Learning packets in nursing education: Reviving the past

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S U M M A R Y

Learning packets gained popularity in nursing education in the 1960's. Recently, they have been cited as strategies for distance learning. The aim of this project was to integrate Topic Focused Learning Packets as a complementary teaching strategy for presentation of new content to large classes of undergraduate nursing students. In addition to reducing in-class content presentation time, goals included: fostering critical thinking, actively engaging the student, and providing opportunities for team-based interaction. Rationale, design process and packets will be described. The learning packet was viewed positively by the students and faculty. Among 134 students, 119 strongly agreed or agreed that the learning packet was effective in increasing their understanding of the content and achieving the course objectives.

Introduction

This article describes the implementation and evaluation of an alternative teaching strategy used in an entry-level nursing practice course. Two nursing faculty who teach at a large urban university sought an effective alternative teaching strategy to use in Foundations of Nursing, a two course sequence, that would efficiently and effectively expand teaching capacity through non-traditional teaching while remaining within current resources strategies. The Topic Focused Learning Packet was the technique selected to present new content to this large class of undergraduate nursing students. Alternative teaching strategies were sought for several reasons. The Foundations of Nursing courses are usually the first nursing courses within the nursing curriculum and serve to introduce the student to concepts, content, behaviors, and procedures that provide the foundation for nursing practice. Recognizing that students vary in their learning styles, levels of competence and levels of motivation, a strategy was sought that could elicit participation, questions, and attention in a large lecture hall. Also, the course’s curricular placement meant that this was one of the first courses where students began the socialization process to nursing and into the College of Nursing. Instructors therefore sought a way to make large classes feel smaller.

Background

The current nursing shortage in both the United States and worldwide is expected to not only persist but intensify. Estimates by the US Bureau of Labor Statistics are that one million new and replacement nurses will be needed in the US by 2012. Reasons for this shortage are a complex mix of supply and demand and include continued population growth and an aging population. The shortage intensifies the need to promote excellence in nursing education and expand nursing workforce to meet the increased global health care demands. Nursing colleges and universities across the country have been mandated to expand enrollment levels to meet the rising demand for nursing care. However, there are many obstacles facing educational institutions attempting to expand nursing enrollment. As student enrollments have climbed, faculty numbers have decreased. Also, generational differences between students and faculty add to the difficulties of increasing nursing enrollments. The aforementioned factors have resulted in the need for new methods to educate large numbers of nursing students, maximize existing resources, and integrate new teaching strategies that are hopefully more efficient than the methods currently used. Nurse educators are seeking strategies that build on the learning needs of today’s students to better engage them in the learning process and foster essential critical thinking skills (O'Shea, 2003).

In the recent decades, there has been an instructional paradigm shift in nursing education away from teacher-centered instruction and toward student-centered learning. Teacher-centered lecture has been the most widely used strategy in nursing in the past. It has advantages of being cost-effective and presents large amounts of new material to large groups. It does not however engage the student in problem solving nor does it allow for individual learning styles or knowledge needs (Russell et al., 2007). Alternatively, the mission of student-centered learning is to provide powerful learning environments in which students will learn how to learn, develop skills of self-directed learning (SDL), and become a life-long learner (Weimer, 2002).

Nurses work in a dynamic and complex health care environment. Knowledge and technologies change rapidly. Self-directed learning is considered an essential skill for nurses to keep pace with the demands of knowledge and technology change in today's healthcare environment. Self-directed learning refers to a process
in which individuals take initiatives in learning process – identifying learning needs and goals, pursuing learning resources, implementing learning strategies, and evaluating learning outcomes (Nolan and Nolan, 1997a). The use of self-directed learning principles in nursing education has been viewed as a way to: involve students in their own learning, encourage critical thinking, expose students to new content, and be consistent with principles of adult learning (Levett-Jones, 2005; O’Shea, 2003).

