

## Revamping Information Literacy Training: The Advantages and Challenges Offered by CMS

by Mike Knecht & Kevin Reid

**P**roviding access to library services through course management software is a relatively new approach used by academic librarians to assist online students with their information needs. Course management software (CMS) such as *Angel*, *Web Course in a Box*, *Virtual U*, *Top Class*, *Intra-Learn*, *WebCT* and Blackboard's *CourseInfo* offer online instructors and librarians many features that facilitate collaboration and provide the opportunities to deliver relevant library services to online students anytime and anywhere. Such library services typically include reference assistance, interlibrary loan, database access, and helpful tutorials. The degree to which students use these offerings tends to be driven by instructors and course research requirements. The policies of network administrators can also affect the depth of the library services offered. For example, a college computing policy may set storage limitations on servers supporting the CMS which might thereby curtail widespread use of large audio and video files in tutorials. Regardless of the arrangements, librarians must acknowledge and accept the guidelines of their CMS environment in order to help students effectively. They must become knowledgeable in the use of CMS; build relationships with online faculty and technology support staff; and be willing to design, build, and import the electronic library services into online courses. At Henderson Community College (HCC) in Kentucky, the library staff has worked toward these ends while focusing on information literacy (IL) training. This article provides an overview of the HCC experience while exploring the problems and successes encountered along the way.

Like most information literacy programs in the 1990s, the library staff at HCC performed IL training through the traditional suite of instruction tools: lectures, supplemental tools such as PowerPoint slides, paper handouts, workbooks (at HCC called *Pathfinders*), and comprehensive tests. The training sessions lasted between one and two hours, and were frequently limited to the students of the first or second semester English courses. The sessions typically consisted of a library tour followed by a classroom presentation that discussed library services such as interlibrary loan, reserve policies, circulation options and reference desk

assistance. Presentations also included demonstrations of the library's online catalog and journal databases. Students had very little time to experiment with the library's electronic offerings before a session's end, and as a result, often needed personal assistance from the library staff when completing their IL homework assignments. Academic success was measured by exam results – which showed a significantly higher number of students receiving A's and B's than all of the other grades combined. In fact, over 82% of students completing the take-home IL exam for English 101 received a grade "B" or better during the program's initial three years. The English faculty worked with the library staff each semester to schedule the IL training sessions because the course competencies required the regular completion of IL instruction; however, faculty contributions to the IL program content were minimal due to the rigidity of these competencies and time constraints. (Covering the course competencies consumed most of the time allocated by faculty for the training sessions, so there simply wasn't enough time to expand and include more IL topics.) This was the situation from 1995 until 1998 when student feedback indicated the need for digitization.

Moving the workbooks, *Pathfinder to the Library I* and *Pathfinder to the Library II*, to the online format in 1999 was the first step in meeting students' electronic expectations. Originally written by the library staff in 1995, these *Pathfinders* had proven useful for both faculty and students because they offered a concise overview of essential IL skills appropriate for the English courses. The hardcopy format proved limiting however; printing proved expensive and revisions were needed whenever databases updated their appearances or functionalities. Each chapter within the workbooks addressed a different topic such as creating a research outline, using a specific database, or evaluating information retrieved in a search. Each *Pathfinder* also gradually introduced more complex information, for research into student learning had shown that one profitable way to enhance student success was to "Provide a scaffolding to enable students to accomplish complex tasks" (Johannessen, 2004, 639). This approach systematically built the students' level of



understanding as they progressed through the workbooks and take-home exams. While material in the hardcopy *Pathfinders* had been useful, the increasingly electronic world of academia made it imperative that such content be made available in the online format. The conversion process was initially slow because the library staff had little experience with or knowledge of HTML or Web page design. Digital cameras, for example, were too expensive for the library's budget, so photographs of books such as the *Library of Congress Subject Headings* had to be taken with a regular 35MM camera and scanned before being imported into the online workbooks. Eventually, the library staff used Microsoft's FrontPage to revise and recreate the workbooks in a Web format. Another Web design tool, *DreamWeaver*, was used to comply with ADA requirements for the visually challenged student. Despite overcoming the sharp learning curve associated with Web page development, the library staff continued to use the old method of IL instruction based on tours and classroom instruction. Only in 1997 when the newly formed Kentucky Community and Technical College System (KCTCS) loosened the English course IL competencies could the library staff begin to explore new options for IL training.

