

# Using Qualitative Software in Curriculum Development

by

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## Abstract

Informatics includes innovative use of tools for managing nursing data. Qualitative software can be used for a rapid content analysis of nursing curriculum using computer capabilities for managing narrative data in linking files. The software allows educators to code similar concepts, threads, and learner expectations to examine patterns and adequacy of content. Certain key concepts and behaviors can be evaluated at various curricular levels. The product of analysis is a comprehensive report based on the coded framework, thus providing evidence of an integrated curriculum. Program objectives, course descriptions, learner objectives, and professional practice criteria are examples of narrative data used in this analysis of health promotion in a nursing curriculum.

## Editorial

Curriculum development and evaluation present technological opportunities that can be facilitated using qualitative software. NVivo (QRS NUD\*IST Vivo) can be used to provide a critical and consistent review of curriculum courses and evaluate them for criteria adequacy. Curriculum mapping, course evaluations, and matching course objectives with external standards can be done logically and rapidly. Preparing a report is even simpler. This project example involved matching courses in health promotion in a

nursing curriculum with professional standards and responsibilities of health educators and nurses as defined by an accrediting agency.

The first step was getting all documents into electronic form. It was helpful to have the standards as an online document that could then be imported without typing a new document. NVivo does allow use of proxy documents which could be an abbreviated representation of the standards. However, that would greatly reduce the ability to compare documents side by side. Syllabi with course objectives were imported as rich text documents that allowed editing of text while examining and comparing. Narrative data, whether paragraphs or lists, are easily analyzed for content.

Once documents were imported, coding began. Coding provides a way to identify similar concepts, statements, and examples of a standard or criterion. Coding effectively collects these representations in one place called a node. Comparison was accomplished by coding to these various nodes. Each objective was coded to a standard. For example, the health education objective: discuss the interrelationship of physical, mental, emotional, social, and spiritual health was coded onto the responsibility labeled “assess individual and community need.” Under each responsibility competencies were coded by number representing Responsibility I, Competency A 1. Then at the node labeled “responsibility of assessment,” the competency labeled “identify diverse health-related databases” was coded for each instance in a course objective. This process allowed course objectives to be compared to each responsibility, thus providing evidence that the course adequately prepared students for the expected responsibilities.

Lower level or upper level courses were grouped and quickly compared to level responsibilities using the assay tool in the software package. Once each objective was

coded, a report was developed that showed a matrix of course titles and the standards covered by the objectives in each course syllabus. The resulting report provided the number of responsibilities addressed in each course. Gaps in the curriculum were readily seen and could be addressed.

This procedure can be adapted for use with curriculum mapping. Course documents can be gathered into sets of similar courses. Major concepts are mapped in the curriculum courses and connecting threads are visualized providing evidence that program objectives and major concepts of the discipline's paradigm are addressed. Behaviors expected at the progressive level of study can be tracked using the Find tool. Key terms representing expected behaviors would be searched. For example, words such as applying leadership skills, critically analyzing, and functioning as a team leader would be searched in upper level course expectations. A report can be generated that shows the number of occurrences. A similar search tool for key concepts in the course descriptions provides a rapid method of differentiating courses that are designed to build on each other, for example, foundations, strategies, and courses providing internship and practice. Analysis of the choice of verbs in objectives is helpful to assure that learner assessments are appropriate to the students' level. Sophomore courses would have more words such as discuss and describe and higher level courses would have more words such as analyze and apply. The search tool quickly displays verbs as they appear in each course by levels.

The output can be put in table format or in a model. NVivo has a modeling tool for visualizing conceptual linkages. Furthermore, whether online table or model, it is a live document. Nodes act in much the same way as hypertext and allow a one click retrieval of the narrative data. Memos, data bite links, even pictures, videos, and sound

bites can be embedded for illustration. A teaching method proposed for the course can be included with a video clip or recommended textbook can be linked to its publisher's information.

These tasks can also be completed with much time, colored markers, underlining, and penciling memos in the margins. However, using the software produces a better product quicker. Also, the finished product is a report and not a scribbled page. Presentation of findings can be highly technical with the use of embedded media or as simple as a spreadsheet. As with all technology, it is only as good as the operator. If documents are mislabeled when imported or codes are based on inaccurate interpretations of the objective, the output will be flawed. Practice using this software will enhance any product, including what it was designed for, qualitative research (Richards, 1999). Application of this software to content analysis of curriculum development and mapping is an innovation to enhance curriculum development through informatics.

### **Reference**

Richards, L. (1999). *Using NVivo in qualitative research*. Thousand Oaks, CA: SAGE.

### **Author's Bio**

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Dr Jennifer Shearer is Associate Professor in the Derry Patterson Wingo School of Nursing at Charleston Southern University. She received her bachelor of science in nursing from the University of South Carolina, her master of science in nursing with focus in community health from the Medical University of South Carolina, and her Doctor of Philosophy in Nursing from the Medical University of South Carolina. She is teaching undergraduate courses in community health and health education/health promotion. Dr. Shearer is on the board of Sigma Theta Tau International Gamma Omicron at-Large Chapter and past board member of the South Carolina League for Nursing and presently serving as NLN Ambassador for the school of nursing. She holds NLN certification as a nurse educator. Her professional interests include parish nursing, rural nursing, and health education/disease prevention services with vulnerable groups in the community.