A Systematic Process for Evaluating Teaching Methods in Nursing Education

Eileen J. B. Thrower, PhD, APRN, CNM, CNE, FACNM;
Rebecca Fay, DNP, APRN, CNM, WHNP-BC, CNE, FACNM; Linda Cole, DNP, CNM, CNE, FACNM;
Vicky Stone-Gale, DNP, APRN, FNP-BC, FAANP; Angela Mitchell, DNP, MSN, FNP-BC;
Erin Tenney, DNP, CNM, WHNP; Sarah Smith, DNP, APRN, CNM;
and Charlotte Swint, DNP, MPH, FNP-BC, CNRN

ABSTRACT
Background: An evidence-based process for the evaluation of teaching methods in nursing education, including classroom assignments, is not well described in the literature.
Problem: Nurse educators are familiar with evidence-based teaching but may be less knowledgeable about evidence-based methodologies to evaluate the effectiveness of teaching methods. Global measures of students' success, such as passing a licensing or certification examination, are often used as benchmarks for nursing education programs.
Approach: The authors suggest an evidence-based, 8-step evaluation process for evaluating the effectiveness of teaching methods. This process is demonstrated using simulation learning experiences in 2 courses in an advanced practice nursing education program.
Outcomes: The 8-step evaluation process was found to be effective for evaluating teaching methods within a graduate-level nursing education program.
Conclusions: The proposed evaluation process is applicable for evaluating teaching methods at all levels of nursing education. This systematic evaluation of teaching methods may ensure that students are engaged in learning activities leading to the attainment of assignment and course objectives.
Keywords: evaluation of teaching methods, evidence-based evaluation, nursing education, teaching methods

Nurse educators face the challenge of adapting and evaluating their teaching methods to prepare nurses for future innovations in health care. Each teaching method used in nursing courses should facilitate higher-level learning, critical thinking skills, and real-world application of knowledge. However, effective approaches to evaluating teaching methods and assignments in nursing courses are not well described in the literature. Innovative teaching methods used by nurse educators are seldom formally evaluated.

Background

The science of nursing education has garnered much attention in the literature over the past several years. Experts have called for nurse educators to employ evidence-based teaching (EBT) methods and have identified competencies for nurse educators.[1] However, the evidence used to guide and evaluate teaching methods in nursing education remains unclear.[2] Nurse educators may be familiar with EBT strategies but not as familiar with evidence-based approaches to evaluation of their teaching methods and assignments.[2,3]

Teaching methods and assignments in nursing education should lead to the attainment of course outcomes as well as preparation for future clinical practice. With this imperative in mind, nurse educators often use interactive learning strategies such as e-learning, concept mapping, internet-based learning, web-based distance learning, educational gaming, computer-based gaming, problem-based learning, and case studies to increase student knowledge.[4] Nurse educators who are knowledgeable about effective EBT strategies may be more apt to use them, especially if they work in a system that supports innovation. Student grades, student progress, national certification data, and course evaluations are often used to evaluate teaching methods.[2] Nurse educators may also develop tools for evaluating EBT.[2-5] However, the evidence is limited related to

Author Affiliations: Assistant Professors (Drs Thrower, Fay, Cole, and Smith) and Instructor (Dr. Tenny), Midwifery and Women's Health; Assistant Professor (Dr Stone-Gale), Instructor (Dr Mitchell), and Associate Professor (Dr Swint), Family Nursing, Frontier Nursing University, Hyden, Kentucky.

The authors declare no conflicts of interest.

Correspondence: Dr Thrower, 174 Old Stagecoach Rd, Carrollton, GA 30116 (eileen.thrower@frontier.edu).

Accepted for publication: September 16, 2019

Published ahead of print: December 3, 2019

DOI: 10.1097/NNE.0000000000000761

evaluating the effectiveness of teaching methods and assignments within courses.