The library staff had suspected for several years that limiting the IL training to students in English courses impeded the research skills of other students. For example, many students opted to postpone their English courses until later in their degree plan—insuring that they did not receive IL training until their sophomore year. At-risk students did not receive IL training in a timely manner because they were taking preparatory English classes that did not include an IL component, even though such basic skills are essential from the beginning of a student's program of studies. Research by Melissa Gross (2005) indicates that not addressing this "...may put them [students] more at risk of not developing these skills as the use of electronic resources proliferates and a larger proportion of the student population opts for distance education" (p. 161). Also, more students were pursuing technical degrees that only required one English course, so they did not receive exposure to the full IL program. Regardless of the situation, the library staff realized that many students were not receiving IL training when they needed it, and that this shortcoming most likely hampered such students' overall academic progress. To explore these problems, the library staff performed literature reviews focused on at-risk students, IL training, and how to help students attain academic success.

Dr. Terry O'Bannion's concepts about a "learning-cen-

tered" approach to higher education had captured interest and gained popularity during the latter 1990s. In this philosophy, learning was placed at the center of all college operations in order to improve the performance of students at all levels of skills, including those categorized as "at-risk." Many colleges shaped their goals and strategic plans to align themselves with this fundamental belief, and the literature generated by the League for Innovation in the Community College (<http://www.league.org>) recommended that such changes go beyond the departmental level directly to the classroom. Recognizing students' different learning styles, abilities and expectations was the first step in determining how the college environment needed to adjust. This was often followed with an internal assessment of learning priorities for each institution which, if adopted by the students before graduation, would lead to a set of academic abilities and skills known as "student learning outcomes" (SLOs). Experiments in putting into practice these learning-centered concepts were performed at twelve community colleges, the "Vanguard colleges," with varying degrees of success. At each Vanguard college, the respective libraries participated by changing policies to make the atmosphere more supportive of students. Many changed circulation policies to cater to distance learning students, and most modified their IL programs to be more flexible and responsive to faculty preferences. HCC's library staff noted the IL successes enjoyed by their Vanguard counterparts, and soon developed a strategy that pursued these IL characteristics while maintaining focus on the digital delivery processes. Key components of this strategy included:

- Communicate with all faculty to learn their preferences for IL training.
- Condense and modularize the content of the *Pathfinder* workbooks into lessons that would serve students either as stand-alone learning activities or as a cluster of IL topics.
- Develop new modularized IL topics, based on feedback from faculty teaching remedial courses, which directly support the information needs of at-risk students, including lessons with varying lengths, vocabulary, and audio-visual components.
- Develop new modularized IL topics, based on faculty input, for subject-specific courses like history, speech, art, nursing, physics, economics, etc.
- Develop assessment tools that truly determine the level of student understanding before and after IL training has been provided.



- Use the Internet as the primary format to deliver IL training for both on-campus students and distance learners.
- Learn and implement Internet-based technology and software that offers professional-looking graphics to support the modularized lessons.
- Maintain compliance with ADA guidelines while creating all IL online content.
- Answer the question, “How do we know students are learning?”

With a plan in place, the remaining challenge was to find a manageable Internet-based vehicle that allowed faculty or librarians to control assignments, quizzes and exams while accommodating student learning styles. Our solution was to use the course management software (CMS) provided by the Kentucky Community and Technical College System.

In 2003 the KCTCS opted to use *Blackboard* as its CMS for online learning. Previous CMS for KCTCS included *Angel* and *WebCT*, but *Blackboard* offered many more features for student learning and a more professional appearance than its predecessors—and at a more affordable price. Course shell features such as discussion boards, blogs, journals for detailed posts, test and survey centers, and a myriad of communication possibilities appealed to students, while tools like the Grade Center, Performance Dashboard and Report Tracking appealed to online faculty. Audio and video files were easily imported, and *Blackboard* interacted seamlessly with other software that supported live classroom discussions. Altogether, *Blackboard*’s offerings facilitated quality online instruction at a time when students were still skeptical about the online classroom. *Blackboard*’s initial success has resulted in *Blackboard*’s continued use in the KCTCS. We, as HCC librarians, have tried to take advantage of these components not only for our IL program, but to work collaboratively and effectively with the teaching faculty.

