INCORPORATING THE E-HIM® VIRTUAL LAB INTO THE HEALTH INFORMATION ADMINISTRATION PROFESSIONAL PRACTICE EXPERIENCE

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ABSTRACT

This article will highlight the experiences of two baccalaureate Health Information Administration (HIA) programs in the adoption of the American Health Information Management Association's (AHIMA) e-HIM Virtual Laboratory (Virtual Lab) into the Professional Practice Experience (PPE). Information is provided describing the implementation of the Virtual Lab, issues that were encountered, and subsequent feedback from students and faculty regarding this new technology.

KEYWORDS

online laboratory, professional practice, health information management

I. INTRODUCTION

In 2007, two baccalaureate Health Information Administration (HIA) programs adopted the American Health Information Management Association's (AHIMA) e-HIM® Virtual Laboratory (Virtual Lab) into the Professional Practice Experience (PPE). Rapid changes in the healthcare environment and expectations of educational accrediting bodies influenced this transition [1].

Academic programs in health information administration are faced with many challenges in providing the necessary technologies to their students. While the use of electronic health information systems is expanding in the healthcare workplace the current economic environment has caused academic program budgets to shrink. At the same time, enrollment in both classroom and online programs is growing; programs are in need of technologies that can be provided in the traditional and virtual environments at an affordable cost [2].

In 2006, AHIMA addressed this need by implementing the e-HIM® Virtual Laboratory. This software integrates several core HIA technologies into one cyberspace lab [2]. It provides a platform from which students can get hands-on training in a variety of HIA applications, anytime, anywhere. The lab consists of multiple health information applications, including an integrated electronic health record. A lesson repository and instructional materials supporting the e-HIM curriculum are available for faculty use with all of the Virtual Lab applications. This repository is managed through a Web-based learning management system (LMS). All of the administrative and technical support functions of the Virtual Lab, for both student and faculty end-users, are managed by the AHIMA staff [2]. Since its inception in 2006, the Virtual Lab community continues to grow. In the 2009/2010 academic year, AHIMA reported the Virtual Lab was used by over 80 community colleges in the United States. Overall use of the lab grew to 251 health information programs and it was anticipated to reach over 9,000 students.

The educational literature describes considerable research efforts comparing distance and on-campus learning. However, the Virtual Lab concept, which brings together the "worlds of academic study and practice-based learning," is the result of a different paradigm for technology and learning [3]. The blending of

academic study and practice-based, or practical learning, is better addressed in studies on constructivist learning or experiential learning. Jonassen, Peck and Wilson [4] noted computer-supported constructivist learning environments should engage learners in active, constructive, intentional, authentic and cooperative learning. Other studies focusing on the integration of theory and practice also validate the need for supporting structures in order to allow students to gain deeper levels of insight and richer perceptions. In other words, the student's experiential learning must be incorporated back in to the classroom setting (whether the classroom is virtual or physical) in order to help the student see its relevance for learning and the workplace [3].

II. HISTORICAL BACKGROUND

The Medical College of Georgia (MCG) and Macon State College, two University Sytem of Georgia (USG) institutions with HIA programs accredited by the Commission on Accreditation of Health Informatics and Information Management (CAHIIM), adapted their Professional Practice Experience (PPE) curricula to include the incorporation of the Virtual Lab. This method was used to enhance the PPE and to address the issue of too few PPE sites and too many HIA students. A multitude of factors, such as the locations of the colleges, inability of the healthcare facility to accept students, lack of e-HIM technologies at the PPE sites, an increasing number of employees telecommuting, expanded outsourcing and centralization of HIA services, have limited student access to PPE sites. These two institutions traveled two very different roads, however, on their journeys to Virtual Lab implementation.

The Medical College of Georgia (MCG) is Georgia's health-sciences research university. The Health Information Administration program is a 2+2 baccalaureate program that is offered in traditional face-to-face and online delivery formats. The PPE courses are delivered during the fall and spring terms of the junior year. Because of increased student enrollment in the online option, a limited number of practice sites, and geographical diversity of practice sites (many are in rural areas), MCG chose the Virtual Lab as the solution to address these issues.

Macon State College is the largest undergraduate college in Central Georgia, providing professional-oriented programs to address the workforce needs of the State. Macon State offers associate and baccalaureate degree programs in both traditional and hybrid formats. Courses are offered during the day and evenings to both part-time and full-time students. Macon State caters to the non-traditional student whose average age is in the early thirties. Macon State opted to implement the Virtual Lab because of the increased enrollment, the practice site limitations within its geographical area, and the need for alternatives to the traditional face-to-face practice experience.

