Preparing Practice Scholars: Implementing Research in the DNP Curriculum

2011 Symposium
Produced by Members of
NONPF's Research SIG

Objectives

√ To discuss the levels of DNP research competencies currently recommended by national authorities and directions for future competencies

√ To analyze the specific content and organizing framework for teaching research in DNP programs

√ To synthesize the role of the DNP in translational research and implementation science

2

Preparing Practice Scholars: What is Recommended for DNP Competencies for Clinical Scholarship?

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Introduction

Recommendations for DNP Scholarship:
NONPF
AACN
NAPNAP
ANA
Universities with DNP curriculum
Institute of Medicine

4

PRACTICE DOCTORATE NURSE PRACTITIONER ENTRY-LEVEL Selected COMPETENCIES
NONPF, **2006**

▪ **Competency Area: Scientific Foundation**

(1) Critically analyzes data for practice by integrating knowledge from arts and sciences within the context of nursing's philosophical framework and scientific foundation

(2) Translates research and data to anticipate, predict and explain variations in practice

5

AACN Essentials for Advanced Nursing Practice –III (2006)

► Analytic methods to critically appraise.

► Designing and implementing processes to evaluate outcomes of practice, practice patterns, and systems of care.

► Designing, directing, and evaluating quality improvement methodologies.

6

AACN Essentials for Advanced Nursing Practice – III

► Applying relevant findings to develop practice guidelines and improve practice and the practice environment.

► Use information technology and research methods appropriately.

► Function as a practice specialist/consultant in collaborative knowledge-generating research.

► Disseminate findings from evidence-based practice and research to improve healthcare outcomes. p. 12

7

NAPNAP

■ NAPNAP supports the National Organization of Nurse Practitioner Faculties' (NONPF) Practice Doctorate Nurse Practitioner Entry-Level Competencies (2006) that build on the existing Domains and Core Competencies of Nurse Practitioner Practice (2002)

■ NAPNAP supports AACN Essentials of Doctoral Education

8

ANA POSITION ON PRACTICE DOCTORATE

■ The DNP provides expanded knowledge through the formulation and interpretation of evidence-based practice (Chism, 2010).

Competencies include:

■ Provide expert care
■ Formulate policy
■ Administer health care delivery systems
■ Educate the next generation of health care
■ Increase access to quality health care
■ Improve health care outcomes.

9

ANA POSITION (cont.)

■ ANA recognizes that both practice and research are essential and should collaborate.

■ "In 2009, the ANA Board of Directors approved a recommendation to support both practice and research focused doctoral preparation for nurses as a terminal degree."

■ ANA supports AACN Essentials.

10

Institute of Medicine: Exceptional Competencies Recommendations for DNP

■ Translation of research into practice,
■ Development, and implementation of evidence-based quality improvement programs
■ Ensure excellence in patient-centered care and patient safety,
■ Interdisciplinary collaboration,
■ Utilization of technology and information systems to improve care and safety

11

Scholarship Expectations of Selected University DNP Curricula

■ DNP programs/curricula set high standards and strive to have equality with PhD and DNS programs

■ DNP graduates are on equal basis with those of any doctoral program

■ DNP students are expected to synthesize and build new knowledge

■ DNP students are expected to develop a firm foundation for additional scholarship

12

Scholarship Expectations (cont.)

- DNP students use evidence

- DNP students impact outcomes

- DNP students show outcomes

13

Definition: Scholarship

- "those activities that systematically advance the teaching, research, and practice of nursing through rigorous inquiry that 1) is significant to the profession, 2) is creative, 3) can be documented, 4) can be replicated or elaborated, and 5) can be peer-reviewed through various methods" (AACN, 2006, pg 1)

14

So, everyone agrees that Scholarship is an essential dimension of the DNP Role.

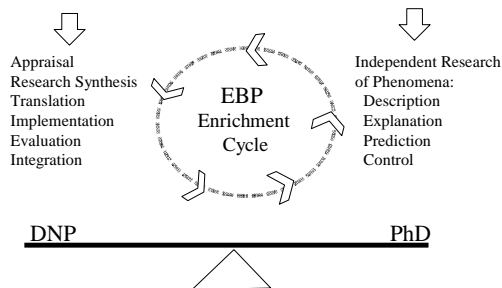How do we assist students to become scholars?

