HIM Laboratory: Delivering e-HIM Technology to Colleges and Universities -- Virtually

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The e-HIM® Virtual Lab offers students important exposure to core HIM technologies, with minimal IT support required.

HIM students can expect to work with health IT upon graduation. In most organizations, managing or supporting clinical documentation, reimbursement, risk assessment, quality measures, research, and education requires understanding one or more electronic health information systems. This expectation is reflected in educational standards from the Commission on Accreditation for Health Informatics and Information Management Education, the accrediting body for HIM academic programs. Technology requirements now form one component against which school curricula are evaluated.

For academic programs, however, the challenges of providing exposure to technology are significant. Purchasing multiple applications is often beyond the reach of technology budgets, and integrating and updating software requires more IT support than may be available. Distance programs must support online environments that students can access remotely. Planning technology coursework also offers unique challenges. Students must receive enough training to use the application, but the skills they learn must extend beyond any single product or single setting.

One answer to these challenges is to think virtually, shifting the burden away from schools and students by creating online virtual laboratories where students can get hands-on training directly from their desktops, without attending a special classroom or lab and without costly tech set-up. Virtual labs are created for more than technology applications; other uses include patient care simulation and physical science.

The e-HIM® Virtual Lab collects core HIM technology in one cyberspace lab. The lab turns student computers into HIM laboratories with just a high-speed Internet connection, offering an environment where students can apply theory and concepts in practice settings without getting bogged down by the complexity of individual software procedures. Enrollment for the 2006–07 school year is currently under way, with a target of 100 schools, or about 4,000 students. It is anticipated that eventually up to 10,000 students from 250 schools could access the lab each year.

The lab will provide colleges and universities with access to a full array of core HIM technologies, an integrated electronic health record, and the supporting tools and resources that will allow them to successfully and effectively integrate these technologies into the learning environment. The lessons, collected into one learning repository, are intended to enhance the HIM education system by integrating with curriculum for approved or accredited certificate, associate, baccalaureate, and master's programs.

AHIMA created the virtual lab with input from HIM educators, industry leaders, and HIM professionals. The lab was developed initially in partnership with 13 academic institutions and six software industry partners.

How It Works

Two important criteria keep the lab easy to access and focused on providing widely applicable technical experience:

- Minimal IT requirements, so that school labs and students can access applications easily
- Lessons that blend software application experience with HIM core concepts, so that students obtain knowledge that applies to more than a single application or a single work environment

Keeping IT requirements simple is key. Applications must require minimal set-up, build, or maintenance at the local training sites. This spares academic programs the struggle of keeping current with frequent software updates and upgrades. It also circumvents incompatibilities with other academic center software that could limit the options schools have to add new software to their computing center PCs.

Selection of the hosting environment for each application in the Virtual Lab is determined on a case-by-case basis in order to maximize the lab's investment in software and hardware, minimize the impact on academic programs, and provide environments that will best support the needs of the academic programs and HIM curriculum. If the software is a Web-native application, it will likely be hosted at AHIMA's data center. For client-server applications, whenever possible, the applications are provided through the lab's virtual training management system, which supplies virtual machines that students access via the Internet. (For more on virtual technology and the lab's setup, see below.)

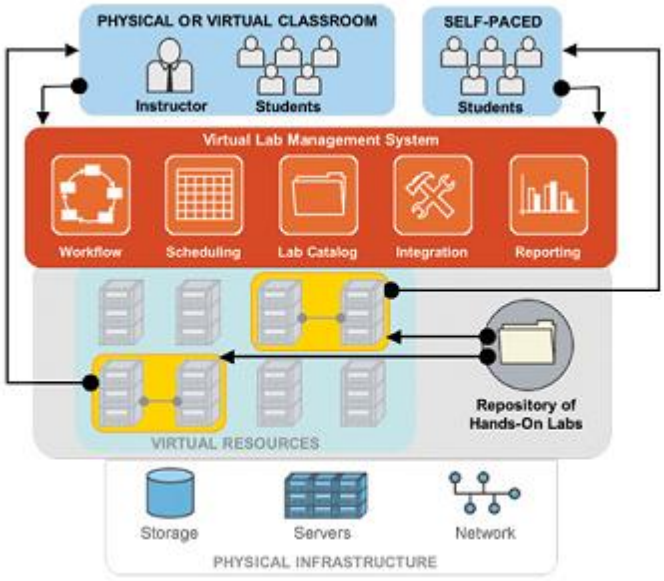
What Is Virtual Technology?

Virtualization is the ability of one computer to run multiple operating systems and applications in independent partitions. This allows a single computer to function as multiple virtual systems for a variety of guest users. To the individual guest, it appears that he or she is accessing a single, unique computer.

Virtual technology is gaining more and more acceptance because it offers the advantage of building applications with less hardware (an important consideration for schools, for example, who must offer multiple applications and maintain flexibility in user capacity). Because applications are hosted on the virtual system, users are not responsible for managing and supporting them. The configuration necessary to run the program is made to the virtual machine.

