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Learning Theories and Tools for the Assessment of Core Nursing Competencies in Simulation: A Theoretical Review

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Abstract

Background: Simulation is an active teaching-learning strategy that is congruent with the competency-based paradigm in education. In competency-based education (CBE), learning outcomes are conceptualized as complex, holistic, and context-dependent combinations of knowledge, skills, and attitudes. Competencies are not considered as finite learning outcomes; they would develop throughout a learner's lifetime. Thus, the assessment of competencies remains a major challenge for educators who must evaluate the progression of learners through developmental milestones that make up the trajectory of competencies. Nursing educators who adopt simulation for CBE must understand the process of learning in simulation to appreciate how to assess the competencies it is expected to contribute to.

Research question/hypothesis: We aimed to identify the theories used to explain learning in simulation and the tools used to assess learning outcomes in simulation research. We sought to determine if these tools were compatible with a holistic and context-dependent vision of competencies.

Method: This was a theoretical review. Through an extensive database search, we retrieved and selected research papers describing simulation in undergraduate nursing education. The content of the papers was analyzed for association between learning theories and assessment tools. IRB approval was not applicable.

Results: We retrieved 8,683 research papers and included 182 of those in the review. Seventy-nine papers did not provide an explicit theory to explain learning in simulation. The 103 remaining papers identified one or more learning or teaching theories; the most frequent were the NLN/Jeffries Simulation Framework, Kolb's theory of experiential learning, and Bandura's social cognitive theory. Students' perceptions of simulation, knowledge, and self-confidence were the most frequently assessed, mainly via scales designed for the study in which they were used. Sixty-three studies assessed core competencies as learning outcomes.

Conclusion: The results suggest that simulation is executed from a teaching paradigm rather than a learning paradigm and that the mechanisms by which simulation produce its effects

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remain understudied. Nevertheless, this review identified tools available to assess competencies in action, which can already be used by researchers. These tools rely on an observational approach and some provide indicators of performance for different levels of competence.

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