III. METHODS

A. The Medical College of Georgia

Implementation of the Virtual Lab at MCG required a system overhaul. Because of program accreditation requirements, it has become necessary to implement the e-HIM curriculum; the Virtual Lab was the tool that permitted the transition. Incorporation of the Virtual Lab into the curriculum engenders an equivalent experience for all students, both on-campus and online. It also assists with accommodating the scheduling needs of both students and practice site directors. The ability to schedule frequent on-site experiences had become challenging for both the students and site directors.

Prior to implementing the Virtual Lab, it was essential to obtain buy-in from practice site directors. This was achieved through coordination with the program's Advisory Committee. The proposed restructuring of the PPE curriculum was presented to the committee and feedback from the committee was built in to the revised curriculum. The buy-in and feedback ensured the smooth transition to and acceptance by the

stakeholders.

The original PPE curriculum was, at the time, very traditional in nature. Students participated in a campus-based orientation; subsequently, each student was assigned to a practice site for weekly face-to-face contact time over a 6-week period. Students were required to complete a number of tasks and to participate in several activities at the site. Throughout the course, students were assigned to complete three written reports. The tasks and activities list included the following:

- Filing and retrieving records,
- Charging records in and out,
- Exploring the Master Patient Index and Number Index,
- Assembling and analyzing records,
- Observing the transcription process,
- Maintaining Birth/Death Registers,
- Conducting a one-on-one meeting with the facility director, and
- Examining the Disease/Operative Index.

The revised Virtual Lab-enhanced PPE is considered hybrid in nature, with some traditional and some online components. Students participate in an online orientation that mirrors the previous campus-based orientation. They then spend several weeks completing assignments using the Virtual Lab in preparation for their upcoming on-site experiences. A sample of the Virtual Lab tasks include:

- Registering patients using the online registration system,
- Creating duplicate records in the master patient index,
- Merging duplicate records in the master patient index, and
- Taking part in an Electronic Health Record Scavenger Hunt. This activity familiarizes the students with the Electronic Health Record.

During the final weeks of the semester, students participate in guided tours of at least two health care facilities. The tours are led by the site directors who are often assisted by other HIA managers and technicians. Touring two facilities provides a comparative HIA experience for each student. At the conclusion of the course, students are assigned to write a report, comparing and contrasting the facilities, explaining the differences in the HIA practices and processes.

A. Macon State College

Implementation of the Virtual Lab at Macon State was focused on creating a hybrid experience for each student, spending time in the health care facility, the Virtual Lab, and the traditional classroom. The entire original PPE required weekly visits for 15 weeks in the healthcare facility; time spent in the revised PPE was split between three environments.

In the Virtual Lab-enhanced PPE, students spend 50% of their time at the practice site, 30% of their time in the Virtual Lab, and 20% of their time in the traditional classroom setting with the PPE course instructor. During the traditional campus portion of the experience, students complete an orientation under the guidance of the course instructor. This time is used to complete the following tasks:

- Registering students for the Virtual Lab,
- Completing student training for Virtual Lab,
- Executing requirements such as PPE director consents,
- Completing HIPAA training, and
- Providing hands on activities so that students are prepared to attend the PPE

After the campus-based orientation, the students complete the Virtual Lab assignments in an online format

and participate in an on-site practice experience at an area health care facility. The students return to campus on the last day of the course for a debriefing and to complete additional hands-on exercises. Assignments in the Virtual Lab include:

- Completing Master Patient Index tasks, and
  - Creating duplicate records in the master patient index,
  - Merging duplicate records in the master patient index
- Participating in an Electronic Health Record Scavenger Hunt.

The PPE at Macon State has continued to evolve. For example, students now self-register for the Virtual Lab by following written instructions and become familiar with the Virtual Lab by completing a tutorial prior to any on-campus orientation. This saves class time for engaging in hands-on activities, for discussing case studies, and for participating in a scheduled practice site tour prior to the actual PPE.

Additional new health information applications have been added to the Virtual Lab since 2006. As a result, the programs at MCG and Macon State continue to add new assignments using the latest HIA applications.

IV. RESULTS

Upon completion of the first use of the new PPE curricula, students and site directors were asked to provide feedback regarding their experiences. By incorporating the Virtual Lab into the PPE curricula, MCG and Macon State experienced positive outcomes and obtained supportive feedback from both students and site directors.