15

General Considerations in Developing DNP Scholars

- Helpful to "locate" the new role in relation to the existing PhD scholar role
- Identify challenges or negotiations that will need to be addressed as the profession moves forward with the new DNP scholar role
- Communicate experiences with each other
- Learn from research regarding DNP practice

16

Practice Scholar   Research Scholar

Both are full scholars, emphasis is different

Knowledge Application   Knowledge Generation

Appraisal
Research Synthesis
Translation
Implementation
Evaluation
Integration

EBP Enrichment Cycle

Independent Research of Phenomena:
Description
Explanation
Prediction
Control

DNP   PhD

Courtney, 2011 17

Nursing Science Implications of the DNP role

- PhDs should coordinate with DNPs regarding <u>focus</u> of knowledge generation (research questions should not be developed in isolation nor based exclusively on personal preference)

- DNPs can teach PhDs the process of systematic reviews (science synthesis or evidence summary) and translation research (implementation science)

- PhDs can teach DNPs basic methodologies for increased rigor in program/intervention evaluation

18

PhDs need to greet our new
DNP colleagues, "Thank goodness you are here! The
profession must have the benefit of
your unique scholarship to
fulfill its
Science & Practice mandates."

All nursing scholarship must ultimately be directed
toward evidence-based quality care. Neither PhD nor DNP
can accomplish this alone.

19

Joint recognition that together, DNP and
PhD colleagues can create seamless
systems of Evidence-Based Practice
research to achieve desired patient
outcomes

20

Preparing Practice Scholars:
What Essential Information do DNPs
Need to Interpret Evidence?

Susan Weber Buchholz PhD, ANP-BC
Geri M. Budd PhD, FNP-BC, FAANP

Organizing Framework

- Clarity of what drives the framework is critical
- What drives the framework is the purpose for which it originally exists…

…What is the role of the DNP graduate?
- Discussed in the first part of this symposium
- To engage in advanced nursing practice
- To be leaders in evidence-based practice healthcare

22

Organizing Framework

- AACN Essentials III
- To be a proficient DNP graduate:
  - Need to know how to translate research findings into everyday practice, evaluate those findings in practices and assess the outcomes of project implementation
  - In the translation of new science
    - Need to know how to interpret and use the findings
    - Need to know how to generate evidence in practice settings

23

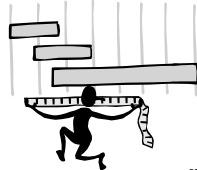## Essential Research Skills

- PICOT question
  - Patient/Problem/Phenomenon
  - Intervention
  - Comparison
  - Outcome
  - Time
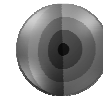
24

Essential Research Skills

- Strategic search strategy

- Variable identification

- Level of measurement

25

Basic Research Understanding

- Psychometric properties
  - Reliability

  - Validity

  - Feasibility

26

Basic Research Understanding

- **Credibility** - confidence in the 'truth' of the findings
- **Transferability** - showing that the findings have applicability in other contexts
- **Dependability** - showing that the findings are consistent and could be repeated
- **Confirmability** - a degree of neutrality or the extent to which the findings of a study are shaped by the respondents and not researcher bias, motivation, or interest

- (Lincoln and Guba, 1985)

27

Basic Research Understanding

- Research designs
  - Quantitative
    - Pre-experimental
    - Quasi experimental
    - Experimental

  - Qualitative
    - Multiple methodologies

28

Basic Research Statistics

- Descriptive statistics
  - Always need to know how to describe the basics of descriptive statistics.

- Inferential statistics
  - How much inferential statistical knowledge is enough?
  - Depends on the design needed to answer the clinical question.

29

Literature Appraisal

- Accuracy

- Relevance

- Applicability

30

Systematic Review

Rigor – example of Joanna Briggs Institute systematic review steps

Joanna Briggs Institute Systematic Review Steps	Rigor Achieved by Using These Standards
1. Protocol	Is peer reviewed
2. Retrieve studies	Is exhaustive process
3. Appraise studies	Is blinded, dual process, standardized tools
4. Include/exclude studies	Is dual process
5. Extract data	Is blinded, dual process, standardized tools
6. Pool data	Is done using standardized technique
7. Synthesize & report	Is peer reviewed

31

Systematic Reviews

Interpretation of dichotomous data

Interpretation of continuous data

Meta-aggregation data review

Forest Plot? Effect Size? Odds Ratio? Mean? RR?
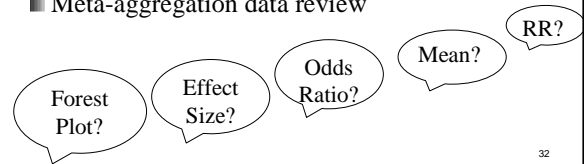
32

Evaluation of Expert Content

Informed by evidence-based practice

Narrative content

Consensus

33

Evaluation of Expert Content

Levels of evidence

Evaluation of Expert Content

Classification of recommendations

Rating Scheme for the Strength of the Recommendations

Classification of Recommendations†
A. There is good evidence to recommend the clinical preventive action
B. There is fair evidence to recommend the clinical preventive action
C. The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making
D. There is fair evidence to recommend against the clinical preventive action
E. There is good evidence to recommend against the clinical preventive action
L. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making

†Adapted from the Classification of Recommendations criteria described in the Canadian Task Force on Preventive Health Care.

