importantly, learning outcomes also increased across the semesters (with a slight dip in the summer semester, which is understandable in that the same content is covered in eight rather than sixteen weeks). The data show that the combination of both the QM and CoI revisions across four semesters brought average scores on the research proposal from a 91 to a 97 and on the final exam from an 82 to a 90, while overall course grades went from a 90 to a 99 (Figure 7). Analysis of variance shows these differences are significant for the final exam scores at the p=.05 level and for overall course grades at the p=.001 level (Table 1). Using Cohen's (1992) analysis of eta squared results (Table 2), effect sizes of the cumulative QM/CoI revisions were small for the research proposal (.11) and the final exam (.16), but moderate in terms of the overall course grades (.29). Although there may be a ceiling effect operating with respect to outcome measures as well, if similar effects hold for other core courses, these results may be magnified by the greater numbers.

Table 1. *Analysis of Variance Comparing Learning Outcomes Across Semesters*

ANOVA Table

			Mean Square	F	Sig.
Research Proposal Percent * Semester	Between Groups	(Combined)	242.956	1.800	.161
	Within Groups		134.952		
	Total				
Final Exam Percent * Semester	Between Groups	(Combined)	503.526	2.805	.050
	Within Groups		179.503		
	Total				
course grade * Semester	Between Groups	(Combined)	191.473	6.214	.001
	Within Groups		30.814		
	Total				

Table 2. *Effect Sizes for Pre/Post Revisions Learning Outcomes*

Measures of Association

	Eta	Eta Squared
Research Proposal Percent * Semester	.327	.107
Final Exam Percent * Semester	.397	.158
course grade * Semester	.541	.293

The findings suggest that revising EDL 541 around stated objectives (QM) and presence deficits identified by CoI scores resulted in better student performance, especially in terms of overall course grades. The results thus indicate that ongoing course redesign guided by the Quality Matters (QM) and Community of Inquiry (CoI) frameworks can result in improved learning. Future research will explore whether such approach can work in other courses.

Educational Significance

The linking of online course design and implementation to learning outcomes is long overdue in online education. This ongoing study is not only a first step in that direction but it employs what are probably the two most commonly used theoretical frameworks in online education in the process. Findings suggest that both can be linked to improved outcomes, but unfortunately not to each other. However, they do suggest a trajectory – QM review and revision of courses and incremental "tweaking" of course implementation relative to deficiencies revealed by the CoI survey – for incremental improvement of online courses. We are beginning to explore the efficacy of such an approach at the program level. If it indeed can lead to improved student performance across a variety of courses, then it will be of widespread practical use. In addition, demonstrating a link between the QM framework and student outcomes and the CoI framework and student outcomes has great theoretical merit, especially as regards the latter and the cognitive presence construct in particular. Finally, the efficacy of our efforts demonstrates the usefulness of design-based approaches to research on online learning.

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Appendix A: Quality Matters Rubric (Overview)

Quality Matters Rubric Standards 2008-2010 edition with Assigned Point Values

	Standard	Points
Course Overview and Introduction	1.1 Instructions make clear how to get started and where to find various course components.	3
	1.2 A statement introduces the student to the purpose of the course and to its components; in the case of a hybrid course, the statement clarifies the relationship between the face-to-face and online components.	3
	1.3 Etiquette expectations (sometimes called "netiquette" for online discussions, email, and other forms of communication are stated clearly.	1
	1.4 The self-introduction by the instructor is appropriate and available online.	1
	1.5 Students are asked to introduce themselves to the class.	1
	1.6 Minimum student preparation, and, if applicable, prerequisite knowledge in the discipline are clearly stated.	1
	1.7 Minimum technical skills expected of the student are clearly stated.	1
Learning Objectives	2.1 The course learning objectives describe outcomes that are measurable.	3
	2.2 The module/unit learning objectives describe outcomes that are measurable and consistent with the course-level objectives.	3
	2.3 All learning objectives are stated clearly and written from the students' perspective.	3
	2.4 Instructions to students on how to meet the learning objectives are adequate and stated clearly.	3
	2.5 The learning objectives are appropriately designed for the level of the course.	2
Assessment and Measurement	3.1 The types of assessments selected measure the stated learning objectives and are consistent with course activities and resources.	3
	3.2 The course grading policy is stated clearly.	3
	3.3 Specific and descriptive criteria are provided for the evaluation of students' work and participation.	3
	3.4 The assessment instruments selected are sequenced, varied, and appropriate to the content being assessed.	2
	3.5 "Self-check" or practice assignments are provided, with timely feedback to students.	2
Resources and Materials	4.1 The instructional materials contribute to the achievement of the stated course and module/unit learning objectives.	3
	4.2 The relationship between the instructional materials and the learning activities is clearly explained to the student.	3
	4.3 The instructional materials have sufficient breadth, depth, and currency for the student to learn the subject.	2
	4.4. All resources and materials used in the course are appropriately cited.	1
Learner Engagement	5.1 The learning activities promote the achievement of the stated learning objectives.	3
	5.2 Learning activities foster instructor-student, content-student, and if appropriate to the course, student-student interaction.	3
	5.3 Clear standards are set for instructor responsiveness and availability (turn-around time for email, grade posting, etc.)	2
	5.4 The requirements for student interaction are clearly articulated.	2
Course Technology	6.1 The tools and media support the learning objectives, and are appropriately chosen to deliver the content of the course.	3
	6.2 The tools and media support student engagement and guide the student to become an active learner.	3
	6.3 Navigation throughout the online components of the course is logical, consistent, and efficient.	3
	6.4 Students have ready access to the technologies required in the course.	2
	6.5 The course components are compatible with current standards for delivery modes.	1
	6.6 Instructions on how to access resources at a distance are sufficient and easy to understand.	1
	6.7 The course design takes full advantage of available tools and media.	1
Learner Support	7.1 The course instructions articulate or link to clear description of the technical support offered.	2
	7.2 Course instructions articulate or link to an explanation of how the institution's academic support system can assist the student in effectively using the resources provided.	2
	7.3 Course instructions articulate or link to an explanation of how the institution's student support services can help students reach their educational goals.	1
	7.4 Course instructions answer basic questions related to research, writing, technology, etc., or link to tutorials or other resources that provide the information.	1
Accessibility	8.1 The course incorporates ADA standards and reflect conformance with institutional policy regarding accessibility in online and hybrid courses.	3
	8.2 Course pages and course materials provide equivalent alternatives to auditory and visual content.	2
	8.3 Course pages have links that are self-describing and meaningful.	2
	8.4 The course ensures screen readability.	1

