



Faculty Publications

---

2013-05-07

## Debriefing Simulations: Comparison of Debriefing with Video and Debriefing Alone

Shelly J. Reed

Brigham Young University - Provo, shelly-reed@byu.edu

Claire M. Andrews

Patricia K. Ravert

Follow this and additional works at: <https://scholarsarchive.byu.edu/facpub>



Part of the [Nursing Commons](#)

### Original Publication Citation

Clinical Simulation in Nursing, Volume 9, Issue 12

---

### BYU ScholarsArchive Citation

Reed, Shelly J.; Andrews, Claire M.; and Ravert, Patricia K., "Debriefing Simulations: Comparison of Debriefing with Video and Debriefing Alone" (2013). *Faculty Publications*. 1815.

<https://scholarsarchive.byu.edu/facpub/1815>

This Peer-Reviewed Article is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in Faculty Publications by an authorized administrator of BYU ScholarsArchive. For more information, please contact [ellen\\_amatangelo@byu.edu](mailto:ellen_amatangelo@byu.edu).

## Background

Human Patient Simulation use has increased dramatically in nursing education over the past 10 years, providing many benefits. Simulation allows use of structured clinical experiences that may not be found in a clinical setting (Nehring, Ellis, & Lashley, 2001). Simulator availability and realism has improved, with more availability to the nurse learner (Bremner, Aduddell, Bennett & VanGeest, 2006). Simulation allows students to critically reflect and analyze their own actions, and analyze clinical decision-making of others (Jeffries, 2007). The use of higher-level technology allows hands-on, active participation in realistic scenarios, and allows a degree of realism vital for training. Cognitive, technical, and behavioral skills can be improved, training costs can be reduced through concentrated learning experiences and a wide variety of simulated patient-care experiences can be provided (Yaeger, Halamek, Coyle, Murphy, Anderson, Bouyle et. al 2004). Multiple learning objectives can be taught in a realistic environment without patient risk (Wilford & Doyle, 2006). Another benefit is to prepare and ensure the competence of student nurses, leading to improved patient safety outcomes (Nehring & Lashley, 2004; Radhakrishana, Roche, and Cunningham 2007).

There is limited research in the use of simulation in nursing education and the evaluation of student competency. In a survey of nursing schools and simulation centers, Nehring & Lashley, (2004) gathered student opinions about competency evaluation using simulation. Three-fourths of students in responding programs reported that competency evaluation using simulation was appropriate in at least some circumstances. Universities used simulation for competency evaluation more often than community colleges. Faculty evaluation of student performance was found to be the primary evaluation method, with student report of performance second and evaluation of videotaped performance third (Nehring, 2004). Radhakrishnan et al. (2007) described using simulation to evaluate clinical skill performance in several areas: safety, basic assessment, prioritization, problem-focused assessment, ensuing interventions, delegation and communication. The pilot study, conducted with nursing students, used a performance-rating tool measuring clinical performance improvement. Students who

practiced using simulation scored higher than the group using clinical training alone in some skill areas. Additional studies were recommended.

### **Scriven's Key Evaluation Checklist**

Use of simulation in nursing education is rapidly expanding. With little available evidence about the use of simulation for student evaluation, an established guide such as Michael Scriven's Key Evaluation Checklist (KEC) has the potential to help educators with a solid guiding framework. Scriven, past president of both the American Evaluation Association and the American Educational Research Association, is known 400+ articles in many areas, including evaluation (Claremont University, 2009). Scriven's KEC is also well-known for contributing to evaluation methodology. As the KEC is evaluation specific rather than discipline specific, it has a multi-disciplinary focus, and can be used in many areas, such as project evaluation and performance appraisal (Davidson, 2005). The KEC provides a useful and established guide for the nurse educator designing an evaluation of student performance using simulation.