Peeling back the layers of *Blackboard*, we explored both the student side and the instructor’s view before we discovered the often-overlooked eCommunity service. The eCommunity is the location where groups and organizations can meet to work on various projects. Students and faculty may gain access by self-enrolling in the eCommunity—a process that takes less than two minutes—or students may simply be given access through a group upload performed by a network administrator at the beginning of a semester. The

eCommunity serves faculty as an online space where students are convened to work on group projects and assignments in a secure environment. To support this effort, the eCommunity possesses all classroom tools such as communication features and Grade Centers that are found in *Blackboard*’s course shells. The only difference between the course shells and the eCommunity is that the former terminates after one semester while the latter is perpetually available to any student or faculty who remains enrolled. The eCommunity service continues for as long as the group meets, and is only dismantled when the group “leader” or network administrator terminates the eCommunity. This longevity allows an IL program to remain intact for several years and is a main advantage we considered when selecting a host service for our IL program. Other advantages include the ability to create abbreviated learning modules, collaborate with faculty and other librarians, and meet regional and discipline accreditation standards for IL. While this last concern may not seem important to many of the librarians ‘working in the trenches’ with the students it is a pivotal issue for institutions. Since 2000 the regional accrediting agencies like the Southern Association of Colleges and Schools (SACS) have emphasized the need for all courses to address IL skills, and many of these bodies identify the library as where these skills should first be taught. As Gary B. Thompson (2002) notes, the “...regional accreditation agencies are now stating outright that regular library instruction should be an essential part of higher education and that more educational standards call for information literacy to become a central core set of skills required for an undergraduate degree” (p. 233).

Learning modules (often called learning units) are a series of folders containing information on a variety of IL topics such as the Library of Congress Classification System, the APA style, basic research techniques, the differences between journals and magazines, and how to evaluate information. Each module addresses one topic with specific information and step-by-step instructions contained within a Content File. The size of a Content File is usually limited to two to five printed pages of writing and graphics—this meets the expectations of students who want concise training with immediate feedback in an electronic environment.\* We currently have 37 learning modules with more under construction. Within each module is a “survey” which acts as a pre-test, though sounds less intimidating. This first step in a learning unit is to have the student take the survey. The survey’s length and depth is often a reflection of the IL topic and the student’s level of understanding of that topic. An unlimited number of



survey questions may be used; however, our experience indicates that any survey offering more than twenty questions quickly forfeits student interest.

After the student completes the survey, he/she proceeds to the Content File. The Content File is the meat and potatoes of the learning module because it offers the detailed explanation of the IL topic. Images and photographs are frequently used to enhance the explanations, and audio/video files further assist the learning process. We have used the *Snagit* software to create professional-looking print screen images with much success. (This is a great tool for adding highlights, arrows, circles and other inserts to an image.) For video clips and "talking heads," we prefer the software, *Camtasia*. Quality clips can be developed and edited since *Camtasia* generated files can be moved throughout Blackboard efficiently. Another audio/video component we use inside the Content File is *Wimba*. *Wimba* allows us to make simple, brief voice recordings that require minimal computer memory. *Wimba's Live Classroom* also allows live IL training for distance learners at the college's branch campus. Other software, such as *SoftChalk*, has been tested in an attempt to make our IL training more attractive to the technology-savvy student, but we have found that too much stimulus in the Content File can ultimately undermine the desired effect. To learn how well students retain the information (and the level of our related success) in the Content File, we administer a follow-up exam which acts as a post-test.

The post-test is an instrument that closely mirrors the survey given before the Content File. In fact, the level of difficulty in the post-test is very much influenced by that of the pre-test ("survey"). Questions touch on the key points provided by the Content File and sometimes include parts of the librarian's live discussion if classroom training has been provided. A variety of question types may be posed including multiple choice, true/false, short answer, matching, and essay. Student results on the post-test are automatically recorded in the eCommunity's Grade Center. The student also gets immediate feedback through the Grade Center, the eCommunity's messaging system, or e-mail. The Grade Center is indeed a vital link to the post-test because this is where we make immediate comparisons with the pre-test scores and determine the individual student's level of learning. Finally, the Grade Center allows us to create Microsoft Excel spreadsheets of class testing results, perform trend analysis to determine longitudinal effectiveness of the learning module, and ultimately share grades with the faculty.

The eCommunity makes collaborating with faculty easier because it is a basic tool used for online learning. Most of our full- and part-time faculty have been teaching online classes for several years. With operational experience already commonplace, we found discussions about online IL training to be effortless. We initially set appointments at the division level to provide an overview of our eCommunity IL services, and followed this with individual meetings to either adjust existing learning modules or to create new ones. Once the faculty realized that our intent was to cater to their classes' IL needs, their level of interest increased exponentially. Within three years, our eCommunity learning modules expanded from five to 24. At the same time, the level of sophistication of many learning modules expanded well beyond elementary IL training for the at-risk student to include in-depth training for history, economics, nursing and physics students. We quickly found that the walls drawn by some teaching faculty to marginalize librarians were dismantled and dialogues were started as we shared grade results via the Excel spreadsheets and explored ways of improving the learning units to meet the faculty's specific classroom needs. We even became "teaching assistants" for many instructors so that we could import learning units directly into the respective faculty member's online classes. This feature is particularly useful for the specialized classes. Research has shown again and again that students learn—and retain—more effectively when IL training recurs "throughout the student's entire academic career..." (McAskill, 2008, p. 3). This made access to the IL training more convenient for students and gave faculty direct responsibility for providing this service. Grades were shared both ways in this scenario—a process that fueled more conversations.