In searching for viable and cost-effective alternative methods of teaching, self-learning packets, alternatively known as self-learning modules or self-learning packets, have gained popularity in nursing education since 1960’s. The self-learning packet refers to a self-contained packet that contains necessary information that allows learners to learn a particular topic (Marzahl, 2001). The self-learning packet is one form of self-learning methods and integrates adult learning principles (Herrick et al., 1998; Weinberg and Stone-Griffith, 1992). Traditional self-learning packet may contain several essential components: (1) learning objectives which allow learners to recognize the purpose of learning, (2) pre-test which helps learners to identify areas of knowledge and skills needed and to be motivated to learn by curiosity about the new knowledge, (3) topic-focused contents which offer learners the access to materials and resources during the learning activity, and (4) post-test which exam learners’ mastery of the contents and motivate them to learn by growth and accomplishment (Herrick et al., 1998; Suggs et al., 1998; Weinberg and Stone-Griffith, 1992). The self-learning packet or package has been used in nursing and medical education or continuing education programs (Weinberg and Stone-Griffith, 1992; Graham et al., 1998; Kang, 2002), and its effectiveness has been examined. The findings demonstrated that the self-directed learning packet or module was effective in facilitating learning among staff nurses or medicine residents (Golden, 1997; Kang, 2002; Yeezel and Center, 2004). Researchers suggested that self-learning packages could be used as a viable alternative or adjunct to traditional education programs (Gould and Chamberlain, 1997; Miller, 1989; Nikolajski, 1992; Suggs et al., 1998).

While the self-learning packet has been designed based on adult learning principles and recognized as an effective method to educate nursing staff to develop new skills and work more effectively, the two nursing faculty who teach Foundations of Nursing was curious whether the use of the self-learning packet would be an effective strategy to teach nursing students of the Millennial generation in a traditional baccalaureate nursing program. Some nursing educators or researchers stated that SDL may not be necessarily good for every individual learner and universal application of SDL in nursing education without considering students’ different learning style preferences is not recommended (Levett-Jones, 2005; Nolan and Nolan, 1997a,b). Students may have different attitudes towards and perspectives of SDL. A number of nursing students are more comfortable with traditional education means and prefer teacher-centered lectures because of past learning experiences (Levett-Jones, 2005; Regan, 2003). Some data support that new nursing students who are at their early stage of training prefer that the teacher take the lead, give guidance, and make decisions (Nolan and Nolan, 1997a; Regan, 2003). Transitioning to a self-directed approach prematurely may result in frustration and anxiety related to individual responsibility for mastery of content (Levett-Jones, 2005). Therefore, the aims of this project were to integrate Topic Focused Learning Packets as a complementary teaching strategy for presentation of new content to large classes of undergraduate nursing students in an entry-level two course sequence and to evaluate the education outcomes.

Theoretical framework

Nolan and Nolan (1997b) presented a cooperative model for nursing education. Nolan and Nolan (1997a) indicated that, in an active and participatory teaching/learning environment, the teacher and student share responsibility and the teacher has more control over the course. In the cooperative model, both the teacher and student give inputs to the course, student group cohesiveness is encouraged, and the student is evaluated for specific knowledge and skills. Nolan and Nolan (1997b) supported that nursing education methods are not dichotomous, rather they reflect a continuum. On one end of the continuum is teacher-directed approach and the other end student-directed approach. During the early stage of training, a teacher-directed approach is more relevant. As students go through their trainings, students are taught the skills of self-direction and will be more prepared for adapting SDL.

The context for use of learning packet

Two faculty coordinators had been assigned to Foundations of Nursing Practices I and II. The course had a reputation among students as ridged, unreasonable, stressful, and challenging for both students and faculty. The goal of the faculty selection was to pair one faculty with multiple years of teaching experience and one newer to the nurse educator role. It was hoped that the mentoring process would give support for the newer faculty and that the generation difference might result in creative approaches to the course and more acceptance by the students.

The course consisted of three hours of lecture and six hours of laboratory practice each week. Limited faculty and increasing student numbers resulted in a class size of approximately 140. Didactic classes were presented to the entire 140 students and labs were at an 8–10:1 ratio in simulated patient care experiences. For their first offering of the course sequence, the pair faculty taught the didactic portion of the course in the traditional manner, primarily lecture, power point and in-class question/response. Building on that experience, on student feedback and on a commitment to facilitate learning for the teaching of the course a second year, the faculty pair sought to include strategies based on sound educational principles that could be used to reach multiple educational goals. These goals included presenting content while reducing in-class lecture time, fostering critical thinking, actively engaging the student and providing opportunities for team-based interaction. While there multiple self-learning strategies available, using faculty experience and the Nolan and Nolan framework, the Topic Focused Learning Packet was selected as the strategy of choice.

