USING QSEN KSA'S TO BUILD AN UNDERGRADUATE ONLINE NURSING INFORMATICS COURSE

Beth Vottero PhD, RN, CNE
Impetus for Change

- Addition of a new undergraduate course: Nursing Informatics
- Student feedback
  - General education course: Basic Computing
- Teaching computer content within the context of nursing
Course Structure

- **Online Delivery**
  - 16 weeks using BlackBoard LMS
  - All PP lectures have voice-overs using Adobe Presenter
  - Course developed using Quality Matters™
  - Students required to post on 2 separate days and respond to at least two classmates each week.

- **Four Modules**
  - Background and Foundation for Nursing Informatics
  - Nursing Informatics Competencies
  - Applications and Roles for Nursing Informatics
  - Current Issues in Nursing Informatics
<table>
<thead>
<tr>
<th>QSEN Competency</th>
<th>Teaching/Learning Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain why information and technology skills are essential for safe patient care</td>
<td>Innovations Paper Blog #1</td>
</tr>
<tr>
<td>Identify essential information that must be available in a common database to support patient care</td>
<td>Discussion #3 Discussion #9</td>
</tr>
<tr>
<td>Contrast benefits and limitations of different communication technologies and their impact on safety and quality</td>
<td>Discussion #1 (dissemination) Discussion #4 (competencies) Discussion #10 (competencies)</td>
</tr>
<tr>
<td>Describe examples of how technology and information management are related to the quality and safety of patient care</td>
<td>Innovations Paper</td>
</tr>
<tr>
<td>Recognize the time, effort, and skill required for computers, databases and other technologies to become reliable and effective tools for patient care</td>
<td>Discussion #3 Roles Paper Word, Excel, PP Tutorials Discussion #6</td>
</tr>
<tr>
<td>QSEN Competency</td>
<td>Teaching/Learning Strategy</td>
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<tr>
<td>--------------------------------------------------------------------------------</td>
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<tr>
<td>Seek education about how information is managed in care settings before providing care</td>
<td>Discussion #1 and #2</td>
</tr>
<tr>
<td>Apply technology and information management tools to support safe processes of care</td>
<td>Innovations Paper</td>
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<tr>
<td></td>
<td>Discussion #9</td>
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<tr>
<td>Navigate the electronic health record</td>
<td>Clinical Courses</td>
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<tr>
<td>Document and plan patient care in an electronic health record</td>
<td>Clinical Courses</td>
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<tr>
<td></td>
<td>Discussion #1</td>
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<tr>
<td>Employ communication technologies to coordinate care for patients</td>
<td>Discussion #1</td>
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<tr>
<td></td>
<td>Discussion #4</td>
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<td></td>
<td>Discussion #10</td>
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<tr>
<td>Respond appropriately to clinical decision-making supports and alerts</td>
<td>Blog #4</td>
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<tr>
<td>Use information management tools to monitor outcomes of care processes</td>
<td>Roles Paper</td>
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<td></td>
<td>Innovation Paper</td>
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<td></td>
<td>Discussion #6</td>
</tr>
</tbody>
</table>
## Attitude

### QSEN Competency Teaching/Learning Strategy

<table>
<thead>
<tr>
<th>QSEN Competency</th>
<th>Teaching/Learning Strategy</th>
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</table>
| Appreciate the necessity for all health professionals to seek lifelong, continuous learning of information technology skills | Blog #2  
Word, PP, Excel Tutorials                   |
| Value technologies that support clinical decision-making, error prevention, and care coordination | Innovations Paper  
Blog #4                                             |
| Protect confidentiality of protected health information in electronic health records | Discussion #8  
Health Privacy Awareness Course                   |
| Value nurses' involvement in design, selection, implementation, and evaluation of information technologies to support patient care | Roles Paper  
Discussion #7                                    |
| Appreciate the necessity for all health professionals to seek lifelong, continuous learning of information technology skills | Blog #2  
Word, PP, Excel Tutorials                   |
| Value technologies that support clinical decision-making, error prevention, and care coordination | Innovations Paper  
Blog #4                                             |
Activity: Website Evaluation

Assignments:

- Website evaluation using Health on the Net (HON) Code standards
- Complete a SMOG (simple measure of gobbeldygook) analysis
- Post findings to the discussion forum
  - Intended audience
  - Findings from HON standards
  - SMOG level and appropriateness for intended audience
# Website Evaluation Rubric

