A Comparison of Student Learning and Engagement in Quality Matters Redesigned Versus

Traditionally Designed Courses in an Online Nursing Program

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Abstract

The purpose of this one-year project is to evaluate the impact Quality Matters (QM) redesigned courses had on student learning and engagement in the RN-to-BSN program within the School of Nursing at UNC Charlotte. The QM program is a leader in quality, online education and has earned national recognition for such. It is widely used in higher education; however, nursing education research is lacking. This pilot study is a comparison of two Quality Matters redesigned courses versus two traditionally designed courses delivered 100% online. Student centered outcomes including student learning outcomes, student engagement, and quality of student online discussion forums will be measured. The data analysis will include descriptive statistics and parametric group comparisons. The results of this project will provide essential information to important stakeholders and nursing faculty regarding whether the QM program improves student centered outcomes, thus guiding next steps in online nursing education programs within UNC Charlotte and beyond. As online nursing education programs continue to explode in numbers, quality is becoming a significant key factor in online education.

Budget Request for SOTL Grant

Year ___ 2017 ___

Joint Proposal?   X   Yes ____ No

Title of Project   A Comparison of Student Learning and Engagement in Quality Matters Redesigned versus Traditionally Designed Courses in an Online Nursing Program

Duration of Project   1 year –Spring 17-December 2017

Primary Investigator(s)   Susan H. Lynch, PhD, RN, CNE & Teresa Gaston, DNP, RN, CNE

Email Address(es)   slynch16@uncc.edu & tgaston@uncc.edu

UNC Charlotte SOTL Grants Previously Received (please names of project, PIs, and dates)   NA

Allocate operating budget to Department of   School of Nursing

		Year One
Account #	Award	January to June 2017
Faculty Stipend	Transferred directly from Academic Affairs to Grantee on May 15	3850.00 (Gaston)
911250	Graduate Student Salaries	2250.00
911300	Special Pay (Faculty on UNCC payroll other than Grantee)	
915000	Student Temporary Wages	
915900	Non-student Temporary Wages	
920000	Honorarium (Individual(s) not with UNCC)	
921150	Participant Stipends	

Account #	Award	
925000	Travel - Domestic	
926000	Travel - Foreign	
928000	Communication and/or Printing	
930000	Supplies	
942000	Computing Equipment	
944000	Educational Equipment	
951000	Other Current Services	
	GRAND TOTAL	6100.00

		Year Two
Account #	**Award**	**July 2017 to June 2018**
Faculty Stipend	Transferred directly from Academic Affairs to Grantee on May 15	$ -
911250	Graduate Student Salaries	
911300	Special Pay (Faculty on UNCC payroll other than Grantee)	
915000	Student Temporary Wages	
915900	Non-student Temporary Wages	
920000	Honorarium (Individual(s) not with UNCC)	
921150	Participant Stipends	
925000	Travel - Domestic	3000.00

		(1500.00 for Lynch & 1500.00 for Gaston)
926000	Travel - Foreign	
928000	Communication and/or Printing	
930000	Supplies	
942000	Computing Equipment	
944000	Educational Equipment	
951000	Other Current Services	
	GRAND TOTAL	NA $ - 3000

Attachments:

1. Attach/provide a narrative that explains how the funds requested will be used.
2. Has funding for the project been requested from other sources? ____ Yes   __X__ No. If yes, list sources.

Budget Narrative

Stipend

Dr. Teresa Gaston holds a full time 9-month appointment and thus is not employed during the summer months; whereas, Dr. Susan Lynch holds a 12-month appointment and thus is not considered for a stipend. Dr. Gaston will use time in the summer to complete the final analysis of the project and begin manuscript and abstract preparation.

Graduate Research Assistant

Criteria for the graduate assistant will include student's familiarity with online learning, Moodle, and SPSS. The graduate assistant will be hired in the Spring 2017 and/or Summer 2017 semester. 10 hours per week for 15 weeks at a rate of $15.00 per hour. The graduate assistant will assist in the export of data, data file preparation, and analysis of data.

Travel

The goal for dissemination is to attend and present a podium/poster at The Quality Matters: 9th Annual Conference on Quality Assurance in Online Learning Conference in 2017. Registration fees for the 2016 conference are 685.00 per attendee, with additional costs for airfare and hotel. If the abstract is not accepted for presentation or abstract due prior to data analysis, a similar learning conference will be selected. Due to Dr. Lynch's 12-month appointment and inability to receive funds in the form of a stipend, we would like consideration for the budget to include funds for dissemination in either a partial or full award.