The e-HIM Virtual Lab combines virtual technology with a scheduling system and workflow tools, allowing instructors to select and schedule applications for their students, for both self-paced and instructor-led classes. This technology provides an attractive solution for the lab, which anticipates the need to manage a training environment and user accounts for a diverse group of up to 10,000 students and 250 schools annually.

As illustrated here, the management system provides a variety of options for classroom technology training. Students may access the lab from a centralized computer lab or from a remote location; log on for instructor-led or self-paced classes (as selected by an instructor); and access one or more of the lab applications via virtual machines (again, as designated by the instructor). Once the lesson is completed, lab data are reset automatically to prepare the system for the next user.



For both of these environments, all that's required of students is a high-speed Internet connection. When it's determined that the client-server application is not suitable for the virtual environment (usually a joint decision between the software partner and AHIMA), it may require the installation of downloadable applets on the client local machines (i.e., the student's or the school's). AHIMA will make the applets available to schools via the Web or CD. A Web-based portal will provide access to the lab's learning management system that manages scheduling and access, the lab applications, and a repository of lessons.

Some of the first applications selected for the lab address core HIM functions-an encoder and abstracting application and electronic document management and deficiency management tools. More specialized technologies include master patient

index software for patient identity management and a suite of applications based on provider dictation-transcription, speech recognition, and natural language processing.

Another critical lab component is an electronic health record, including a clinical data repository. AHIMA has partnered with the College of St. Scholastica, and the Virtual Lab will access an EHR built and maintained as part of St. Scholastica's ATHENS project. From this partnership, students will be able to learn and explore in a fully integrated EHR environment.

The lab's virtual training management system offers a scheduling system, allowing instructors to grant their students access to the applications at specific times. Students have a single access point to all the virtual applications, with access ultimately determined by their classroom assignments (as scheduled by their instructors). The management system will allow the lab to deliver technical and end-user training for both classroom and self-paced online training. The approach also allows training data to be reset for students simply, making it much easier to manage the lab environment in support of a large number of users.

Combining the application environments with an e-learning platform gives the lab a well-structured solution to centrally manage learner training needs. The lab's infrastructure includes online registration to provision users in all the systems and manage the user data on a daily basis. By design of its infrastructure and scalability, the lab seeks to offer an essential, widely adaptable resource in preparing both HIM students and the current work force.

More Than Software Training

The design of lab lessons will be a critical factor in the lab's success, because teaching theoretical concepts through software applications can be challenging. Lessons must provide enough detail in the software procedures to ensure the students successfully navigate the application, yet create a conceptual framework that will be applicable to a variety of practice settings.

Careful lesson design makes the lab more than a software training system and different from work-based training systems. Most of the applications in the marketplace have their own specific programs to train end users on the product; healthcare organizations typically customize training programs further to include their own specific workflow requirements. Therefore work-based training usually integrates organization-specific workflows into application training.

The Virtual Lab seeks to offer more widely applicable learning. Volunteer educators and subject matter experts serve as content contributors and reviewers for the lesson repository, offering input on both the practical application of the software and the educational design of the lessons. The Virtual Lab's instructional designer provides expertise in formatting the content for online learning, for both instructor-led and self-paced learning experiences and in categorizing and organizing the lesson resources to ensure they're available for instructor selection.

The lab lesson repository will be managed through a Web-based learning management system similar to those typically used to manage online educational programs. Clinical data and other supplemental information (such as sample policies and procedures, case studies, or scenarios) will be built into the lab applications and exercises in order to simulate the current healthcare environment. Students will apply problem-solving and analytical skills in the context of healthcare software applications and will gain experience and familiarity with a range of healthcare applications. The creation of this national database of current, accurate, and comprehensive educational modules will significantly support and enhance the quality of HIM programs.

Up Next

A volunteer council comprised of HIM professionals, educators, and other industry experts is currently planning the lab's next phase-determining what applications are critical and relevant for HIM education; what interfaces, if any, need to be created between existing applications to better replicate the healthcare environment; and what data can be added to enhance the learning environment.

As the course repository builds, the lab envisions developing a series of custom course modules that will be available to academic programs, particularly for distance education. As the course modules are developed, lab staff will also seek employer and work force partners to develop custom modules for the work force environment, eventually providing a rich resource for

training resources outside of the academic classroom as well, with products developed specifically for employer training, professional development, and lifelong learning.

This type of course module will be available for work force training, helping the current HIM work force improve or gain new skills as well as launch new careers in HIM. AHIMA will continue to seek new sources of funding for the lab and advocate for the allocation of public dollars to support technology funding for education, both for academic programs and the current work force.

More information on the Virtual Lab-including enrollment forms-is available at http://campus.ahima.org/vlab.

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