

Assessment of Critical Thinking in Undergraduate Nursing

Overview

The rapid changes in healthcare and growing complexity of nursing requires that students be proficient in critical thinking in order to provide safe, quality care for increasingly acute and complicated problems in a variety of settings. Nurses are frequently called upon to make immediate life and death decisions, and their ability to do so is dependent upon their ability to think critically and problem solve. Although these skills are called by various names in the profession, including “the nursing process” and “clinical reasoning”, they are modeled on the scientific method and entail goal directed thinking using judgments based on evidence (Frye, Alfred, & Campbell, 2000). Although the ability to solve problems and make decisions has been identified by employers as the most important competency for beginning nurses, it is also the one that was least likely to be observed (King as cited in Shell, 1998).

Both national accrediting bodies for schools of nursing have recognized the importance of addressing critical thinking by the development of conscious, deliberate, and sustained activity throughout a nursing program. Many of the accepted teaching strategies for the development of critical thinking skills require a large commitment of class and clinical hours and faculty time. One effective strategy for teaching clinical reasoning is problem-based learning {PBL} (White, Amos, Kouzekanani, 1999).

What we did & why we did it

Since traditional PBL taught in a seminar format is extremely time-consuming for faculty, this format was impossible to implement due to the current severe shortage of nursing faculty. Therefore, this project used a series of case studies delivered in a large lecture discussion format and two online case studies to motivate students to construct knowledge by searching for, critically analyzing, and applying information to solve authentic problems. The case studies also serve as a medium for faculty-student dialogue, provide a bridge to experience and practical application by the student, and increase the faculty’s understanding of the student’s knowledge and abilities.

In order to measure critical thinking skills, this project used Assessment Technologies Institute’s (ATI) Critical Thinking Examination in a select group of students. The assessment was administered upon admission to and exit from the prelicensure nursing program.

This study addressed the following research questions:

1. Is there a significant difference between the critical thinking scores of nursing students as measured by Assessment Technologies Institute’s Critical Thinking Examination when administered upon admission and during the last semester of the program?

2. Is there a correlation between critical thinking scores on Assessment Technologies Institute's Critical Thinking Examination and achievement on the RN Comprehensive Predictor Examination?

Methodology:

I. ATI Critical Thinking Examinations

Scores on the ATI Critical Thinking Entrance Examination were compared with those of the Critical Thinking Exit Examination on an individual basis to assess growth in each student's ability to use the phases of the critical thinking process.

II. DxR Nursing Web-based Critical Thinking Cases

Overall case performance scores and scores for each major critical thinking section and subsection for both cases were reviewed. Individual student performance scores were compared with group performance scores and scores from the first case were compared with those of the second. However, so few students completed these case studies, that the sample was too small to be meaningful (see below).

III. RN Comprehensive Predictor Examination

Our previous research found a very strong positive correlation between National Council Licensure Examination (NCLEX) success and ATI RN Comprehensive Predictor Exam achievement. Therefore, since all NCLEX scores were not available before the end of the study, the RN Comprehensive Predictor Examination served as a proxy. Scores on the ATI Critical Thinking Exit Exam were compared with RN Comprehensive Predictor Exam achievement.

Findings

Sixty Entry Level Master's students took the Critical Thinking Examination on admission to the prelicensure nursing program. Scores ranged from 10% to 90% with a mean of 55%. During the following 18 months, seven students dropped out of the program, two decelerated, and three did not take the exit exam. At the end of the prelicensure program, 48 students completed the exam. The range of scores was from 40% to 97.5% with a mean score of 75%. The change in the scores of individual students ranged from a decrease of 12.5% to an increase of 75% with a mean change of +18%. Only six students evidenced a decrease in their final score: 5 with a decrease of 2.5% (which was not statistically significant) and one with a decline of 12.5%. Using a paired samples t test, the change in the entrance and exit scores was significant with $p = .000$.

The results of the Critical Thinking exit examination were correlated to achievement on the RN Comprehensive Predictor exam. Forty-five students completed the RN Comprehensive exam. Scores ranged from 42.2% to 78.3% with a mean of 66.2%. The correlation between the two exams was .521 with $p = .000$.

The results of the exit examination were then correlated to NCLEX passage. At the time of this report, 42 students had taken the licensure examination. Thirty-six were successful and 6 had failed. The mean score on the Exit Critical Thinking Exam of

those passing the NCLEX was 76%, while that of those who were unsuccessful was 69%. This difference was not significant with $p = .24$.

Use of findings

In general, we found that critical thinking skills improved during the prelicensure nursing program. However, the program is undergoing a curriculum revision and plans to incorporate more case studies and simulation into all medicine courses to enhance problem-solving skills. We have already instituted an optional problem based learning NCLEX preparation course, which is very popular with students at all levels of the program. Since its inception, we have seen a significant rise in the rate of NCLEX passage.

Problems

Originally, we had planned to also measure critical thinking through the use of two DxR Nursing Web-based Critical Thinking Cases by comparing the critical thinking sections of the cases, one of which would be done early in the program and the second at the end. However, the students were very resistant to doing the cases, and no credit was given for completing them. Only 25 students even attempted the first case study, and none of them completed it. The results were even more abysmal for the second online case. Therefore, data from this source could not be analyzed. Although faculty found the cases easy to navigate, students found the technology difficult to master. It was hoped that these cases would enhance critical thinking and that more cases could be obtained and integrated throughout the program, thus freeing up faculty time from doing case studies in class or grading written case studies. Therefore, at this point, the PBL NCLEX preparation course seems a viable and very acceptable alternative.

References

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