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School of Nursing
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October 15, 2016

Center for Teaching and Learning
Scholarship of Teaching and Learning
UNC Charlotte, Atkins 149C
Charlotte, NC 28223

RE: Letter of Support for the proposal titled, "A Comparison of Student Learning and Engagement in Quality Matters Redesigned and Traditionally Designed Courses in a 100% Online Nursing Program"

Dear SOTL Grant Selection Committee:

I write to offer my enthusiastic support for the 2016 Scholarship of Teaching and Learning (SOTL) proposal submitted by Dr. Susan Lynch and Dr. Teresa Gaston. This energetic team in the College of Health and Human Services, School of Nursing has a strong commitment to teaching excellence in the RN-to-BSN program to advance student centered learning. Their proposal entitled, "A Comparison of Student Learning in Quality Matters Redesigned Versus Traditionally Designed Courses in an Online Nursing Program," will compare and contrast two types of course designs aimed at strengthening the skills and learning outcomes of the target population. The evidence is clear that student-centered learning considers the students first and fosters students' independent problem-solving skills. Assessing and comparing student learning outcomes and student engagement activities is critical to the delivery of diverse teaching/learning strategies that captures a student's active learning and critical thinking skills, competencies that leverage a students' ability to better make decisions and solve real-world problems.

Specifically, Drs. Lynch and Gaston propose a project that will enhance the quality of online education in the RN-to-BSN program by increasing online student engagement and achieving successful learning outcomes. Documenting ways in which student engagement occurs through online teaching will provide invaluable knowledge for teachers as they design their courses and learner activities to promote student success. Their project will examine whether Quality Matters redesigned courses positively impacts student learning through student interactions via postings, discussion boards and student-to-student interactions. Using data analytics to evaluate the quality of teaching and learning in the online RN-to-BSN program such as looking at individual assignment

grades, final course grades and student course evaluations will assist in addressing best practices related to student learning.

As Associate Dean/Director of the School of Nursing, I believe that this project will also further the work of the School's online program offering and the College's development of a Distance Education (DE) Hub.   The DE Hub is focused on providing faculty with the latest educational technology and offering them a set of tools to enhance their teaching of online courses. The DE Hub also will provide students with a climate of enhanced learning through faculty-led and peer-to-peer instructional support.

The proposed project also will further the work of this team as they have already demonstrated a proven track record in online teaching, technology and instruction. For example, Dr. Susan Lynch has served as the RN-to-BSN Coordinator for the School of Nursing for the past 10 years, playing an instrumental role in promoting student success for the working nurse. She has taught in the program for more than 10 years, and has presented her work at national meetings, including the project titled, "Have it your way: Meeting nurses needs in implementing a 100% online RN-BSN program" at the Mosby's Faculty Development Institute in San Francisco, Ca. Dr. Gaston has taught a number of online courses for the School of Nursing for the past three years, utilizing a variety of instructional strategies to engage students, including cooperative and experiential learning via Moodle. She also has provided professional development presentations to nurses at Carolinas Healthcare System on the topic of nursing informatics. Collectively, I believe these two faculty members make a strong team with the expertise and experiences to carry out the proposed project without difficulty.

In closure, I offer my full support to this teaching/learning proposal which supports the mission of the School in preparing nursing professionals to serve as leaders, experts, partners and scholars through a wide range of innovative educational programs to meet the healthcare needs of an ever changing culturally diverse society. Let me know if you have questions about Dr. Lynch and Dr. Gaston or this application. I look forward to the continued support of the efforts of these faculty members in the School of Nursing. Many thanks in advance for your attention to this important application.

Sincerely,

Dee Baldwin, PhD, RN, FAAN
Professor, and Associate Dean/Director
College of Health and Human Services
School of Nursing
Dbaldwi5@uncc.edu

A Comparison of Student Learning and Engagement in Quality Matters Redesigned

Versus Traditionally Designed Courses in an Online Nursing Program

A. Specific Aims

Purpose

The purpose of this project is to evaluate the impact Quality Matters (QM) redesigned courses had on student learning and engagement in the RN-to-BSN program within the School of Nursing (SON) at UNC Charlotte.

Aims

This pilot study will focus on three aims. The primary aim of this study is to examine whether QM redesigned courses positively impacted student learning. The secondary aim is to examine whether QM redesigned courses positively impacted student engagement. The tertiary aim is to evaluate the quality of online learning in a 100% online RN-to-BSN program in the SON within the College of Health and Human Services.

