New Health Information Management (HIM) Competencies? Teaching Critical Thinking Using an Unfolding Case Study

by Brenda Tyczkowski, RN, DNP

Abstract

With the AHIMA Foundation's establishment of new professional competencies for health information management (HIM) comes the opportunity to reimagine how lessons are presented to students. The use of unfolding case studies fosters a learner-centered classroom, where the student is actively engaged in the learning process. In this format, information is presented in several stages. At each stage, the student engages in critical thinking and problem solving. An unfolding case study was developed for use in the Quality Assessment and Improvement course taught in the University of Wisconsin Health Information Management and Technology (HIMT) program. This case study allows students to demonstrate nine of the professional competencies defined by the AHIMA Foundation.

Keywords: AHIMA competencies, unfolding case studies, critical thinking, problem solving

Introduction

In 2014 new professional competencies for health information management (HIM) programs at the associate, baccalaureate, and graduate levels were defined by the AHIMA Foundation.[1] With the revised competencies came a shift from specific suggested curricular components to the requirement of student mastery of the competencies at various levels of Bloom's Taxonomy.[2]

Traditional learning approaches, in which students are required to read a text and listen to lectures, are instructor oriented. Student participation is generally passive. In contrast, a learner-centered classroom can create greater student engagement. "Learner-centered classroom environments promote learning that is at the analysis, synthesis, and evaluation level of Bloom's taxonomy of cognitive educational outcomes. This level is indicative of a higher level of cognition."[3] Other features of a learner-centered classroom include a focus on integrated learning and an invitation for students to engage with the materials.[4]

Educators need to review curricula and courses to ensure that they meet these new competencies. While instructors may be tempted to add more assignments to fulfill the competencies, continually adding assignments, without removing any, can be overwhelming for both students and faculty. Instead, the introduction of the new competencies provides an excellent opportunity to explore new ways of delivering lessons and addressing the required competencies. This article examines the use of an unfolding case study to meet the revised competencies surrounding quality improvement.

Background

Case studies are "written problem-oriented descriptions of events or situations that require students to analyze a problem and offer solutions."[5] In traditional case studies, information is presented all at once. While useful, this static presentation of information does not mimic the workplace, nor does it involve dynamic problem-solving skills.

Unfolding case studies present information in several stages, allowing students to receive information much in the manner they would in the workplace. Opportunities are created to consider how new data supports or refutes previously formed hypotheses.

An overriding expectation of all HIM students is that they develop critical-thinking and problem-solving skills. This goal can be accomplished through the use of an unfolding case study that actively engages HIM students in problem solving associated with a specific situation. An ideal case study moves from simple to complex concepts, with instructor feedback at every stage.[6] Students begin with a general conceptualization of the situation based on initial information presented; then, as the case study evolves, the students are required to differentiate relevant from less relevant case information and analyze solutions to solve problems. Students' understanding of the concepts deepen as the dynamic situation evolves.[7]

Unfolding case studies are based on information processing theory.[8] Key components of information processing theory include the following:[9]

- Students must be able to relate new knowledge to previous knowledge.
- New concepts must be organized in their delivery.
- New concepts must be presented at the appropriate educational level for the student.
- Students can handle only a certain amount of new knowledge at a time.
- What is learned by the student must be constructed by the student, not simply taken from the environment.
- Students need to be active in the learning process.

Developing a skillfully crafted unfolding case study involves planning and several considerations. Which AHIMA Foundation competencies for HIM will be addressed? What are the student learning outcomes? In how many stages should the information be delivered? What activities or questions will elicit problem-solving and critical thinking? Against what criteria or standards will student responses be measured?[10] Reese (2006) encourages that the following questions be answered before developing the case study: "What is expected of the learner? Which groups will participate in the scenario—seasoned or less experienced students? What standards, competencies or guidelines will be highlighted?"[11]

Brainstorming a variety of scenarios, "trying each one on" to see how it fits students' needs, is a great place to start. Consider what type of setting would provide the most meaningful context. Whether the students are novices or experts on the topic will also help shape the scenario.

Unfolding Case Study Example

An unfolding case study was recently developed and piloted with four students for use in the Quality Assessment and Improvement course at the University of Wisconsin HIMT program (http://himt.wisconsin.edu/). The HIMT program is an online baccalaureate-level collaborative program, with courses offered by the University of Wisconsin–Green Bay, the University of Wisconsin–Stevens Point, the University of Wisconsin–Parkside, and the University of Wisconsin–La Crosse, with support provided by the University of Wisconsin Extension. This program, which is relatively new, began accepting students in 2012. Students may select either a management or a technology track within the program.

