ABSTRACT

In this study, we compared two teaching strategies: lecture notes combined with structured group discussion versus lecture only. We sought to help nurse educators identify the most effective teaching strategies for nursing students. We compared the examination scores of two groups of students who took a 3-credit medical-surgical nursing course. The control group (N = 88) received lecture only as the teaching method, whereas the experimental group (N = 81) received word-processed lecture notes along with structured group discussion. A one-tailed, independent sample t test was used to compare the mean examination scores of the two groups. The chi-square test was used to determine whether a significant difference existed between the course-passing rates of the two groups.

The results showed a statistically significant difference between the means of the experimental and control groups. However, no statistically significant difference existed between the course-passing rate of students in the experimental group and that of students in the control group. These results provide strong support for the use of lecture notes in conjunction with structured group discussion as a teaching strategy. We recommend replicating this study using samples from other courses, and conducting further studies that include students’ NCLEX-RN® results as a third dependent variable.

Students’ success on the National Council Licensing Examination for Registered Nurses (NCLEX-RN®) is paramount for schools of nursing, as it not only facilitates graduates’ entry into nursing practice, but also serves as a major criterion of the National League of Nursing Accrediting Commission for evaluating the effectiveness of nursing programs. Therefore, low NCLEX-RN pass rates can mean loss of accreditation for a nursing program (Frierson, Malone, & Shelton, 1993; Leners, Beardslee, & Peters, 1996).

A major challenge for schools of nursing is to design and deliver instruction that will be most effective in helping students pass the NCLEX-RN. To help nurse educators identify the most effective teaching strategies for nursing students, we compared two teaching strategies: lecture notes combined with structured group discussion versus lecture only. Two research questions were asked:

- Do students who receive lecture notes and discussion in a senior-level medical-surgical nursing course achieve higher examination scores than students who receive lecture only?
- Do students who receive lecture notes and discussion in a senior-level medical-surgical nursing course achieve a higher course-passing rate than students who receive lecture only?

Background

Predictors of Success on the NCLEX-RN

Nursing authors assert that critical thinking skills, a major outcome for nursing education, are vital to passing the NCLEX-RN (Alfaro-LeFevre, 1995; American Association of Colleges of Nursing, 1998; Haffer & Raingruber, 1998). In fact, the National League for Nursing (1991) proposed that accredited baccalaureate nursing programs design measures to promote critical thinking skills that “reflect students’ skills in reasoning, analysis, research or decision making relevant to the discipline of nursing” (p. 26).

A variety of studies have attempted to identify predictors of success on the NCLEX-RN and found that grade point average (GPA) in medical-surgical nursing courses, in particular, was one of the most accurate predictors of success (Heupel, 1994; McKinney, Small, O’Dell, & Coonrod, 1988; Waterhouse, Carroll, & Beeman 1993). Arathuzik and Aber (1998) found that internal factors (e.g., stress, anxiety, poor study habits) and external factors (e.g., finances, work and family demands) also correlate with nursing course GPA and NCLEX-RN results. Because of the identified positive rela-
In a discourse on the need for curriculum change in nursing, Allen (1995) commented: 

When I walk by a lecture hall and glimpse a sea of passive faces writing down information from an overhead projector, I am literally repulsed. (p. 314)

Allen (1990) called for a paradigm shift from the lecture model to one that uses a variety of approaches focused on stimulating students to think critically and, more specifically, to analyze and synthesize information. In contrast, Parker (1993) supported the use of lecture and posited that those who vilify lectures are really denigrating bad lectures. Nonetheless, Parker conceded that lecture is not the best teaching method when the goal is to foster communication and critical thinking skills in students. In those instances, Parker (1993) suggests the use of other methods, such as discussion and cooperative learning.

Discussion. Educators are calling for a shift from teaching methods that promote passive learning to those that encourage active learning and include students in the educational process (Ebert-May et al., 1997). McKeachie (1994) recommended that several teaching strategies, including discussion and small group activities, be used to appeal to a variety of learning styles.

Traditional Lecture. Traditional lecture is one of the oldest and by far the most widely used methods of teaching (McKeachie, 1994; Shakarian, 1995). However, some authors believe lecturing is ineffective as an instructional method. These authors assert that lecturing creates a passive, non-thinking, information-receiving role, whereby students are exposed to information but are not given the opportunity to process it (Alspach, 1995; Kemp et al., 1994; McKeachie, 1994; Shakarian, 1995).

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Discussion. Educators are calling for a shift from teaching methods that promote passive learning to those that encourage active learning and include students in the educational process (Ebert-May et al., 1997). To be actively involved with a course, students must read, write, discuss, or engage in problem solving. They must also participate in high-order thinking exercises, such as analysis, synthesis, and evaluation (Bonwell & Eison, 1991). According to Bonwell and Eison (1991), in-class discussion is one of the most effective strategies for promoting active learning.

The discussion method provides learners with an opportunity to critically think about the topic being discussed, which facilitates learning at higher intellectual levels (e.g., analysis, synthesis, evaluation) (Alspach, 1995; Kemp et al., 1994). Indeed, Bierzychudek and Reiness (1992) claimed that applying the discussion format to a biology course offered two advantages over the lecture-only format. First, it enabled faculty to monitor students’ understanding of materials, and second, it allowed students to pursue topics of interest in greater depth.

Lecture Notes. Some educators discourage the use of detailed notes and recommend using structured notes that require students to fill in content, complete diagrams, write replies to questions, solve problems, and apply concepts (Kemp et al., 1994; McKeachie, 1994). As a means of solving some of the problems associated with lecture, Privateer and MacCrate (1992) developed and implemented a project that used a hypertext, self-paced learning system that provided students with lecture notes for the entire semester. According to the authors:

Having lecture notes for the entire semester on disks relieves two burdens. First, the instructor can spend time in class presenting additional data, drawing analytical connections and synthesizing information with the students. Second, students can spend time listening, thinking and applying ideas, freed from their routine role as transcribers. This allows them to actually assimilate and integrate information.