Objectives

The main objective of this project is to collect retrospective data analytics from the Moodle Learning Management System (LMS), then evaluate whether the QM program positively impacted student learning and engagement. This will be accomplished by comparing two redesigned QM courses versus two traditionally designed courses within the online RN-to-BSN program. In addition, this may serve as an impetus for our SON as well as other schools of nursing nationally to redesign online courses, enhance quality, increase student engagement, and improve student learning outcomes by adhering to QM standards.

Research Questions

Research questions for this study include the following:

1. Is there a difference in student learning outcomes among QM redesigned courses compared to traditionally designed courses?

2. Is there a difference in student engagement among QM redesigned courses compared to traditionally designed courses?

3. Is there a difference in the quality of student discussion forums among QM redesigned courses compared to traditionally designed courses?

Rationale

The overall goal of this project is to ensure quality in teaching and learning in online education, specifically RN-to-BSN programs which are typically 100% online. Elements in online learning that are important considerations include student learning outcomes, student engagement, and quality of student online discussion forums. Students often report feelings of isolation and lower levels of engagement with online learning compared to face to face learning (Boyer et al., 2006). Therefore, student engagement is factor that contributes to student online learning. Mitchell and colleagues (2007) demonstrated that nursing students, who logged on early in the course and more frequently, demonstrated improved learning outcomes. In addition, institutions of higher education must ensure their online courses meet quality standards (Little, 2009b). In addition, nursing programs must meet specific national accreditation standards that reflect nursing education quality (CCNE, 2008).

The SON at UNC Charlotte has an established record of high quality programs. In addition to national accreditation, the National League of Nursing recently honored the SON as one of the distinguished Centers of Excellence in Nursing Education in the category of

"Enhancing Student Learning and Professional Development" (NLN, 2016). The prestigious designation was only awarded to 15 nursing schools/programs nationwide. Hence, the purpose of this project aligns well with such a prestigious designation earned by the SON.

Impact

The SON at UNC Charlotte continues to be a leader in the advancement of online distance education programs. The RN-to-BSN degree has been 100% online since 2001. RN-to-BSN programs enroll students who have completed an Associate's degree nursing program and are licensed as Registered Nurses (RNs). Results of this project will be used to inform the RN-to-BSN program to support the continuation of the redesign efforts in the 8 remaining program courses. As enrollment is projected to reach 225 students annually, the individual student impact is considerable. In addition, the SON, College of Health and Human Services, and University are committed to the assurance of quality in our current and future online programs; therefore, the results of this project have a broader impact than the RN-to-BSN program alone.

Additionally, the results of this project have the potential to create the impetus and support to redesign all of the RN-to-BSN courses adhering to the QM program. As the RN-to-BSN completion program is not the only 100% online degree program within the SON, the results of this project can create the foundation for increasing student engagement and advancing the quality of online courses in the other undergraduate, master's and doctoral programs at UNC Charlotte as well as other institutions of higher education.

B. Literature Review

Historically, nursing education has been rapidly pushed into the online arena due to many factors, including a shortage of nursing faculty, limited classroom space, lack of clinical sites,

and high percentages of qualified student applicants being turned away due to a limited number

of open seats (National League of Nursing, 2014a). In the U.S., 64% of nursing programs have

turned away qualified nursing applicants for BSN programs (NLN, 2014b), and here at UNC

Charlotte a new summer enrollment became necessary in 2016 to help decrease the number of

qualified nursing applicants being turned away (D. Evans, Associate Director, personal

communication, October 2016). In 2010, the Institute of Medicine issued the infamous *Future of*

Nursing Report, which called for a significant increase in the number of RNs in the healthcare

workforce to obtain their baccalaureate degree (BSN). The national goal is to increase the

number of BSN nurses from 50% to 80% by 2020 (IOM, 2010). Overall, RN-to-BSN enrollment

has increased by 69% since the release of this momentous report (AACN, 2015a), and

enrollment has grown annually for the past 12 years, with more than 679 programs (many of

them online) available nationwide (AACN, 2015b). Hence, creating and maintaining quality

online courses is becoming an urgent need in nursing education. Thus, online nursing education

programs continue to explode without evidence of a solid, nursing research foundation to support

this change.

Online databases including CINAHL, Academic Search Complete, and Medline were

searched for published articles containing the terms "QM" and "distance online nursing

education" with only 2 results applicable to this project. The first article by Little (2009a)

included a review of online education quality frameworks and standards including the QM

program. By using standards, this ensures quality online courses (Little, 2009a). The second

article, also by Little (2009b), conducted a pilot study utilizing the QM Rubric as one of the

frameworks for the peer review process in two online nursing courses in a RN-to-BSN program.