Method

Description of learning packets

A set of topic based student-directed learning packets were developed by the two faculty coordinators selected to teach the course. Each learning packet was developed focusing on the contents of one chapter, such as “Vital Signs”, “Hygiene”, “Urinary Elimination”, and so forth. The learning packets were developed using different references such as the textbook, instructor manual, or publisher online resources. Some application questions were developed based on the faculty’s clinical experiences.

The learning packet developed in this project did not contain topic-focused contents because the contents have been presented in the lecture. The learning packet included learning objectives and evaluation questions (see Appendix A). The learning packet had a mix of questions to meet the learning objectives and reflect different levels of the cognitive domain of learning, including completion, multiple choices, true/false, case studies, and reflective response to research articles related to the topic. For example, in the Urinary Elimination chapter, a learning objective requests the student to be able to describe the physiology of the urinary system and the
processes of urine formation and elimination. Completion type questions were used to meet the objective. An objective requests the student to be able to accurately record patients’ intake and output. A scenario question with the information on the patient’s diet intake and urinary excretions was used. The student was asked to calculate intake and output and make comments on the calculations. Multiple choice questions were used to examine the clinical skill objective and asked the student to identify the appropriate procedure for collecting various types of urine specimens. A case study was used to meet the learning objective of discussing nursing care appropriate for clients who have urinary elimination problems. In addition, the learning packets included references and resources for locating specific content.

**Implementation of learning packets**

The learning packets were posted to Blackboard (a web-based course-management system) and students had access to the packets before the lecture. Students could use the learning packets either to preview new topics or to review contents covered in the lecture. The main concepts of the chapter were first presented and discussed in the lecture and classroom activities. Outside the classroom, students in the pre-assigned clinical group (8 to 10 students per group) worked to complete the learning packet and then turned in the completed learning packet as a group project. Groups were allowed to work in their preferred ways. Some groups asked the group members to complete the whole packet independently and then bring their answers for group discussion. Some groups divided up the questions and group members were assigned for different questions. For each learning packet, group leaders were identified to be in charge of group work and oversee group member evaluations.

**Assessment of learning outcomes**

In order to gather exploratory descriptive information which could guide future research and gauge student and faculty response to this teaching method, questions specific to the learning packets were included in the existing course-end evaluation. The clinical faculty members were asked to give feedback on the use of the learning packet. A multiple analysis of variance (MANOVA) was conducted to compare the test scores between students who did not use the learning packets in previous academic years (Group I) and who did use the learning packets in the current year (Group II) in the Foundation course sequence.

**Ethical consideration**

The approval from the Institutional Review Board (IRB) was not pursued because the focus of this project was an evaluation of academic development rather than a research study. After teaching the Foundation course for the first year and based on students’ course evaluation, the faculty decided to explore an alternative teaching strategy to promote teaching and learning efficiency. The data presented in this article are parts of the course evaluation which was completely anonymously. The students were informed that the education outcomes of the use of the learning packets would be evaluated.

**Outcomes**

**Student’s evaluation**

Completed evaluations were received from 134 of 140 students in the Foundation I class. Among 134 students, 119 (89%) strongly agreed or agreed that the learning packet was effective in increasing their understanding of the content and achieving the course objectives. Students indicated that the use of the learning packet facilitated and encouraged reading, and helped them study the materials and focus on the important aspects of content and key concepts. Students also stated that the packet presented the information in a way different from PowerPoint and lecture formats and reinforced the content from lecture and readings. The NCLEX-style multiple choice questions included in the packets helped students prepare for quizzes and exams. Case studies in the learning packet helped students apply the knowledge and skills they learned to practical scenarios and facilitate critical thinking. Some students noted that the assigned group work activities provided them a good chance to listen to ideas and views different from their own.

Few unfavorable comments were received from students. If concerns existed, they centered in two primary areas: group size and group leader responsibilities. One concern heard was that students did not like the group work because individual grades could be influenced by other group members’ performances. Some students would have preferred to have a smaller group because the larger group made interaction difficult. Few students indicated that the use of the learning packet made more work for them or was a burden on group leader(s). Some students expressed concerns regarding the group leader position. They stated that it would have been beneficial to have defined guidelines for responsibilities and expectations of group leaders.