To meet Quality Matters review expectations a course must: Answer 'Yes' to all 3-point Essential Standards ***AND*** Earn 72 or more points.

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Appendix B: Community of Inquiry Survey

The following statements relate to your perceptions of "**Teaching Presence**" – the design of this course and your instructor's facilitation of discussion and direct instruction within it. Please indicate your agreement or disagreement with each statement.

#	statement	Agreement 1 = strongly disagree; 5 = strongly agree				
1	The instructor clearly communicated important course topics.	**1**	**2**	**3**	**4**	**5**
2	The instructor clearly communicated important course goals.	**1**	**2**	**3**	**4**	**5**
3	The instructor provided clear instructions on how to participate in course learning activities	**1**	**2**	**3**	**4**	**5**
4	The instructor clearly communicated important due dates/time frames for learning activities.	**1**	**2**	**3**	**4**	**5**
5	The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.	**1**	**2**	**3**	**4**	**5**
6	The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	**1**	**2**	**3**	**4**	**5**
7	The instructor helped to keep course participants engaged and participating in productive dialogue.	**1**	**2**	**3**	**4**	**5**
8	The instructor helped keep the course participants on task in a way that helped me to learn.	**1**	**2**	**3**	**4**	**5**
9	The instructor encouraged course participants to explore new concepts in this course.	**1**	**2**	**3**	**4**	**5**
10	Instructor actions reinforced the development of a sense of community among course participants	**1**	**2**	**3**	**4**	**5**
11	The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	**1**	**2**	**3**	**4**	**5**
12	The instructor provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives.	**1**	**2**	**3**	**4**	**5**
13	The instructor provided feedback in a timely fashion.	**1**	**2**	**3**	**4**	**5**

The following statements refer to your perceptions of "**Social Presence**" -- the degree to which you feel socially and emotionally connected with others in this course. Please indicate your agreement or disagreement with each statement.

#	statement	Agreement 1 = strongly disagree; 5 = strongly agree				
14	Getting to know other course participants gave me a sense of belonging in the course.	**1**	**2**	**3**	**4**	**5**
15	I was able to form distinct impressions of some course participants.	**1**	**2**	**3**	**4**	**5**
16	Online or web-based communication is an excellent medium for social interaction.	**1**	**2**	**3**	**4**	**5**
17	I felt comfortable conversing through the online medium.	**1**	**2**	**3**	**4**	**5**
18	I felt comfortable participating in the course discussions.	**1**	**2**	**3**	**4**	**5**
19	I felt comfortable interacting with other course participants.	**1**	**2**	**3**	**4**	**5**
20	I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	**1**	**2**	**3**	**4**	**5**
21	I felt that my point of view was acknowledged by other course participants.	**1**	**2**	**3**	**4**	**5**
22	Online discussions help me to develop a sense of collaboration.	**1**	**2**	**3**	**4**	**5**

The following statements relate to your perceptions of "**Cognitive Presence**" -- the extent to which you were able to develop a good understanding of course topics. Please indicate your agreement or disagreement with each statement.						
#	**statement**	**Agreement** 1 = strongly disagree; 5 = strongly agree				
23	Problems posed increased my interest in course issues.	**1**	**2**	**3**	**4**	**5**
24	Course activities piqued my curiosity.	**1**	**2**	**3**	**4**	**5**
25	I felt motivated to explore content related questions.	**1**	**2**	**3**	**4**	**5**
26	I utilized a variety of information sources to explore problems posed in this course.	**1**	**2**	**3**	**4**	**5**
27	Brainstorming and finding relevant information helped me resolve content related questions.	**1**	**2**	**3**	**4**	**5**
28	Online discussions were valuable in helping me appreciate different perspectives.	**1**	**2**	**3**	**4**	**5**
29	Combining new information helped me answer questions raised in course activities.	**1**	**2**	**3**	**4**	**5**
30	Learning activities helped me construct explanations/solutions.	**1**	**2**	**3**	**4**	**5**
31	Reflection on course content and discussions helped me understand fundamental concepts in this class.	**1**	**2**	**3**	**4**	**5**
32	I can describe ways to test and apply the knowledge created in this course.	**1**	**2**	**3**	**4**	**5**
33	I have developed solutions to course problems that can be applied in practice.	**1**	**2**	**3**	**4**	**5**
34	I can apply the knowledge created in this course to my work or other non-class related activities.	**1**	**2**	**3**	**4**	**5**

See also: http://communitiesofinquiry.com/methodology