Many evaluation checklists incorporate a complex theory or at least a set of assumptions. Scriven's Key Evaluation Checklist (Figure 1) consists of checkpoints representing "layers" in an evaluation. It is weakly sequential, meaning repeated checkpoint review sometimes leading to modification of earlier checkpoints. The effect of repeating or reviewing checkpoints creates a dynamic, rather than static model. The checklist consists of three preliminary checkpoints and 15 following checkpoints grouped in the categories of foundations, sub-evaluations, and conclusions. These checkpoints provide focus for creating, structuring, and evaluating evaluations of any kind. The checklist user employs his/her own discretion and judgement in using the checklist (Davidson, 2005, Scriven, 2007a).

### **Use of the checklist when designing a simulation for evaluation**

Davidson (2005) describes the first preliminary step in Scriven's Key Evaluation Checklist as the **Executive Summary**. This step clarifies what is going to be evaluated, and how; in this case, a nursing

student (the evaluatee). The Executive Summary includes **descriptions and definitions** (also a later checkpoint) to help identify the student's current level as well as where he/she should be. When using the checklist for student evaluation, the descriptions and definitions checkpoint would include how simulation is currently being used in the nursing program, the student's prior exposure to simulation, and if prior evaluation history with simulation. Scriven's **Preface** Checkpoint of the Key Evaluation Checklist describes the big picture for the evaluation, ie. the purpose for the evaluation and main evaluation questions (Davidson, 2005). Examples of "big picture" questions might be: Is the simulation to determine if a student is progressing adequately during the semester? Is the simulation to determine skill proficiency? Is it to show efficient team work? Is it to determine if a student should move from one level to the next? The final preliminary step includes the **methodology** checkpoint, or simulation design. In this case, it is the experiential evaluation provided by simulation, one based on student performance. Formative evaluation, (evaluation for the purpose of improvement), and summative evaluation (deciding if the student (evaluatee) has mastered level objectives), are two examples of evaluation design. The nurse educator needs to decide which design will answer the big picture question.

The foundations portion of the Key Evaluation Checklist provides the blueprint. **Background and Context, and Descriptions and Definitions** identify the nursing student in detail. For example, where should the student be at this point in time? What nursing behaviors should the student be able to exhibit? Objectives and purpose of the evaluation would also be included here. The educator should evaluate available **resources**, such as type of simulator/simulation to be used for the evaluative simulation. Does the scenario require a high fidelity human patient simulator? Will a low fidelity simulator work in this situation? Would a computer-based simulation be appropriate? Are scripted and designed simulations already available appropriate to answer the big picture questions? Is the chosen simulator readily accessible, or will the simulator have to be reserved, borrowed, or rented? Is there a cost? Will this cost be covered by the scholastic institution, by outside funding, or by the student? Will there be costs associated with simulator maintenance, faculty release time, faculty development and

faculty buy-in? These resource questions also help to determine if this is a cost-effective evaluative method.

Cost-effectiveness is only one aspect when researching simulation as a form of student evaluation. Additional criteria include consumers, who might be affected by the evaluatee ; values, which concern the integrity of the evaluation, process evaluation, when the student is evaluated using simulation; and outcome evaluation (Davidson, 2005).

In nursing education, the evaluatee is the nursing student. **Consumers** affected by the evaluatee include patients, their families and communities. Additional consumers include a student's future employer, their schools and instructors, as all are impacted by successful or unsuccessful students.

**Value** and effectiveness of the simulation used for evaluative purposes are also important. Where is the criteria obtained that is used for evaluation? Are important skills being evaluated? How is competent performance evaluated? These questions help to determine the value of using simulation for evaluation. Grading rubrics are also helpful to preserve value.

**Process evaluation** defines the strength of the simulation design, as well as the delivery (Davidson, 2005). Process evaluation contains the following four elements of a well-planned simulation: scripting the simulation, staff development and student orientation, executing the simulation, and evaluation of the simulation (Jeffries, 2007). Scripting can be accomplished using written scripts already available, or scripts specifically formulated to answer the big picture questions. A student competency evaluation might be based on a "Problem Recognition Tasks" (Figure 2) designed to evaluate problem solving and diagnostic skills. Use of simulation is easily adapted to this format (Jeffries, 2007).