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Needs Improvement</th>
<th>Unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critically evaluates the website using the HON Code guidelines</td>
<td>Provides examples from the website and thoroughly discusses the principles in relation to the website.</td>
<td>Some examples given, not all principles are addressed in depth 5</td>
<td>Cursory overview of the website. Critical information is missing or lacking. 0</td>
</tr>
<tr>
<td>SMOG readability</td>
<td>Provides findings from the readability calculator finding 2</td>
<td></td>
<td>Does not address the readability 0</td>
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<tr>
<td>Benefits and limitations</td>
<td>Critically examines the website providing benefits and limitations 8</td>
<td>Discusses benefits and limitations of the website superficially 4</td>
<td>Does not address benefits and limitations 0</td>
</tr>
<tr>
<td>Proposed changes</td>
<td>Proposes changes based on findings from the HON Code with justifications. 5</td>
<td>Proposes changes without justifying the rationale 2</td>
<td>Does not address proposed changes 0</td>
</tr>
</tbody>
</table>
Assignment: NI Roles

- Roles paper (two options)
  - Interview a nurse working in an informatics role
  - Compare and contrast three position descriptions
    - Both based on the ANA SoP for a Nurse Informaticist
  - Requirements:
    - Create a PP presentation on the findings
    - Submit a 2-3 paragraph synthesis of findings to the discussion forum
## Assignment: NI Roles

<table>
<thead>
<tr>
<th>ANA S&amp;S</th>
<th>Position 1</th>
<th>Position 2</th>
<th>Position 3</th>
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</thead>
<tbody>
<tr>
<td>Educational</td>
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<td>Requirements</td>
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<td>Certification</td>
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<td>Required?</td>
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<td>Project Management</td>
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<td>Clinical Information</td>
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<td>Management</td>
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<td>Quality and</td>
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<td>Benchmarking</td>
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<td>Telehealth</td>
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<td>Research</td>
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<td>Education of staff</td>
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<tr>
<td>EHR or EMR?</td>
<td></td>
<td></td>
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<tr>
<td>Area</td>
<td>Unacceptable</td>
<td>Needs Improvement</td>
<td>Excellent</td>
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<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
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<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Identifies the skills/competencies for the three positions</td>
<td>Cursory responses that does not reflect deeper meaning. 0</td>
<td>Some depth in responses. Lacks exploration of topic. Selects position descriptions that have minimal information. 5</td>
<td>Provides detail about how the position description includes the characteristics. Describes how the different positions meet the standards of NI practice 10</td>
</tr>
<tr>
<td>Power Point presentation</td>
<td>Cursory responses that do not reflect thoughtful analysis. 0</td>
<td>Provides some information. Describes with thoughtful analysis the comparison of the positions. Details what should be included in a position description for a nurse informaticist. 5</td>
<td>Provides a Nursing Informatics position description that includes core areas and thoroughly/clearly explains responsibilities for a nurse informaticist. Clear and analytical comparison of positions. 10</td>
</tr>
<tr>
<td>Posts synopsis to discussion thread</td>
<td>Cursory synopsis that lacks reflection and insight. 0</td>
<td>Synopsis provides information that may not reflect thoughts and insights. 4</td>
<td>Synopsis provides a clear overview of the positions with reflection, insights and thoughtful analysis 8</td>
</tr>
<tr>
<td>Assignment submitted to appropriate areas</td>
<td></td>
<td>0</td>
<td>Posts to the discussion thread and to the assignment dropbox 2</td>
</tr>
</tbody>
</table>
Activity: Word, Excel, PP Tutorials

Starts with basic skills

- Tutorials on Word, Excel, and PowerPoint
  - Created in collaboration with IT
  - All relate to nursing content and use of programs
- Library tutorial on search strategies
  - Created by nursing librarian
Assignment: Innovations Paper

• Innovations Paper
  • Perform a search (web, library database, etc.) to identify new technology for health care delivery. The new technology must impact quality patient care in terms of delivery or outcomes.
  • Formal APA paper
  • Template provided
Innovations Paper

• **Background**
  • Describe the new technology.
    ▪ What is it? Describe the technology.
    ▪ What does it do? How does it work?