35

Using Evidence Based Practice as a DNP

Evidence based practice is informed by:
– Best available evidence
– Clinical expertise
– Patient preferences
– Available resources

Integrating
– Basic statistical knowledge
– Systematic reviews
– Expert content/Clinical experience

36

Clinical Outcome Research

- Translation of research into practice
- Collaborative outcome research participation
- Developing best practices & practice guidelines
- Facilitating the evaluation of systems of care
- Facilitating client-centered care

37

What is the role of the DNP in Translational Research and Implementation Science?

Elizabeth D. Carlson, PhD, MPH, APRN-BC
Margaret Hammersla MS, CRNP

Implementation Science

- The scientific study of methods to promote the systematic uptake of clinical research findings and other evidence-based practices into routine practice, and hence to improve the quality and effectiveness of health care

- http://www.implementationscience.com/info/about/

39

Implementation Science

- Skill necessary for successful project
  - Understanding of Clinical Setting beyond personal practice
    - Social structure
    - Policy impacting practice
  - Awareness of relevant current research trends
  - Identification of a "problem"

40

Essential Research Skills

- PICOT question
  - Patient/Problem/Phenomenon
  - Intervention
  - Comparison
  - Outcome
  - Time

41

Example #1

Use of Electronic Health Record in the Measurement of Nurse Practitioner Performance

Purpose: To determine if an evidence based electronic PICC line note could be used to evaluate performance or outcomes

Example #1

- Objectives
  - Determine tools currently in use
  - Evaluate perception of currently used tools
  - Build and implement the note
  - Note elements were analyzed to determine usability
  - Evaluate implementation process and NP satisfaction

43

Example #1

- Problem
  - Performance and outcomes of PICC line insertion often not visible
  - Few frameworks to measure
- Intervention
  - Literature review
  - Survey of surrounding hospitals
  - Development and Implementation of PICC line note

44

Example #1

- Outcome
  - PICC line performance not routinely measured
  - Electronic procedure not demonstrated the potential to evaluate NP performance, outcomes, and competence

45

Example #2

Transitioning Into NP Practice

Purpose: to develop a web based guideline to assist RN's in their transition into NP practice
  - Decrease time needed to navigate the state's certification process
  - Decrease time needed to complete the collaborative agreement process

46

Example #2

- Objectives
  - Collect resources related to completion of NP certification and collaborative agreement process
  - Develop Guidelines
  - Validate and implement new process
  - Evaluate improved process

47

Example #2

- Problem
  - Complex, Multi-page NP collaborative agreement documentation resulting in delays in transition to NP practice and patient access to care
- Intervention
  - Extensive review of regulations and current practice
  - Revised documents were piloted on a panel NP's and trial on student NP volunteers

48

Example #2

- Outcomes
  - Pre/post test analyzing communication between NP's before and after implementation of the revised process as well as time to final approval

  - Improved communication process
  - Decreased time needed for NP receipt of authorization to practice

49

Needed Skills

- Evaluations of research design
  - During lit review to determine if evidence is valid/reliable
  - Identifications of validity threats

- Statistics
  - Interpreting statistics in research articles for appropriateness
  - Determining appropriate method to evaluate project outcomes

Key Research Skills Needed

- Ability to critically review the research
  - Design (validity, reliability)
  - Measurement
  - Appropriateness of statistical analysis
    - Descriptive
    - Inferential
  - Generalizability

51

Key Research Skills Needed

- Identification and Communication with stakeholders

- Needs Assessment

- Evaluation
  - Ability to measure and analyze outcomes

52

Implementation Science

- Expectation of DNPs to provide leadership in practice settings

- Finding the best methods to provide ongoing implementation of evidence based practice

- Using change frameworks and project management skills

53

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54

Before We Go To Questions

55

Challenges

- DNP scholarship is NOT *PhD-lite,* rather
  - Scope of scholarship skill continuum is broader—how to achieve in 36-45 SHs post-masters?
- DNP recognition of research activities beyond their individual skills needing PhD consultation
- PhD recognition of research activities beyond their individual skills needing DNP consultation

56

Challenges

- Can there be too many pre-post test one group DNP studies? What about the control group?
- What is the basic level of foundational knowledge needed to interpret evidence?
- Is there a significant concern that there may be overlap in how research is taught in the DNP versus the PhD program?

57