(Priavateer & MacCrate, 1992, p. 77)

Method

Procedure

In this study, we compared the examination scores of two groups of students who took a 3-credit medical-surgical nursing course. The control group (N = 88) consisted of students who received lecture only as the teaching method for the course. With this teaching method, used throughout the entire course, the instructor stood in front of the class and, with the aid of overhead projector transparencies, orally delivered the content. Students were required to listen and write notes of information they perceived as important. The last 15 minutes of each class session were allocated to answering students’ questions.
The experimental group (N = 81) consisted of students who received (1 week in advance, for the entire semester) word-processed lecture notes for the upcoming class. Students were instructed to review the materials in advance and note any questions they had, and to be prepared to discuss the topic at the next class session. They were also told to use the lecture notes as the major source of information and use the textbook as a reference source. During class sessions, the discussion format was used as the teaching method. During the first 15 minutes of each class, the instructor highlighted information from the previous class and answered questions to clarify the provided lecture notes.

- Students formed groups of 6 to 8 members and spent the next 60 minutes discussing the current week’s topic. Each group was responsible for formulating at least three nursing diagnoses related to the condition being discussed, and developing a plan, with rationale, for intervention and evaluation, to present to the class. Groups were encouraged to develop as many diagnoses as possible, as no two groups were allowed to present the same diagnosis. During the group discussion, the instructor offered support by moving between groups, listening, and asking questions when necessary.

- After a 10-minute break, the students groups assembled as a single unit. Each group was allotted 15 minutes to make a presentation before the class, covering the disease/condition and their possible nursing diagnoses and evidenced-based plan for intervention and evaluation. The rest of the class was encouraged to participate by asking questions and offering suggestions during the presentations.

**Data Analysis**

The examination scores for this study were the results of three multiple-choice examination administered at predetermined times during the semester. An average score of ≤70 was required to pass the course. Examinations were analyzed for content validity by experts who taught the course and through computer-generated item analysis. Data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 10. The one-tailed, independent sample t test was used to compare the mean examination scores of the two groups. The chi-square test was used to determine whether a significant difference existed between the course-passing rates of the two groups.

Although some authors... discourage the use of comprehensive lecture notes, claiming that they promote relaxation and passivity in students, the findings of this study dispute these claims.

**Results**

A total of 169 students participated in this study. The experimental group consisted of 81 (47.93%) students who received lecture notes and structured group discussion. The mean examination score of students in the experimental group was 80.6 (SD = 7.34). Ninety-three percent of the students (N = 75) in the experimental group passed the course, 7% (N = 6) failed.

The control group consisted of 88 (52.07%) students who received lecture only. The mean examination score of students in the control group was 77.68 (SD = 7.23). Eighty-three percent of students (N = 73) in the control group passed the course, and 17% (N = 15) failed.

A one-tailed t test for independent samples was performed to test for the differences between the mean examination scores of the experimental and control groups. A statistically significant difference was found between the mean examination scores of the experimental and control groups: calculated t (167) = 2.596, p < 0.010.

The chi-square test was used to test the null hypothesis that no significant difference existed between the course-passing rate of students in each group. These computations indicated that, at α 0.05, no statistically significant difference was found between the course-passing rate of students in the experimental group and that of students in the control group: χ² (1, N = 169) = 3.600, p = 0.058.

**Discussion and Recommendations**

The literature reinforces nursing course scores as accurate predictors of NCLEX-RN results (Heupel, 1994; McKinney et al., 1988; Waterhouse et al., 1993). The findings of this study indicate that the examination scores of students who received lecture notes and structured group discussion as a teaching method were significantly higher than those of students who received lecture only. In addition, when the teaching method involved lecture notes and discussion, fewer students failed the course, although this finding was not statistically significant. These findings support the assertion made by many educators that traditional lecture is not the most effective teaching method to promote critical thinking and problem-solving skills, which are necessary for passing nursing courses and the NCLEX-RN (Allen, 1990; Parker, 1993).

Although some authors (Kemp et al., 1994; McKeachie, 1994) discourage the use of comprehensive lecture notes, claiming that they promote relaxation and passivity in students, the findings of this study dispute these claims. This may be explained by the findings of Arathuzik and Aber (1998) that internal and external factors (e.g., anxiety, stress) can affect students’ performance in nursing theory courses and on the NCLEX-RN. It is possible that the lecture notes in conjunction with the opportunity to discuss and clarify concepts...
in class were instrumental in alleviating stress and anxiety in the study participants.

This study can serve as a benchmark for identifying other effective teaching strategies for nursing students. We recommend replicating this study using samples from other courses and conducting further studies that include students’ NCLEX-RN results as a third dependent variable. This is appropriate because passing the NCLEX-RN is an important planned outcome of baccalaureate nursing education.

Limitations

Because of the study design and the absence of random participant selection, a possible threat to internal validity, the possibility exists that the groups were not truly equivalent. Therefore, it cannot be unequivocally stated that the improvement in the examination scores and course-passing rate of students in the experimental group were exclusively due to the use of lecture notes and structured group discussion as the teaching method. However, the results of this study provide strong support for the use of lecture notes in conjunction with discussion as a teaching strategy.

The results of this study were also specific to students who took a medical-surgical nursing course in an urban college of nursing, and cannot be generalized to students in other courses or in other baccalaureate programs.

Conclusion

Nurse educators must adapt measures that most effectively meet the educational needs of students. This will only be possible if systematic research serves as the basis for studying and comparing various teaching strategies.

References