**Outcome evaluation** is another important evaluative criterion (Davidson). Is the outcome a skill performance or behavior? Is it verbalization of knowledge pertaining to a condition? Once the outcome has been identified, how will it be evaluated? Will it be a subjective evaluation by the session facilitator? Will there be a grading rubric for performance outcomes? Will the rubric identify present or absent behaviors (Radhakrishnan et al., 2007)? Outcomes should be identified as objectives rather than

goals, as an outcome more easily identifies both intended and unintended effects. Evaluation based on outcomes, rather than goals—allows evaluation teams to more easily identify all effects (Davidson). Grading rubrics can be helpful to determine if outcomes have been met. They help to eliminate evaluator bias, rendering the evaluation more objective than subjective. Nursing students should be made aware of the outcomes on the rubric in advance, so they can study or prepare for the simulation used for evaluation as they would any other exam (P. Ravert, personal communication, November 18, 2008).

Scriven's **comparative cost effectiveness** checkpoint as described by Davidson (2005) is important when considering simulation as an evaluative method in nursing education. Type, availability and cost of simulation fall into this category. The cost of simulation compared to other evaluation methods should be considered. "Might another method of evaluation less costly provide a means of evaluation less costly or of similar or greater value? Are costs excessive, quite high, just acceptable, or very reasonable?" (Davidson 2005, p. 24)

The criterion of **exportability** is especially pertinent when using simulation for evaluative purposes in nursing education. Exportability describes the "elements such as an innovative design or approach which might make it potentially valuable or a significant contribution in another setting" (Davidson 2005, p. 7). Using simulation to evaluate clinical skills would seem to provide more exportability to an actual clinical setting than many other commonly used forms of evaluation. Bremner et al. (2006) describe many clinical advantages to using simulation, including simulated clinical scenarios providing real world experiences without risk to patient or students. Exportability of using simulation for evaluation might also provide the same advantages.

Once simulation is used for evaluation in nursing education, the following checkpoints from Scriven's Key Evaluation Checklist can be used to determine if the simulation meets educational evaluation needs and where it is lacking. In addition to determining the **overall significance** of evaluation using simulation, other conclusions can be made. These include a: **recommendations and explanations** (how the simulation went and recommendations for improvement), b: **responsibilities**

(who or what was responsible for good or bad results), and c: **reporting and follow-up** (evaluation reporting and who receives the results). **Meta evaluation** is the conclusion, providing a critical assessment of the strengths and weaknesses of the evaluation itself (Davidson). These checkpoints also provide the evaluation steps required for a good simulation as defined by Jeffries (2007).

Use of patient simulators is increasing in the education and training of healthcare professionals. Educational institutions indicate competency evaluation using simulation is appropriate under certain circumstances (Nehring, 2004). Using an established tool such as Scriven's Key Evaluation Checklist may provide the basis for a sound simulation design and may supply a means to draw conclusions about the effectiveness of the process of using simulation to evaluate student competency.

#### Reference List

- Bremner, M. N., Aduddell, K., Bennett, D. N., & Van Geest, J. B. (2006) The use of human patient simulators—best practices with novice nursing students. *Nurse Educator, 31*(4), 170-174.
- Claremont University, School of Organizational and Behavioral Sciences. *Michael Scriven*. Retrieved February 12, 2009 from [www.cgu.edu/pages/4745.asp](http://www.cgu.edu/pages/4745.asp).
- Davidson, E. J. (2005) *Evaluation methodology basics*. Thousand Oaks, CA: Sage Publications.
- Jeffries, P. R. (2007) *Simulation in nursing education: From conceptualization to evaluation*. New York, NY: The National League for Nursing.
- Good, M. L. (2003). Patient simulation for training basic and advanced skills. *Medical Education, 37*, 14-21.
- Levine, A., & Swartz, M. (2008, June). Standardized patients: the other simulation. *Journal of Critical Care, 23*(2), 179-184. Retrieved February 12, 2009, from CINAHL database.
- Nehring, W. M., Ellis, W. E., & Lashley, F. R. (2001). Human patient simulator in nursing education: An overview. *Simulation and Gaming, 32*, 194-204.
- Nehring, W. M., & Lashley, F. R. (2004). Current use and opinions regarding human patient simulators