**Faculty feedback**

In addition to the two didactic faculties, the students also received instruction and guidance from clinical faculty outside of the classroom. This group of 12–16 clinical faculty included individuals on both clinical and tenure tracks and represented a variety of professional experiences and perspectives. All faculties viewed the learning packet very positively. They noticed that students were very much involved in the learning process and had active discussions about the questions in the learning packets. Some students discussed the questions with their clinical faculty. This gave the opportunity for small group discussion with faculty input. This tied the learning packet content and lectures material with simulated clinical practices. The faculty also indicated that the learning packet helped students with preparation for the laboratory components.

**Grade comparison**

Table 1 displays student characteristics of the two groups. The average age was 23.0 years for the students who did not use learning packets (Group I) and 22.7 years for the students who used learning packets (Group II). Ten percent of students in Group I were male and 13% in Group II. Eighty percent of students in the Group I were non-Hispanic white and 85% in Group II. No significant baseline differences were found between the two groups in the scores of the American College Test (ACT), SAT reasoning test, and pre-nursing grade point average (GPA).

The quiz and exam grades in Foundation sequence courses of both groups were examined by comparing the means of test grades and analyzing the data by MANOVA. Students who used learning packets as study tools earned higher grades on most tests than those who did not use them in this way (Table 2). For Foundation I, students in Group II had significantly higher grades for quiz 1 \(F = 3.821, p < .05\) and quiz 2 \(F = 93.249, p < .001\) compared to those in Group I. The mean score of the quiz 3 group II was higher compared to group I but this was not significant \(F = 1.944, p > .05\). For Foundation II, students in Group I had better performance in three out of five tests. The mean scores for quizzes 1 \(F = 66.027, p < .001\) and 4 \(F = 20.879, p < .001\), and the final
The learning packet as a student-centered teaching strategy emphasized the role of the student in connecting interrelated content with the role of the teacher as the facilitator who provided questions and offered some guidance to ensure mastery of content. Having completed one offering of both quarters of the Foundation of Nursing course, the task now is to retrospectively assess benefits and challenges. This can serve as a basis for future controlled evaluation of, and broader uses of, the strategy. One purpose of gathering these evaluation data was that information gleaned could be used to decide if the method would merit ongoing study.

In today's educational society, one indicator of a program's or course's success is the student's perception of both their learning and of the effectiveness of the faculty. The evaluation data from the current project supports students' satisfaction with their learning experience in the course. Good educational practices are ones which respect different ways of learning while maintaining high expectations. Students come to the learning situation with different talents and learning styles. One student may excel in grades but lack organization and confidence in the clinical setting. Conversely, the student who may not excel at grades in the classroom but lack organization and confidence in the clinical setting. One of the advantages using self-learning packet is to respond to the different learning style or pacing needs in learners (Herrick et al., 1998). Feedback from students appears to support that the learning packet helped them identify and focus on the important concepts and apply the knowledge to practical scenarios and facility their critical thinking. Therefore, the use of learning packet as a supplemental teaching strategy may optimize students' experience at the school by treating them as partners from enrollment, which provides an opportunity to increase student's confidence in their ability to apply and master information and become life-long learners.

Learning outcomes are also a primary consideration in evaluating any learning situation. The effects of self-learning packages on cognitive retention of the information and the application to practice have been evaluated in several nursing staff development studies and the literature indicated that learners who used only self-learning packages retained information over time as well as those who had only traditional instruction programs (Herrick et al., 1998; Suggs et al., 1998). In this project, while tangible evidence was limited, when course and test grades were compared between students who had lectures and used learning packets as a supplementary strategy and those from the previous year without learning packet, preliminary results look encouraging with both test and end-of-course grade averages higher in the learning packet group. This positive trend in grades can not be considered predictive because of lack of a rigorous research design, but at least it is consistent with the admonition "above all do no harm".