Of these two nursing articles, student outcomes such as engagement and learning were not

measured. In addition, online nursing courses are often created by individual faculty members based upon their own personal experience, educational preparation, and professional background. Design standards are often lacking and inconsistent in online nursing courses.

QM is a not for profit organization that is a leader in quality of online education and has earned national recognition (qualitymatters.org). The purpose of the program is to follow a QM Rubric for online course design, followed by a peer review process to earn certification of the specific online course. The QM rubric is widely used in higher education and applicable across academic disciplines (Shattuck, Zimmerman, & Adair, 2014). However, the use of QM standards is not well reported in the nursing literature. Learner engagement is the focus of standard #5 on the QM Rubric, which provides guidelines with designing the course to promote online interaction (qualitymatters.org). The primary purpose of the QM Rubric is online course design that supports student learning, rather than the quality of course content or course delivery (qualitymatters.org). In a non-nursing study by Harkness (2015), the student centered outcomes of passing grades increased and failing grades decreased using the QM program.

Student centered outcomes of learning and engagement in the online RN-to-BSN program is considered to be dependent on three major components; the theoretical foundations for learning, individual student characteristics, and the course design framework of QM. The interaction of these three components results in student learning and engagement. The model created by the authors in Fig. 1 represents the interconnectedness of these concepts.
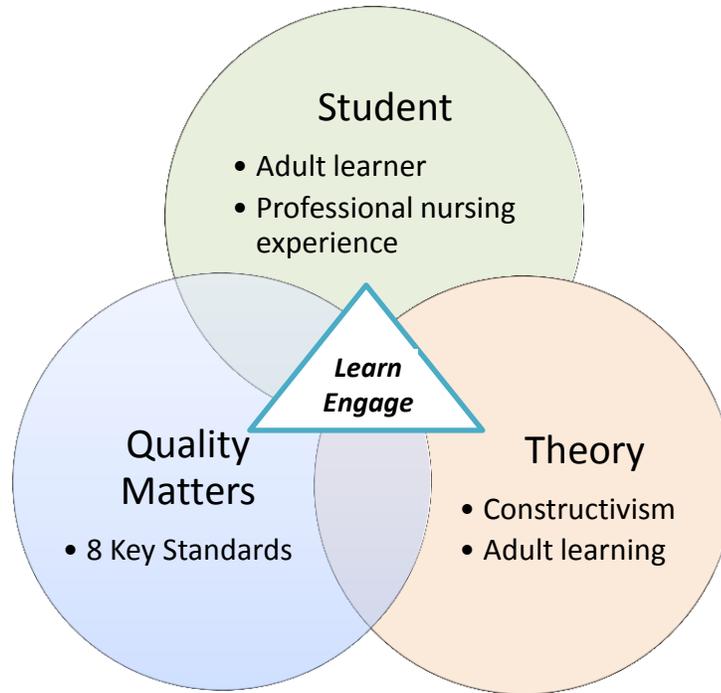
Figure 1: Model of RN-to-BSN Student Learning

The University Distance Education Office and the Center for Teaching and Learning have both embraced the concept of high quality course design and delivery of online courses and programs. A pilot program to seek QM certification for online courses began Fall 2014 with faculty training. Four faculty, two of whom were from the SON, were selected to redesign specific online courses, while learning and adhering to the QM standards.

Two nursing courses in the RN-to-BSN program were redesigned using the QM Rubric in Spring 2015 and Summer 2015: (a) NURN 4201 Information Technology: Applications in Health Care, and (b) NURN 4450 Design and Coordination of Managed Care. As of September 2016, these 2 courses out of 10 online RN-to-BSN courses have earned QM Certification in the SON. As quality is becoming a significant factor in online education, this project will provide essential information to important stakeholders and nursing faculty regarding whether the QM

program improves student centered outcomes, thus supporting next steps in online nursing
education.

C. Methods

The purpose of this project is to evaluate the impact QM redesigned courses have on
student learning and engagement in the RN-to-BSN program. This pilot study is a retrospective
data review to compare QM redesigned courses to traditionally designed courses in the RN-to-
BSN program delivered via the Moodle LMS.

The RN-to-BSN program has participated in a university-wide QM initiative by re-
designing 2 of 10 courses in a 12-month program that is offered 100% online. These two courses
account for 25% of the program. The courses that will be compared are similar in nature related
to didactic content, clinical components, and credit hours (See Table 1). The QM redesigned
courses include NURN 4201 Information Technology: Applications in Health Care and NURN
4450 Design and Coordination of Care. Both courses are currently QM certified. The
traditionally designed courses include NURN 4203 Leadership in Nursing Practice and NURN
4440 Community Health Nursing.