As the new AHIMA Foundation competencies for HIM were reviewed, the decision was made to develop and pilot a quality improvement course that would meet numerous competencies. Table 1 outlines the nine competencies covered in this unfolding case study.

This course, Quality Assessment and Improvement (HIMT 430), is an upper-level course taken by students in both the management and technology tracks. The Quality Assessment and Improvement course is delivered in a 14-week semester, with one lesson per week. The course is based on the Office of the National Coordinator for Health Information Technology (ONC) Curriculum Development Centers program "Component 12: Quality Improvement."[12] Students must complete the Statistics for Healthcare course (HIMT 350) prior to enrolling in HIMT 430. Individual student learning outcomes for the Quality Assessment and Improvement course include the following:

1. Organize and coordinate facility-wide quality management and performance improvement programs.
2. Analyze clinical data to identify trends.
3. Analyze and present data for healthcare decision-making (such as demonstrating quality, safety, and effectiveness of healthcare).

Development of the unfolding case study began with consideration of the type of setting (hospital, nursing home, etc.) in which the case should be developed. Because many of the students in the program anticipate employment in hospitals, a hospital setting was selected. While a wide variety of measures, such as readmission rates, falls, infection rates, and so forth, are included in a robust quality improvement program, the monitoring of medication administration error rates was selected as the topic for the case. This measure could transfer to other settings, and information is readily available in the literature about this topic.

The case was delivered in four stages. Each stage was presented several weeks apart. The four stages followed the steps of the Plan-Do-Study-Act (PDSA) cycle of the quality improvement Model for Improvement (competency III.H.3).[13] Using this model reinforced one of the key concepts of the course, which was the need for continuous reevaluation of the findings. Table 2 shows a summary of the information given in the assignment and the four steps of the unfolding case.

In the first stage of the case, students learned that a sharp increase had occurred in the number of medication errors on the 30-bed Med-Surg unit. They found out about concerns regarding new nurses working on the unit and nurses working on the night shift. Additional concerns addressed medication administration during peak work times on the unit. Note that not all of this information was reflected in the spreadsheet presented in stage two of the case. Students began to gather data from the literature about medication administration errors to develop an understanding of the problem and develop some insight as to what might be causing the problem (competency III.E.1).

The assignment for this stage is a formal paper, written in American Psychological Association (APA) format, which summarizes the literature on medication errors. In previous courses students learned how to use online library resources and write in APA style, so this assignment reinforced previous learning.

During the second stage of the case, students learned that the medication administration policies and procedures perhaps were not being followed by the staff. After reviewing the policy and a transcript of an interview with a staff nurse, students made comparisons to validate their findings. New information emerged about difficulties the staff experienced with nursing unit workflow. When medications were being readied in the morning, staff had a difficult time operating in a cramped and noisy environment. Students were also to consider whether any computer-based clinical decision support systems would be beneficial. They received raw data on an Excel spreadsheet depicting medication errors on the unit and began to utilize critical thinking skills to analyze the data and relate the data to other sources of information regarding medication errors (competencies III.C.1, III.C.2, III.C.4, and III.C.5).

Students were also asked to perform a brief chart review of five patient records to determine whether additional information could be found within the individual medical records. For this portion of the

assignment, students use Neehr Perfect, an educational electronic health record.[14] This part of the assignment afforded students the opportunity to familiarize themselves with pertinent information within individual records while considering whether the records held useful information and whether the staff members were entering data as required by the facility policy (competency III.A.1).

In the second stage of the case, the students began to see that some of the concerns raised in the first stage of the case could be ruled out. They also gathered new information and incorporated it into their analysis of the case.

The assignment for this stage of the case was a loosely structured paper that required the students to outline their preliminary findings. Most students submitted a series of bullet points, summarizing key facts and possible conclusions. In the pilot of the course, one student noted a trend in the data not previously identified by faculty. The student observed that the incidence of errors was higher during the summer months, when staff might be on vacation. This finding prompted a recommendation that the unit review the summer staffing pattern and the orientation procedure for nurses who fill in during this time. Several students included anecdotal notes to the faculty indicating that they thought it was "fun to be a detective" and that they enjoyed figuring out how the parts of the case fit together.