A group of nurse educators in a graduate-level program had the opportunity to reflect on the innovations made in their teaching methods as a response to the changes in health care and clinical practice. The educators expressed concern related to the lack of an evaluation process for innovative changes in teaching methods. They worked together to identify an effective process for evaluating the use of teaching methods. After conducting a literature review, an evaluation process was proposed. The process was then applied as innovations were made in teaching methods in 2 randomly selected courses. In both courses, simulated learning experiences were employed to teach advanced practice nursing students, replacing more traditional teaching methods and written assignments. This article presents an 8-step process for evaluating teaching methods and demonstrates the use of this evaluation process in 2 graduate-level nursing courses.

Evaluating Teaching Methods

In nursing education, innovative changes in teaching methods within a course are frequently made without a plan for formal evaluation. Bourke and Ihrke[6] identified 10 steps to evaluate outcomes at the classroom, curriculum, or program level. These 10 steps can be modified to meet the needs of evaluation in nursing education. Eight of the 10 steps are applicable for evaluating innovative approaches in teaching methods and assignments, based on Bourk and Ihrke's work.[6]

The purpose of evaluating teaching methods within a course will vary depending on the course, teaching methods, and assignments that are used. The first step in the evaluation process is to determine its purpose; then, evaluation questions can be identified. The evaluation questions may relate to student outcomes, student engagement, student learning, student satisfaction, or test scores. The evaluation can also address educator outcomes, such as the experience of completing the instruction. The purpose of evaluating teaching methods and assignments should be focused and specific.

The second step in the evaluation process is to determine when to evaluate. Both formative and summative evaluations are needed to guide modifications of teaching methods. Although repeated evaluations are time-consuming for educators, they provide critical information about the value of the teaching methods or assignments.

Choosing an evaluation design, frame, or model is the third step in the process. The model chosen should be appropriate to answer the evaluation questions. Institutional curricular strategies should be incorporated into the design of an evaluation process or tool.

Choosing an appropriate instrument is the fourth step in the evaluation process. A variety of tools for evaluating teaching methods can be found in the literature. The tools include questionnaires, interviews, rating scales, checklists, attitude scales, and portfolios. The reliability and validity of the evaluation tool should be considered, and authorization to use the tool should be obtained. If an appropriate tool is not available, it may be necessary for the nurse educator to create or modify a tool. Because of the added time needed to establish validity and reliability for a new tool, it is often preferable to identify an existing tool. A literature review using terms such as instructional design, course evaluation, or evaluation tools can facilitate the identification of an appropriate tool.

The next step in the evaluation process is data collection using the chosen evaluation tool. Data collection is guided by available resources, the scope of the change implemented, the number of students involved, and students' characteristics. Appropriate sample size should be determined based on the intended power of the evaluation. In some situations, all the students involved might be sampled; in others, a representative sample may be chosen.

Data should be organized and analyzed appropriately to answer the evaluation question as part of the fifth step in the process. The demographic and student-characteristic data should be organized to provide contextual understanding in the evaluation process. The need for institutional review board approval should be considered before the evaluation process is implemented.

Results are shared with the faculty team, as the next step, based on evaluation findings. If changes to the curriculum are deemed necessary, results should be shared with the appropriate institutional curriculum leaders. The final, and perhaps most important, step in the evaluation process is using the findings. The results of the evaluation process should be thoughtfully applied for continuous improvement in the nurse educator's teaching methods and the design of course assignments. Evaluation of teaching methods is an iterative process of ongoing improvement analogous to quality improvement. Nurse educators should be actively encouraged to disseminate their findings so that other nurse educators might benefit from lessons learned.

Application of Evaluation Process 1: Peer Review Simulation

A simulated peer review experience was developed for an advanced role course in a graduate nursing education program. The students reviewed the compliance of advanced practice nurses' implementation of a health care screening guideline in a clinical setting. Students reviewed the compliance data before the simulation experience. During the online simulation, the students were randomly assigned to pairs, where one was a peer reviewer and the other was an advanced practice nursing leader within a health care system. Communication using principles of just culture was stressed. All the students participated in a debriefing session immediately following the simulation.