Another benefit of the eCommunity model is that it falls directly in line with the accrediting agencies' new emphasis on collaboration. The regional accrediting agencies are eager to break down barriers between programs and disciplines, and many of the accrediting agencies directly demand that IL instruction either emanate from the libraries or involve both librarians and teaching faculty. One need look no further than the Northwest Association of Schools and Colleges (NASC) to see this. The NACS has mandated that "Degree and certificate programs demonstrate a coherent design... and require the use of library and other information sources..." as well as "...faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process" (Thompson, 2002, p. 221). One can indeed see that the eCommunity moves our IL program in this direction.



Regardless of rank, title or job description, the development of the eCommunity and the learning modules promotes camaraderie among library staff. Our library staff has always followed the lead of the American Library Association (ALA) in defining IL training as our core mission with all other library services seen as secondary concerns. We try to link ourselves and our daily jobs to this end so that we remain in touch with student learning and success. The eCommunity facilitates efforts to include other staff because it provides many opportunities to create, communicate and grow professionally. Those who have been interested in Web page design have proved eager to participate, while those with a flair for writing have also contributed. Some have been attracted to involvement in the learning units through the lure of developing artistic images through the audio-visual software, while those thirsty for recognition have also found the eCommunity to be a good stage for highlighting their contributions. For administrators, the ability to document and demonstrate the levels of student success for accreditation purposes has been greatly appreciated.

To a large degree, the offerings of academic institutions are shaped by accreditation criteria. Since the beginning of the century, more and more of the regional accrediting bodies like SACS and disciplinary accreditation agencies like the National League of Nursing (NLN) have focused on SLOs and documenting student success. This new emphasis is not on traditional measures like grades, but on demonstrable SLOs. Increasingly the accrediting agencies are explicitly demanding that colleges create SLOs, and to “demonstrate that the assessment methodologies [that] they have employed to assess learning are valid and reliable” (Beno, 2004, p. 69). It is in precisely this manner that the eCommunity is so useful. The pre- and post-test capabilities of the learning modules make them a valuable tool for measuring SLOs. If an accreditation agency still values student feedback about IL training, students can find a voice through questionnaires imbedded in the Content File. It should be noted that these student responses are more meaningful to accrediting bodies because they are specific to the IL training that is provided. One key aspect of the eCommunity model is the ease with which revisions can be made to incorporate the results of SLOs and other data. Accreditation bodies have also placed new emphasis on collaboration between librarians and faculty, and although the eCommunity has jump-started much dialogue at HCC, one disadvantage occurs when the faculty member embraces the tool and stops asking for live IL training in the classroom. Other shortcomings involve technical limitations, discontinued collabora-

tion, too many eggs in one basket, and labor shortages.

Blackboard, like any other CMS, has its eccentricities and these challenges can be overcome—most of the time. For example, each eCommunity builder or leader is given a finite amount of storage space in Blackboard to house files that need to be imported or exported to various locations. As students demand more audio and video files, one problem that arises is that such files often consume computer memory on too large a scale and thus can limit the number of items the builder is allowed to hold in storage. The size of this storage can be increased by a network administrator if proper protocols are followed—though this can require good negotiating skills. If not, the builder must constantly download and upload files—wasting time for us and the faculty member.

Another technical issue involves the imbedding of IL training in the respective instructor’s course. The teaching assistant (library staff member) moves the requested learning modules into the faculty member’s course shell, but is powerless to obtain the related grade information unless the instructor provides it. Most instructors are punctual about sharing the IL grade information, but when they are not, we simply have no options to force the issue.

Collaboration is great when both parties play nice, but it can be problematic when one player takes the ball and goes home or refuses to use the service. We have always used the eCommunity as a tool to assist us with live IL training. We typically enter a classroom and spend approximately 15 minutes giving an overview of the selected learning module(s). An invitation is then extended to the students to visit the library for additional assistance. After a couple of sessions, some instructors will decline this classroom training and simply opt to conduct it themselves. While this is convenient for off-campus faculty, in the long term this situation can result in stagnation because it reduces ongoing communication between the faculty and the library staff. Frustration over inadequate communication can sometimes lead to problems if someone openly complains. Since the entire library staff participates in the development of the eCommunity, library management may have to dedicate a fair amount of time and trouble to reign in bruised emotions. One solution that has been found to be of value is to get the institution’s higher level administrators to support the eCommunity-based IL instruction program. Since the accrediting agencies are increasingly looking for demonstrable IL programs that: serve students throughout their academic careers; use documentable SLOs; and are



created in a collaborative manner, it is fairly simple for the administrators to lend their weight to “encourage” participation in the eCommunity from any recalcitrant instructors.

