Title: SPECIAL SESSION: Design-Based Educational Research in Nursing
Type: Oral

Keywords: Design-based research, Educational interventions and Instructional design

Description/Overview:
The purpose of this session is to provide an overview of design-based research and practical steps for incorporating design into a nursing educational intervention study. Integration of theory, both within the design of the study as well as the intervention will be highlighted.

Abstract Text:
Advancing the science of nursing education requires a commitment to creating evidence-based educational interventions. Currently, there is limited empirical evidence regarding the efficacy of educational interventions, particularly those that are able to be tested in an iterative way. To increase the rigor of nursing education research, design must be a consideration in the initial phases of study development. Design-based research can be used to generate theoretical evidence both through the intervention as well as on the intervention, both testing the theory and refining the intervention. Consideration of context is important in educational research as it is translated to practice. Using design, contextual variables that may affect outcomes and be considered, empirically tested, and refined through iterative testing. Researchers may choose to use design-based research for the purposes of development, validation, and effectiveness. Development studies are those where the goal is the production of an intervention and design theory related to that intervention. Validation studies test and generate theories. Effectiveness studies examine student outcomes related to an intervention. Good design-based research must have the following characteristics: 1) the goals of theory development and design are intertwined; 2) iterative cycles of design, enactment, analysis, and redesign must be embedded; 3) research outcomes must be disseminated to those in practice; 4) accounting for how the design functions in practice related to contextual issues; and 5) methods to document and connect the processes within the intervention to the outcome. To design the intervention, one must look to instructional design principles which are rooted in Behaviorism and General Systems theory, seeking a response from a learner given a set of learning conditions. The iterative steps of design-based research in education include analysis, design, and evaluation with a dual focus on theory and practice, integrated research and design processes, and theoretical and practical outcomes.

Educational outcomes reported in the nursing literature are often not well connected to the design of the intervention which limits its usefulness in other environments with different contextual variables. Additionally, most nursing education intervention research is limited to single site and single sample which limits the robustness and generalizability of their findings. In order to advance the science of nursing education, nurse researchers must consider the theoretically driven design of educational interventions which are able to be replicated and refined in an iterative way that informs both nursing education practice as well and the science of nursing education. Context plays an important role in the outcomes of any educational intervention. Therefore, those individuals applying the intervention in the learning environment must play a role in the design and refinement of that intervention.

Nursing education researchers should look to the principles of instructional design to develop a robust educational intervention. Guided by theory to explain the how and why of the design, the ADDIE (analysis, design, development, implementation, and evaluation) model of instructional design can provide guidance in the development of the intervention. Analysis includes problem identification and setting learning goals. During the design phase, measurable learning objectives are developed as well as the classification of the type of learning and learning activities. This is followed by the development and implementation of the design. Formative and summative evaluation then contributes to the iterative cycle of refinement and testing of the intervention.
The inclusion of design-based research principles in nursing education research can significantly increase the strength of the evidence if carefully considered as an integral part of the study design. Researchers in nursing education must partner with colleagues in practice to ensure that the design is clear, can be repeated, and is context-dependent. Careful attention to this will create opportunities to increase the reliability of the evidence generated from these studies.

References:


Content Outline:

1. Introduction
   a. Problem statement: Empirical data regarding the efficacy of nursing educational interventions is limited
   b. Strategy for improvement: Inclusion of design-based research principles in educational intervention studies

2. Overview of design-based research
   a. Research on interventions
   b. Research through interventions

3. Type of design studies
   a. Development
   b. Validation
   c. Effectiveness

4. Characteristics for good design research
   a. Goals of theory development and testing are intertwined
   b. Cycles of design, enactment, analysis, and redesign
   c. Dissemination of theories that communicate the implications to those in practice
   d. How the design functions in authentic settings
   e. Methods to document and connect processes of enactment to outcomes of interest

5. Generic model for design research (ADDIE)
   a. Analysis
   b. Design
   c. Develop
   d. Implement
   e. Evaluate

6. Examples of design research in nursing
   a. Simulation research
   b. Web-based course design

7. Critiquing nursing educational intervention research
   a. Theoretical considerations - does theory drive the study and intervention design?
   b. Goal of the study - advance the theory or test the intervention?
   c. Delineation of specificity of intervention - is it at the level of specificity that it could be replicated?
   d. Contextual variables - does the researcher discuss the impact of context on the intervention?
   e. Implications - does the researcher discuss implications for iterative evaluation of the intervention

8. Practice opportunity - development of an design-based study using an exemplar
   a. Identification of study variables and theory
   b. Design of educational intervention based on theory
   c. Considerations for development of intervention
   d. Evaluation of outcomes

9. Conclusion
   a. Importance of consideration of design in educational research
   b. Using design-based research to advance the science of nursing education

Moderator

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Author Summary: I have been an academic educator for 15 years. Currently I am teaching in the graduate program. I also had served as the chapter president of STTI and coordinator for ONS.

Organizer

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