in nursing education: An international survey. *Nursing Education Perspectives*, 25(5), 244-248.

Radhakrishnan, K., Roche, J. P., & Cunningham, H. (2007). Measuring clinical practice parameters with human patient simulation: A pilot study. *International Journal of Nursing Education Scholarship*, 4(1), 1-11.

Scriven, M. (2007a). *Key Evaluation Checklist*. Retrieved August 6, 2008 from [www.wmich.edu/evalctr/checklists/kec\\_feb07.pdf](http://www.wmich.edu/evalctr/checklists/kec_feb07.pdf).

Scriven, M. (2007b). *The logic and methodology of checklists*. Retrieved August 6, 2008 from [www.wmich.edu/evalctr/checklists/papers/logic&methodology\\_dec07.pdf](http://www.wmich.edu/evalctr/checklists/papers/logic&methodology_dec07.pdf).

Wilford, A., & Doyle, A. W. (2006). Integrating simulation training into the nursing curriculum. *British Journal of Nursing*, 15(11), 604-607.

Yaeger, K., Halamek, L., Coyle, M., Murphy, A., Anderson, J., Bouyle, K., et al. (2004). High fidelity simulation-based training in neonatal nursing. *Advances in Neonatal Care*, 4(6), 326-331.

Figure 1

*Scriven's Model*

Preliminaries	<ul style="list-style-type: none"> <li>I. Executive Summary</li> <li>II. Preface</li> <li>III. Methodology</li> </ul>
Foundations	<ul style="list-style-type: none"> <li>1. Background and Context</li> <li>2. Descriptions and Definitions</li> <li>3. Consumers</li> <li>4. Resources</li> <li>5. Values</li> </ul>
Sub-Evaluations	<ul style="list-style-type: none"> <li>6. Process Evaluation</li> <li>7. Outcome Evaluation</li> </ul>



	8 & 9. Comparative Cost-Effectiveness  10. Exportability  11. Overall Significance
Conclusions	12. Recommendations and Explanations  13. Responsibilities  14. Reporting and Follow-up  15. Meta Evaluation

(Used with permission of E. Jane Davidson and Michael Scriven)

Figure 2

Simulation: Care of the client with postpartum hemorrhage
<p>1. Simulation scripting:</p> <p>A scenario is adopted or developed to illustrate a situation in which a client is predisposed to a postpartum hemorrhage.</p> <p>Faculty with expertise in the content area review the scenario.</p>
<p>2. Staff development and student orientation:</p> <p>The scenario is run with faculty colleagues or a group of advanced students to see if agreement on the scenario choice is present. This run-through allows assessment of the difficulty of the scenario and the time it will take to complete.</p> <p>For an evaluative simulation, students should have prior exposure to simulation in other previous simulation sessions.</p>
<p>3. Compose a problem recognition form. A problem recognition form also ties in closely with a grading rubric. With this scenario, some examples might be:</p> <p>“Student assesses the fundus of the uterus”</p> <p>“Student provides a means to empty the client’s bladder when the uterine fundus is displaced above and to the right of the umbilicus”</p> <p>“Student provides fundal massage for a boggy uterus”</p> <p>Considerations when using simulation for evaluation would be to provide problem recognition which answers the “big picture” questions.</p>

4. The simulation is implemented.

Considerations in this phase include dimensions of merit, such as how many evaluatees (nursing students) will be involved in the evaluative simulation.