Evaluation of the Peer Review Simulation

Faculty conducted a literature search to identify validated instruments designed to measure student learning outcomes. Without a baseline comparison group, a validated

instrument was thought to be necessary. Several instruments were compared to determine relevance to the elements of the simulation content and design. The Simulation Learning Effectiveness Inventory (SLEI),[7] a validated instrument for measuring learning outcomes in simulations, was chosen as the best instrument. The instrument was modified for the assignment, with permission from the instrument's author. The SLEI explores 7 domain areas, including course arrangement, equipment resource, debriefing, clinical ability, problem solving, confidence, and collaboration.

Faculty identified the purpose of the evaluation to be the appraisal of student learning from the peer review simulation assignment, as this assignment was a new means of teaching peer review. It was hypothesized that simulating the peer review process would provide a meaningful approach to synthesis-level learning. Students completed an electronic survey, which provided them with the opportunity to reflect on their learning. Completion of the simulation evaluation, using the SLEI, was encouraged immediately following the simulation to ensure maximum recall of the experience.

Data collection began as soon as the first group of students completed the simulation and debriefing experience. A total of 39 questions using a 5-point Likert scale were included as well as an area for additional narrative comments. Interpretation of the data began at the end of the first academic term the assignment was used. Both quantitative and qualitative data were examined, and a report was compiled to summarize the findings. The evaluation results were shared with the university's simulation team as well as with course faculty to increase understanding of the students' perception of teaching outcomes from the simulation. Course faculty then used the findings from the SLEI to modify the simulation assignment to improve learning outcomes for future students. Results of the evaluation process were presented to nurse educators to share the experience and lessons learned.

Application of Evaluation Process 2: Difficult Conversations Simulation

A second simulation assignment was developed for an online primary care management course. The SPIKES protocol (Set the stage, Perception, Inform, Knowledge, Empathy, and Summarize)[8] was used as nurse practitioner students simulated breaking bad news to patients regarding a life-changing diagnosis. Standardized patients were used in the simulation to provide firsthand experiences with communication techniques. Students were presented with a scenario requiring communication of the diagnosis of malignant melanoma. The standardized patients had been instructed beforehand to react in various ways, providing students with the opportunity to reflect on their emotions and feelings related to presenting bad news.

During the assignment orientation, the students were instructed to be aware of their scope of practice when providing information to the patient regarding treatment options. Student nurse practitioners may not have the appropriate answers for the patient and were cautioned to avoid giving erroneous information. Interprofessional collaboration was explored as care of the patient was transferred to a specialist. The concepts of patient-centered care and shared decision making were also incorporated in the simulation. Debriefing sessions with patients and faculty provided a safe environment for students to analyze and share their feelings and to discuss communication and transition techniques.

Evaluation of the Difficult Conversations Simulation

The purpose of the evaluation was student-focused. An understanding of how students learn about their scope of practice and become cognizant of feelings and emotions regarding breaking bad news was sought. Students were required to submit a 2- to 3-page reflection of the simulation and debriefing experience within 3 days of completing the activity. This time frame was chosen so the full effects of the simulation would be present. The reflection allowed students to examine their own emotions, feelings, and experience in breaking bad news. It was hoped that students would be honest and examine their strengths and weaknesses during the simulation.

Students also completed a Learning Experience Evaluation tool that examined learning outcomes. The Learning Experience Evaluation was developed by the simulation team at the university to assess prebriefing orientations, the effectiveness of objectives, application abilities, time commitment required, level of assignment difficulty, and debriefing activities. Students and standardized patients were given an opportunity to provide qualitative feedback to the assignment. The standardized patients were provided with specific criteria used to score the students.

Data collection began immediately after the simulation and debriefing sessions were completed. The Learning Experience Evaluation tool was sent to students via email. The standardized patients completed scoring sheets and provided qualitative information on each student immediately after the session was completed.

Course faculty used findings from the Learning Evaluation Experience and the qualitative data to guide continuous improvement in the assignment. Dissemination of findings from this evaluation process will increase nurse educators' understanding of student perceptions regarding breaking bad news to patients.