• **Quality**
  • What is the impetus for the new innovation? Why is it important?
    ▪ Relate the new technology to patient care quality and safety. How does it support quality and safety? This is the selling point for your innovation.
      ▪ What quality outcomes does it affect?
      ▪ How will effectiveness be measured?
    ▪ Provide reference data and/or statistics that demonstrate the need. For example, a new glucometer allows the nurse to see trends and downloads wirelessly into the computer charting. Perform a literature search on error rates and glucometers or check the manufacturer’s fact sheet for research that supports the need for the new glucometer. This allows an understanding of the broader need for changes to support the new technology.
Stakeholders

Who will be impacted by the new technology? Identify those that would need to accept the new technology.

- Who are the stakeholders? For example, the innovation might impact the following areas:
  - Patients
  - Nurses
  - Physicians
  - Lab
  - Information Technology

- Provide a rationale as to why the stakeholders were selected. For example, you might include IT as a stakeholder for the glucometer example above. The rationale is that they need to be included from the beginning to ensure the functionality of the glucometers, if they work with current systems, and if other resources are necessary to make them function as intended. Not including them could have a major impact, especially if the technology could not ‘speak’ with current systems.
Organizational Impacts

What are the impacts on education, administration, direct nursing care, and patient outcomes?

- What education would be necessary to implement the new technology? Who would perform the education?
- What impact would administration have on the new technology? Using the glucometer example, the Directors of Laboratory Services, Pharmacy, Informatics, Information Technology, and Unit Directors would need to be on board with the technology. Explain how each perspective affects acceptance of the technology.
- How does the technology affect nursing care? What impact does it have on nursing?
- What patient outcomes are impacted by the new technology? In the glucometer example, it may be rapid detection of trends, quicker response with interventions, or assist the patient in developing an understanding of the changes in their glucose levels.

Conclusion that summarizes the main points.
<table>
<thead>
<tr>
<th>Category</th>
<th>Unacceptable</th>
<th>Needs Improvement</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Technology Background</td>
<td>Cursory overview of technology</td>
<td>Provides some detail, missing explanation of what it does or how it works</td>
<td>Describes the technology fully</td>
</tr>
<tr>
<td>Quality Impact</td>
<td>Does not address the impact on quality. Does not provide statistics or reference data.</td>
<td>Loosely relates the technology to patient care quality and safety. Unclear reference data or supporting statistics.</td>
<td>Relates the new technology to patient care quality and safety. Fully describes the impact with reference data or statistics.</td>
</tr>
<tr>
<td>Stakeholder Identification</td>
<td>Identifies some stakeholders but is missing key people. Rationales are not provided.</td>
<td>Identifies most of the stakeholders and/or rationale does not support their inclusion.</td>
<td>Clearly identifies all stakeholders and provides rationale for their inclusion.</td>
</tr>
<tr>
<td>Organizational Impacts</td>
<td>Does not clearly discuss the impact on education, administration, direct nursing care, and patient outcomes. Does not demonstrate critical thinking regarding the impact.</td>
<td>Does not clearly discuss the impact on education, administration, direct nursing care, and patient outcomes or is missing critical thinking regarding the impact.</td>
<td>Clearly discusses impacts on education, administration, direct nursing care, and patient outcomes, demonstrating critical thinking regarding the impact.</td>
</tr>
<tr>
<td>Conclusion</td>
<td>Does not tie in major points of the paper</td>
<td>Ties in most major points of the paper.</td>
<td>Ties together major points of the paper clearly.</td>
</tr>
<tr>
<td>References in APA format</td>
<td>More than 8 APA errors in the reference list</td>
<td>4-7 APA errors in references</td>
<td>0-3 APA errors in references</td>
</tr>
<tr>
<td>5 peer reviewed articles included</td>
<td>Less than 3 peer-reviewed articles</td>
<td>4 Peer reviewed articles</td>
<td>5 Peer reviewed articles</td>
</tr>
<tr>
<td>APA format, grammar, and spelling</td>
<td>0</td>
<td>1-2</td>
<td>3</td>
</tr>
</tbody>
</table>
Blog #2: Nurses as Knowledge Workers

knowledge

continually

innovators
gathered
leads
formal
understand
apply
earlier

innovation

optimal
interaction
taught
needed

communication

critical
work
order
mercy

healthcare
becoming
members

adapting

growing

cared

read

gathering

acquired

initiate

health

workers

client

Nursing

Knowledge

interesting

angels

nurse

analytical

evidence-based

planning

delivering

wisdom

Nurses

learning

information

data

thought

thinking

striving

better

reach

evolves

thought

education

metastructure

cognitive

classes

assess

act

creating

interpreting

definitely

process

level

nonroutinenew

skills

required

Perspective

believe

data

learning

nurse

delivering

wisdom