Improved Student Outcomes and Faculty Workload Allocations Through Gateway Course Redesign

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Many students do not see a direct relationship of topics covered in a foundational course to clinical nursing practice. As novice learners, the value of mastering foundational concepts is not always recognized. Often, nursing students in their first semester of required nursing courses are more interested in 'hands-on' learning than mastering fundamental concepts. Undesirable subsequent outcomes include minimal student engagement in course content and student difficulty in the application of previously learned content in subsequent courses. As the nursing faculty shortage is worsening, workload of nursing faculty must be allocated to areas requiring skills and expertise of faculty. The foundational course in one institution required overload of faculty in a face-to-face work-intensive, non-uniform delivery of course content. To address the challenges of quality student learning, as well as, workload challenges escalated from the nursing faculty shortage for this program, faculty determined a course redesign should be explored. The Replacement Model was the redesign approach chosen for this gateway course in an undergraduate baccalaureate program. The Replacement Model reduces the number of face-to-face class meetings with online and interactive learning activities and makes significant changes in remaining face-to-face class meetings. Elements incorporated into the Replacement Model for redesign included active learning, computer-based learning resources, mastery learning in module format, and alternative staffing with undergraduate learning assistants (senior nursing students) who participated in hands-on class activities, scoring of student assignments, and leading supplemental instruction sessions. With greater flexibility in attending to course activities and appropriately matching student learning outcomes with various learning strategies, course faculty anticipated the course to be delivered more efficiently and students would be more actively engaged in their learning.

After IRB approval was attained, a pilot study was conducted. Two sections of 24 students (48 in total) received course content utilizing traditional face-to-face class meetings three times per week and were evaluated with three exams and one paper. Fifty students in one redesigned section received course content utilizing a hybrid format. This section met face-to-face a total of 11 times throughout the semester. Content modules were developed through a course management system and enhanced through video-capture technology for delivery of faculty–developed supplemental highlights of content, study guides, discussions, journals, exercises, Wiki tools for collaborative work, case studies, and quizzes. The three exams in each course were identical. The same faculty taught in all three sections.

Evaluation of the pilot study was completed in several ways. Course evaluations helped capture subjective student comments while interviews with undergraduate learning assistants helped identify strengths of alternative staffing for specific course activities. All exam and final course grades for the traditional and hybrid sections were compared at the conclusion of the semester.
using t-tests for equality of means. There was no statistical difference found. Student testing of American Psychological Association (APA) citation and dosage calculation content were measured at the end of the pilot semester and at the end of the semester prior to student graduation. This was done in an effort to evaluate if instructional delivery format impacted student retention of curricular content more specific to this foundational course. Longitudinal data was grouped into original hybrid versus face-to-face sections. T-test for equality of means indicated there was no statistical difference in longitudinal retention of these course contexts.

In summary, there were no significant differences in student attainment of course objectives. The use of undergraduate learning assistants as a means for alternative staffing proved effective and allowed senior students an opportunity to explore their interests in a career in academia. Students were actively engaged in their learning and use of hybrid delivery of content for a foundational 'gateway' nursing course was determined to be successful. Finally, use of this redesign model resulted in a 16.5% reduction in staffing costs that allowed for greater faculty workload to be utilized in applied settings.

Faculty evaluation of this course redesign pilot lead to the addition of three scheduled face-to-face class meetings for subsequent course offerings (care planning application and communication scenarios) and the elimination of two discussion questions. Supplemental instruction sessions were changed to Friday afternoons when students generally do not have scheduled classes. Direct changes driven from student feedback includes the development of an orientation module and resource manual for future undergraduate learning assistants and concrete assignment of point percentages for all student learning activities rather then use of satisfactory/unsatisfactory ratings.

This course redesign has been fully implemented and there are now two hybrid sections for each course offering.

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Abstract Summary:

Learn how use of a redesign replacement model in an introductory gateway course increased active student learning, provided opportunity for senior nursing students interested in academia, and allowed for desired reallocation of faculty workload into applied courses while improving academic outcomes.

Content Outline:

I. Introduction: To address the challenges of quality student learning and control of rising costs of higher education, many institutions have adopted the redesign of courses based on principles established by the National Center for Academic Transformation (NCAT). Rationale for redesign of an undergraduate baccalaureate level gateway course in nursing was identified and a proposal for course redesign was developed, supported by the Carnegie Course Redesign Initiative, implemented, and evaluated.

II. Body

A. Rationale for course redesign

1. Students undervalue the significance of this foundational course and often do not see a direct relationship of topics covered to clinical nursing practice. As novice learners, the value of mastering foundational concepts is not always recognized. Undesirable outcomes include minimal student engagement in course content and student difficulty in the application of previously learned content in subsequent courses.

2. As the nursing faculty shortage is worsening, workload of nursing faculty must be allocated to areas requiring skills and expertise of faculty. This course required overload of faculty in a non-uniform delivery of course content.

B. Redesign Components
1. The Replacement Model was the redesign approach chosen for the pilot study. This model reduces the number of face-to-face class meetings with online and interactive learning activities and makes significant changes in remaining face-to-face class meetings.

2. Elements incorporated into the Replacement Model included active learning, computer-based learning resources, mastery learning in module format, and alternative staffing (undergraduate learning assistants).

C. Implementation (IRB approved)

1. Pilot Semester combined two of the four traditional course sections into one redesigned (hybrid) section while the other two sections were offered in the traditional format.

2. Students in the redesigned section engaged in course exercises, activities, supplemental instruction and use of undergraduate learning assistants. Students met an average of one time per week throughout the semester. The same faculty taught all sections of the course.

D. Evaluation (IRB approved)

1. Course evaluations, exam grade comparisons, and final course grade comparisons were evaluated between hybrid and face-to-face sections at the end of the pilot semester.

2. APA and dosage calculation content were measured at the end of the pilot semester and at the end of the semester prior to student graduation. Analysis of data was grouped by original hybrid and face-to-face sections. T-tests for equality of means was used to determine if delivery method of foundational course content impacted retention of content specific to this foundational course.

3. Qualitative data collection included experiences of undergraduate learning assistants in this new role.

III. Conclusion: Exam results and final course grades were not statistically different between the redesigned and traditional sections of this foundational course. There were no significant differences in student retention of content specific to this foundational gateway course. Use of undergraduate learning assistants as alternative staffing proved effective. Use of this redesign model resulted in a 16.5% reduction in staffing costs that allowed for greater faculty workload to be utilized in applied settings.

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