Outcomes

The Peer Review Simulation assignment was evaluated with the SLEI and indicated that more than 96% of respondents (n = 800) agreed or strongly agreed that the assignment contributed to their learning in all 7 domains of the SLEI. The Difficult Conversation: NP Scope of Practice Across Care Transition simulation assignment was evaluated using an electronic survey. The respondents (n = 462) strongly agreed that the activity was a positive learning experience

(93.43%) and that they were able to apply the content learned in the course during the activity (95.55%). They also agreed the standardized patients were professional, acted in character (82.00%), and provided constructive feedback during the debriefing session (83.37%). The qualitative data provided by the students confirmed that this was a valuable learning experience.

Conclusion

Evidence-based evaluation of innovative teaching methods and course assignments has not been well described in the literature. The 8-step evaluation process outlined in this article allows for the meaningful assessment of teaching method outcomes. Application of this systematic evaluation process in 2 graduate-level nursing courses demonstrated the effectiveness of the teaching methods used. Evaluation of a peer-review simulation provided evidence of student learning at the analysis and evaluation levels. Similarly, evaluation of a difficult conversation simulation revealed learning at the application level or higher.

The use of a systematic evaluation process for teaching methods and assignments can ensure that students are engaged in learning activities that facilitate the attainment of course and program objectives. The proposed evaluation process allows nurse educators to evaluate their teaching methods to help ensure students are moving toward future success in nursing practice. Although warranting further research, engaging in a systematic approach of evaluating teaching methods in nursing courses will likely lead to improvements in meeting course objectives and in maximizing student learning.

References

1. National League for Nursing. *The Scope of Practice for Academic Nurse Educators*. New York: National League for Nursing; 2012.
2. Patterson BJ, Klein JM. Evidence for teaching: what are faculty using? *Nurs Educ Perspect*. 2012;33(4):240-245.
3. Kalb KA, O'Conner-Von SK, Brockway C, Rierson CL, Sendelbach S. Evidence-based teaching practice in nursing education: faculty perspectives and practices. *Nurs Educ Perspect*. 2015;36(4):212-219.
4. Breytenbach C, ten Ham-Baloyi W, Jordan PJ. An integrative literature review of evidence-based teaching strategies for nurse educators. *Nurs Educ Perspect*. 2017;38(4):193-197.
5. Culyer LM, Jatulis LL, Cannistraci P, Brownell CA. Evidenced-based teaching Strategies that facilitate transfer of knowledge between theory and practice: what are nursing faculty using? *Teach Learn Nurs*. 2018;13:174-179.
6. Bourke MP, Ihrke BA. Introduction to the evaluation process. In: DM Billings, JA Halstead, eds. *Teaching in Nursing: A Guide for Faculty*. 5th ed. St Louis, MO: Elsevier; 2016:385-397.
7. Chen SL, Huang TW, Liao I-C, Liu C. Development and validation of the simulation learning effectiveness inventory. *J Adv Nurs*. 2015; 71(10):2444-2453.
8. Baile WF, Buckman R, Lenzi R, Glober G, Beale EA, Kudelka AP. SPIKES—a six-step protocol for delivering bad news: application to the patient with cancer. *Oncologist*. 2000;5(4):302-311.

TEACHING TIP

The Report Game: An Effective Tool in Postconference Reporting

A communication strategy, inspired by the telephone game, was introduced into a postconference for nursing students in their first clinical course to improve communication techniques in end-of-shift handoff reports. This was an effective strategy to teach students the importance of clear communication while prioritizing important information. At the end of the clinical day, students were placed in pairs to give report on the client they had cared for during the clinical day and receive report on the other student's client. Students were given 3 minutes each to complete their report. After the 3 minutes, new pairs were formed, and the students communicated the received report to their new partner. Again 3 minutes were allotted for each student to communicate priorities and important information. After the second team completed their reports, random students were selected to give report to the entire group, and the student who cared for the patient revealed if any valuable data had been lost or if extraneous information was added. The telephone game illustrates the problem with handoffs and reinforces the importance and relevance of capturing information. Students evaluated the activity as increasing their confidence and stating they were more equipped to give an end-of-shift report to a primary nurse.

By **Andrew J. Donadio**, DNP, RN-BC, CNE, Assistant Professor; and **Shelia Hurley**, PhD, RN, MBA/HC, Associate Professor, Tennessee Tech University, Cookeville TN, Adonadio@tntech.edu.