The transition of nursing students from the pre-nursing courses into the nursing practice courses is always stressful. For many, the early nursing courses are the first time in their schooling that they must not only integrate content from multiple disciplines but apply that integrated content to clinical practice scenarios as well. The challenge is not unique to our school but is more difficult in some ways because we operate on a 10 week quarter system rather than 16 week semester. Therefore, each ten weeks students must receive new information, integrate it with other new and previously learned content and demonstrate the ability to apply it. Thus the perceived success of this strategy as a means to help students focus on critical content in a short period of time was an important outcome.

Although the benefits of the learning packet are apparent, there were relatively few challenges identified when evaluating use of the learning packet in the class. Some students' preference for independent versus group work was the biggest point of discord. One of the disadvantages has been identified for using self-learning packet is that learners may miss the interaction and exchange with peers and instructors (Herrick et al., 1998; Suggs et al., 1998). To compensate for this disadvantage, the learning packet was required to be completed as a group project in the Foundations course. While students had varying preferences, considering the need of nurses to be effective health care team members, it is important to provide opportunities for reciprocity and cooperation among students. Also, there is a component of professional socialization and development where peer groups of nurses may be of value. In our university, during their freshman year pre-nursing core classes, students are organized within learning communities. Learning communities are groups of 12–20 nursing students within the larger class group. The learning-community technique provides support and identity groups prior to the beginning of nursing courses. Also, at the junior and senior levels, selected courses use a team-based learning strategy. Thus, group work as part of the learning packet would be consistent with these efforts and preparatory for future course work. However, the group size (8–10 students in one group) may not be optimal for group interaction. Reducing the group size to two to three learners would be recommended (Herrick et al., 1998).
Conclusions

Nursing education faces many challenges. As noted, we have an aging and diminishing cadre of faculty. Student cohorts of generationally diverse students change almost yearly. Nurse educators often find that when an instructor’s style matches a student’s learning style, that student typically experiences greater satisfaction and a more positive attitude toward the course, the College and the profession. Strategies such as the learning packet may provide one efficient, cost-effective way to meet the need of both the student and the faculty.

With growing emphasis in universities on the importance of teaching and learning, support for time and resources to implement and evaluate new strategies is slowly increasing. Institutional policies are now addressing quality improvement through scholarly rigor in the teaching and learning processes. Our plans for the future study are to apply the learning packet strategy in a pre-test/post-test control group design using two cohorts of nursing students enrolled in an accelerated (second degree) program. Variables can be identified and controlled within the two groups who enroll at six month intervals.

Appendix A

STUDENT LEARNING PACKET

CHAPTER

TOPIC

Learning Objectives:

After completing this chapter, the student should be able to:

1. Describe the physiology and the urinary system and the processes of urine formation and elimination.
2. Discuss factors that affect urinary elimination.
3. Describe procedures for collecting various types of urine specimens.
4. Identify urinary elimination problems.
5. Describe and discuss nursing care appropriate for clients who have urinary elimination problems.

Sample Questions:

1. What role do the ureters, bladder, and urethra play in urinary elimination?
2. You are caring for a 65 year old female hospitalized for uncontrolled hypertension (high blood pressure) At 1500 (3pm) you are calculating her I&O’s.

Over the last 8 hours she had the following:

- 175mL of water
- A soup bowl of oatmeal, 50mL of apple juice, 4 cups of coffee, 6 pieces of toast, 1 turkey sandwich, 1 cup of ice cream sundae

Her 8 hour urine excretion included:

<table>
<thead>
<tr>
<th>0745</th>
<th>300mL</th>
<th>0915</th>
<th>275mL</th>
<th>1200</th>
<th>100mL</th>
<th>1430</th>
<th>75mL</th>
</tr>
</thead>
</table>

What is her total fluid intake?  
What is her total fluid output?  
Comment on your findings:

3. Case Study: You receive report from a UAP that a patient with no history of urinary elimination problems has had 150 mL of oral liquids in 6 hours and has voided 100 mL of clear, dark amber urine. His vital signs at the start of the shift were as follows: blood pressure, 108/76 mm Hg; pulse, 72 bpm; respirations, 18, temperature 98.6°F (37.0°C). The most recent check revealed blood pressure, 112/80 mm Hg; pulse, 88 bpm; respirations, 22; and temperature, 100.4°F (38.0°C).

a. What is the first urinary elimination related nursing problem that comes to your mind for this patient?
b. What data do you have to support your decision?
c. What actions should you take to take care of this patient?
References