The Interdisciplinary Collaborative Experience of Designing Family-Focused, Health Informatics Nursing Curriculum

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Nurses are in a Pivotal Position

Families want nurses to:
- initiate relationships
- communicate
- guide
- develop trust
- include and invite families

(Denham, Eggenberger, Young & Krumwiede, 2015)
Technology Changes Facing the Profession

Healthcare systems becoming more data driven:
- capture needed data
- interpret data
- data-informed practice changes

(Jeffries, 2016)
“The biggest challenge is that you have a nurse that understands nursing, but does not understand technology, or an IT person that understands technology and databases but doesn’t understand healthcare.”

- MSU Health Informatics Advisory Board (2016)
Call to Action

“Nurses are expected to provide safe, competent, and compassionate care in an increasingly technical and digital environment”

(Ball, Douglas & Hinton, 2014)

Nursing informatics

• combination of computer science, information science and nursing science

• to assist in the management and processing of nursing data, information and knowledge

• to support the practice of nursing and the delivery of nursing care

(Graves & Corcoran, 1989)
Foundation for an Interdisciplinary Degree
Nursing Learning Experiences

- Integrate research
- Use evidence in practice
- Build competence, confidence and enthusiasm
- Emphasis on family constructs
“We are creating such vast stores of data that no one can get hands on it. [There is] no use for a million rowed table if there are no analytics behind it!”

- MSU Health Informatics Advisory Board (2016)
Computer Information Technology
Learning Experiences

• Strong Technical and Problem Solving Skills
• Applied Learning Experiences
• Industry Partner Engagement
Interdisciplinary Academic Partnership

Information Technology

Applied Data Analytics

Healthcare

Clinical Practice

Professional Leadership

Healthcare Advancement

Health Informatics & Analytics  Professional Science Master
Health Informatics and Analytics: Intersection between Nursing Care and Technology
Health Informatics and Analytics Graduate Program

Mission

To impact personal, family, and societal health through the preparation of health care or information technology professionals to effectively use health informatics and analytics.
Program Emphasis

• Solid healthcare background
  • workflows, quality management, and types of decisions made

• Strong technical skills
  • data capture, storage, retrieval, evaluation

• Predictive analytics
  • using data to impact patient care, anticipate trends, create targeted solutions
Curriculum Development Process

• Collaboration between School of Nursing and Computer Information Science faculty
• A board of experts from across healthcare sectors and roles provided key, external insights into essential learning outcomes
• Examined existing programs and certifications
• Explored workforce demand and employer expectations
• Reviewed literature about informatics within various healthcare settings
• Incorporate affiliation requirements for a Professional Science Masters
Backwards Design to Develop Curriculum

What is Backward Design?
• A tool for curriculum design, assessment, and instruction
• Focus on developing and deepening understanding
• Thinking more purposefully and carefully about the nature of design
• Content logically inferred from desired results, not derived from teaching materials

What is the Value in Using?
• Provides a framework for intentional design of curriculum, assessment, instruction
• Keeps design process focused on the learning outcomes

What is the Process?
Stage I: Identify results
   (define program outcomes)

Stage II: Determine acceptable evidence
   (how to know if outcomes were met)

Stage III: Planning learning experiences and instruction
   (intentional design/selection of courses/projects to achieve and evaluate results)
Conceptual Framework

• Fink’s Significant Learning Experience Framework based in educational theory

• Educators have the responsibility to
  • develop significant learning experiences
  • centered on the scientific and praxis research of the discipline
  • transform education

• Fosters interprofessional teaching & learning experiences

(Fink, 2013)
The Taxonomy of Significant Learning

(Fink, 2013)
Health Informatics and Analytics
Graduate Program Outcomes

1. Integrate professional leadership traits and communication techniques that foster collaborative discovery of advances in population health, experience of care, and cost management.

2. Evaluate quality of existing data and establish retrieval methods to create targeted results that can be applied to health-related questions.

3. Propose quality and performance indicators, and episodes of care, in a way that makes data applicable to healthcare decision making.

4. Interpret data related to health concerns, population health, and business metrics to retrieve results for targeted purposes that lead to cutting edge, real time information.

5. Communicate strategies for health-related decision-making at personal, institution, and broader population or geographic levels.

6. Prioritize business needs, identify opportunities for improvement, manage the selection and implementation of a project, review and assess the results.
Cross-Discipline Foundation Course

• IT 501 Technology Fundamentals for Informatics and Analytics
  OR
• N 501 Health Fundamentals for Informatics and Analytics
Family Nursing Course Series

• N624 Evidence-Based Practice through Informatics and Analytics
• N625 Data Informed Clinical Reasoning
• N626 Health Informatics and Analytics in Clinical Practice
Information Technology Course Series

- IT 540 Database Management Systems II
- IT 544 Data Mining and Warehousing
- IT 551 Data Informed Leadership
- IT 641 Distributed Database Processing
Capstone Course

• N 692 Health Informatics and Analytics Practicum
  OR
• IT 692 Health Informatics and Analytics Practicum
“We must make sense out of data, apply what has been learned, and to project further into the future through continued learning!”

This program will train students to, “Extrapolate data to turn it into information, turn information into knowledge, and knowledge into wisdom.”

- MSU Health Informatics Advisory Board (2016)
The Opportunity

• Nurses as recipients of data
• Nurses as users of data
• Nurses as innovators through data

• New curriculum – Health Informatics
  – Applied Aspects of Family-focused Nursing
  – Solid understanding of Information Technology
The Impact

• New programs developed for emerging discipline of Health Informatics and Analytics

• Students will become:
  – Visionary leaders who will be capable of influencing global health outcomes through data analysis, knowledge discovery, and dissemination of cutting edge innovations.
  – Graduates who are knowledgeable in both family-focused nursing and health informatics are well poised for dynamic careers of the future.
The Results

Blending health informatics and family nursing science will empower nurses to lead interprofessional healthcare teams through data-informed decision making resulting in changes that enhance societal health outcomes.
Discussion
References


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