Although no new information was provided in the third stage of the case, students were asked to analyze the information they had gathered and recommend solutions to the Quality Improvement committee (competency III.C.3). This problem-solving assignment required students to synthesize the information and propose possible solutions. As they prioritized their recommendations, they considered the impact each potential solution could have on the organization, nurses, and patients.

Students were asked to prepare a presentation for the Quality Improvement committee, summarizing their findings and their top three recommendations for change (competency I.D.5). The presentation was required to include both audio and visual components. Most students elected to submit a narrated PowerPoint presentation. Students addressed their remarks directly to the Quality Improvement committee, as they would have if presenting to such a committee in a live format.

In the final stage of the case, students received additional raw data, intended to show the impact of their recommendations six months after the recommendations were implemented. If the recommendations made by the student in stage 3 were congruent with the information provided in the case, the student received data showing an improvement in the number of medication errors. If the recommendations made were not congruent with the case, the student received raw data showing an additional increase in the medication error rate. Students who had the medication error rate increase would be given the opportunity to revisit the case and make additional recommendations, much as they might face in a real-life scenario. In the pilot of the course, all of the students made recommendations congruent with the facts in the case.

Conclusion

Unfolding case studies provide an opportunity for students to demonstrate knowledge of numerous AHIMA Foundation competencies. They also provide students with an opportunity to examine data and apply critical thinking skills to formulate and make recommendations. The unfolding nature of the case mimics the way problem solving occurs in a real-world environment. Students' work becomes more meaningful, providing a strong base of knowledge and skill to prepare them for practice.

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Notes

1. AHIMA Foundation. "Academic Competencies." 2014. Available at http://www.ahimafoundation.org/education/curricula.aspx.

2. Council for Excellence in Education. *Baccalaureate Level HIM Curriculum Map*. 2014. Available at http://www.ahimafoundation.org/downloads/pdfs/2014%20Final%20Baccalaureate_Level_Curriculum_Map.pdf.

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14. Neehr Perfect. Available at http://neehrperfect.com/.

Table 1

AHIMA Competencies Addressed

- I.D.5—Evaluate data from varying sources to create meaningful presentations

- III.A.1—Utilize technology for data collection, storage, analysis, and reporting of information

- III.C.1—Apply analytical results to facilitate decision-making

- III.C.2—Apply data extraction methodologies

- III.C.3—Recommend organizational action based on knowledge obtained from data exploration and mining

- III.C.4—Analyze clinical data to identify trends that demonstrate quality, safety, and effectiveness of healthcare

- III.C.5—Apply knowledge of database querying and data exploration and mining techniques to facilitate information retrieval

- III.E.1—Apply principles of research and clinical literature evaluation to improve outcomes

- III.H.3—Apply quality management tools

Source: Adapted from Council for Excellence in Education. *Baccalaureate Level HIM Curriculum Map*. 2014. Available at http://www.ahimafoundation.org/downloads/pdfs/2014%20Final%20Baccalaureate_Level_Curriculum_Map.pdf.

Table 2

Medication Error Rate Unfolding Case Study Stages

Stage	Information Provided	Assignment
1	- Overview of the case - Transcript of interview with the nurse manager - Transcript of meeting of the Quality Improvement committee	- Review of the literature regarding medication errors (common causes and potential solutions) 3–5 page paper, including the following: - brief overview of the problem - initial perceptions of the problem - findings from the literature
2	- Spreadsheet displaying raw data regarding medication errors over the previous 12 months - Medication administration policy and procedure - A sample of five patient records to be reviewed for data validity - Transcript of interview with a staff nurse to learn more about procedures and consider workflow redesign issues - Request to consider how clinical decision support systems may be useful	- An informal paper including the following: - discrepancies between medication administration policy and actual practice - comparison of medication administration incident report form and information needed for quality improvement reporting - comparison of the number of errors in the previous 6-month period to the current 12-month period - description of times, locations, and types of errors
3	No new information provided	- A 5–8 minute presentation to the Quality Improvement committee: - containing audio and video components (e.g., narrated PowerPoint, Prezi, YouTube video) - summarizing findings and highlighting recommendations for changes (if any) to the policies and procedures - providing recommendations for workflow redesign - indicating the top three recommendations that would immediately have an impact on the medication error rate
4	Notification that the committee supported the student's	- An informal report: - summarizing comparison of the

	recommendations • Updated raw data regarding medication error rates after six months have elapsed	new data to the previous data o indicating any readjustments to the plan that need to be made based on the data