Table 1: Course Comparison Information

Study Course Comparisons					
QM designed courses	**Estimated Sample Size**	**Traditionally designed courses**	**Estimated Sample Size**	**Credit Hours**	**Clinical / Non Clinical**
NURN 4201	N= 280	NURN 4203	N= 280	2 credits	Non Clinical
NURN 4450	N= 210	NURN 4440	N= 210	6 credits	Clinical

QM redesigned NURN 4450 Summer 15 – offered Fall 15, Summer 16, Fall 16
QM redesigned NURN 4201 Spring 15 – offered Summer 15, Spring 16, Summer 16, Fall 2016

Measures

Student centered outcomes including student learning outcomes, student engagement, and quality of student online discussion forums will be measured. To answer research question #1 related to student learning outcomes, measures will include final course grades, individual assignment grades, and student course evaluations related to the question "*Overall, I have learned a lot in this course*." Measures used to answer research question #2 related to student engagement include the number of total posts, number of student to student interactions, number of student to faculty interactions, number of student to content views, and student course evaluations related to the question "*In this course, many methods are used to involve me in learning*." Finally, the quality of student discussions will be evaluated by scoring each student using a standard rubric that assesses content and interaction quality. The rubric originally developed by Nandi et al. (2012) will be adapted for use in this study.

D. Evaluation

Data Management

All courses will be accessed in Moodle this upcoming Spring 2017 with data exported to Excel and PDF files. Then, this data will be entered into SPSS. Data will be maintained in a password protected folder where only the two researchers and one research assistant will have access.

Data Analysis

The data analysis will include descriptive statistics and parametric group comparisons using SPSS including t-tests and up to 4 group ANOVA analyses. Power analysis using G-

Power indicates that a N = 189 is needed for all planned analyses. In the event power is not achieved, non-parametric alternatives will be used.

Research question #1 will compare student final course grades between both QM redesigned courses compared to both traditionally designed courses using descriptive statistics and 2 tailed t-tests. Then, student comparisons will be made between each QM redesigned course as described in Table 1 to determine if differences exist based on the course load. Student grades on selected individual assignments will be compared similarly. Finally, descriptive statistics will be used to compare student responses on the course evaluation related to the evaluation question, *"Overall, I have learned a lot in this course."*

Research question #2 will compare the total number of total posts, total number of student to student interactions, total number of student to faculty interactions, and total number of student to content views among the identified QM redesigned courses compared to the traditionally designed courses. Additionally, comparisons will be made from student course evaluations related to the question *"In this course, many methods are used to involve me in learning."*

Research question #3 will evaluate the quality of student discussions on an equal number of randomly selected discussion forums in each course. A standard rubric developed by Nandi, Hamilton, Chang & Balbo (2012) will be adapted and used to score the quality of the discussion on content and interaction quality as poor, satisfactory, good or excellent. Researchers have aligned a point scale of 1 to 4 so that an average rating for each participant can be calculated with higher scores indicating higher quality of discussions. Both researchers will score all posts on selected discussion forums. Interrater reliability will be established using a test forum discussion in one QM and one traditionally designed RN-to-BSN course.

E. Knowledge Dissemination

Dissemination of the results will be conducted locally through a poster presentation at the Center of Teaching and Learning sponsored event for SOTL awardees. National dissemination is planned to attend and present a podium/poster at The Quality Matters: 9th Annual Conference on Quality Assurance in Online Learning Conference in 2017. If the abstract is not accepted for presentation or abstract due prior to data analysis, a similar learning conference will be selected. Additional plans include a manuscript to describe study outcomes related to online learning in nursing programs. Journals to be considered include Nursing Education Perspectives, Journal of Nursing Education, Online Journal of Nursing Informatics, or American Journal of Distance Education.

F. Human Subjects

To ensure the protection of human subjects in this study, UNC Charlotte Institutional Review Board (IRB) approval will be obtained prior to study implementation. Consent will be requested from Faculty prior to accessing student course evaluation data for the designated courses being reviewed.

G. Extramural Funding

At this time we are not seeking extramural funding for this project.

H. Timeline

Semester	Objective
Spring 2017	• Extract data from Moodle courses. • Develop electronic rubric for discussion forum analysis. • Collect and analyze data regarding research questions.
Summer 2017	• Finalize collection and analysis of data for research questions. • Prepare abstract for submission.
Fall 2017	• Prepare presentation. • Disseminate findings.

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