A. Medical College of Georgia

Prior to implementation of the Virtual Lab-enhanced PPE, MCG struggled with issue of too many students for too few practice sites. Time and effort-related issues existed for the practice sites, such as decreases in production while site employees worked with students. This created an environment where site directors were less inclined to accept students. In some instances, students felt as if they were an inconvenience for the practice site; in addition, some sites were inconsistent in their level of preparation for the students' practice experience.

After the new PPE curriculum was implemented, many of the issues previously discussed were quickly resolved. Both students and site directors provided positive feedback regarding the new practice experience; students were impressed with their Virtual Lab experience. Feedback from students included:

- "I learned a great deal from the assignments and from visiting the various facilities."
- "I liked being able to get some realistic application of knowledge from home by working on the Virtual Lab exercises."
- "Ease of use and availability (Virtual Lab)."
- "I enjoyed touring the various hospital HIM departments."

As with the implementation of any new system, there was feedback from the students regarding technical difficulties with the use of the Virtual Lab. These issues were addressed on an individual basis and generally were the result of end-user inexperience or software compatibility issues.

Feedback provided by the site directors was supportive as well. One site director commented, "I liked the revised format better." On a Likert scale of 1 to 5, with 5 representing "strongly agree" and 1 representing "strongly disagree," site director feedback was averaged resulting in the following scores:

- "The new PPE was more efficient for the practicum site." = 4.5
- "The new PPE was more effective for the students." = 4.0
- "The students seemed more interested in the new PPE format." = 3.75

- "The students seemed better prepared." = 3.25
- "We were pleased with the revised PPE format." = 4.0

The scores and comments indicated that the Virtual Lab-enhanced PPE format improved the PPE for both students and site directors. However, open-ended comments provided by site directors suggested implementing a process for measuring curriculum effectiveness as a future priority.

B. Macon State College

In general, the results of using the Virtual Lab in the PPE curriculum at Macon State were positive. Students were asked to compare and contrast Virtual Lab exercises with traditional on-site exercises. They were also asked to comment on the ease of using the new technology:

- "Do you feel the V-Lab Assignments were similar to actual tasks performed in a hospital HIM Department?"

90% responded "Yes."

- "Do you feel the V-Lab prepared you for technology functions or activities in the real world?"

80% responded "Yes."

- "Do you feel the V-Lab was user friendly in the student registration process?"

30 % responded "Very;" 60% responded "Somewhat."

Qualitative feedback from students included the following comments:

- "The screenshots in the lessons were very helpful, especially for a more visual learner."
- "[The] Virtual Lab was helpful."

As with feedback received from MCG students, Macon State students also commented about technical difficulties with the use of the Virtual Lab. These issues generally were the result of end-user inexperience or software compatibility issues. These issues were resolved with assistance from the college's technical support staff and the Virtual Lab support staff at AHIMA.

V. RECOMMENDATIONS

For both institutions participating in this process, implementation of the Virtual Lab into the PPE was successful. Based on feedback from students and experiences of the course instructors, it is essential in an online teaching environment to consider the technical compatibility issues of implementing the Virtual Lab component into the curriculum. In the traditional classroom, one can more easily manage software and compatibility issues and quickly access technical support when needed. However, in the cases of both MCG and Macon State, the online environment is more complicated to control. A recommendation for future use of the Virtual Lab is to increase the amount of time that students would have to familiarize themselves with the technology; in addition, more effort devoted to addressing technology and compatibility issues could decrease frustration with unfamiliar technology. Addressing these issues at the beginning of the course will allow for fewer road blocks during the Virtual Lab implementation process.

As a result of this process, both MCG and Macon State plan to increase use of the Virtual Lab by adding additional lab components and by increasing the number of exercises into the PPE curricula as well as other courses within the HIA curriculum. As the Virtual Lab continues to add more applications, additional accreditation requirements for the e-HIM curriculum can be satisfied and students can obtain more hands-on experience of practical HIA applications.

VI. CONCLUSION

In summary, MCG and Macon State successfully implemented the Virtual Lab into the PPE curriculum. Feedback was positive from students and site directors. Use of the Virtual Lab enables the HIA programs to:

1. incorporate e-HIM applications/technologies throughout the HIA curriculum;
2. offer an equivalent PPE to both campus and online students; and
3. accommodate both the student and site director's need for a high-quality PPE.

By using AHIMA's e-HIM® Virtual Lab, both MCG and Macon State have incorporated the student's experiential learning back into the classroom setting, both traditionally and virtually. This has provided students with the opportunity to experience the relevance of e-HIM applications in both the education and workplace settings.

VII. ABOUT THE AUTHORS

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