One disadvantage inherent in the eCommunity model is the sheer risk of using only Blackboard. As we have seen at HCC, the KCTCS has abruptly discontinued its contract with two CMS vendors during a 10-year period. This leads us to believe that Blackboard will eventually be dropped for a different CMS. Given the propriety nature of this software, it is unlikely that our work in the eCommunity will be directly transferable to some future “new” CMS. We feel confident that the text will be salvageable and the graphics will transfer as well, but the audio files may be problematic. Furthermore, it is highly likely that we will lose most—if not all—of the existing pre- and post-tests. Considering the large number of tests and test questions that we have generated for our learning modules, the loss would be devastating. It could take as long as a year to re-engineer and re-enter so much material if a new CMS were adopted. To offset this dilemma, we have saved the content in several copies of important files on our local Web server. Additional copies are housed on flash drives.

The last disadvantage can be seen in labor. We currently have 37 learning modules with more in production. This effort, coupled with the updates that must be done on a regular basis, has required us to spend more time on the eCommunity project than we can afford to sustain unaided. Other library services cannot be reduced; yet we are finding it challenging to accommodate these duties and maintain—much less expand—our ongoing efforts in IL training. This situation certainly helps us justify the need for additional library staff members, but given the current climate of limited state funds for higher education, it is very unlikely that such requests will be filled. We are considering other options, such as internships for library science students in graduate school and help from our library colleagues throughout KCTCS. Regardless of what short-term solutions might be found, we have seen that the eCommunity model of IL training comes at a premium in labor and time.

In spite of the unseen costs and difficulties that the HCC librarians experienced while adopting the eCommunity model of IL training, we have found the benefits to be greater. We have also found that librarians in other KCTCS institutions and throughout Kentucky and the Midwest have seen the promise offered by the eCommunity model. To date, 11 of the 16 KCTCS

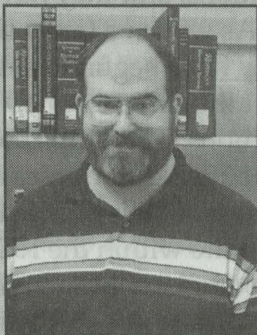
libraries have adopted HCC’s eCommunity model as their own. We have freely shared our knowledge and experiences with these institutions, and they have adopted our learning modules. As we have freely shared these skills and materials, they have begun to share with us learning modules that they have created for specific classes in their institutions. This helps them to establish their “ownership” of the eCommunity and fosters their desire to build more of their own learning modules. This effort to collaborate within the KCTCS libraries has alleviated our labor shortage and enriched the other KCTCS institutions. As a result of this success, a new KCTCS Information Literacy Curriculum Committee has been formed with the purpose of reviewing IL system competencies, creating system-wide SLOs, and developing an eLibrary for Blackboard that will glean most of its content from the HCC IL eCommunity. Yes, our eCommunity is the culmination of several years of hard work, and it has enjoyed successes while dealing with diverse problems because it has been seen by many to be an effective IL tool that adapts to the needs of students, faculty, administrators and librarians.

## References

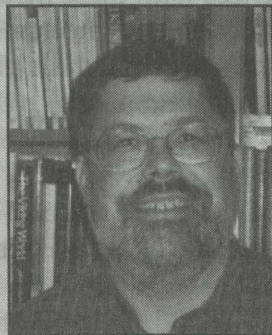
- Beno, B. A. (2004). The role of student learning outcomes in accreditation quality review. *New Directions for Community Colleges*, (126), 65-72.
- Gross, M. (2005). The impact of low-level skills on information-seeking behavior. *Reference & User Services Quarterly*, 45(2), 155-162.
- Johannessen, L. R. (2004). Helping “struggling” students achieve success. *Journal of Adolescent & Adult Literacy*, 47(8), 638-647.
- McAskill, W. (2008). Information literacy: The leadership role of the academic librarian. *College Quarterly*, 11(1), 1-15.
- Thompson, G. B. (2002). Information literacy accreditation mandates: What they mean for faculty and librarians. *Library Trends*, 51(2), 218-241.



## About the Authors



**Mike Knecht**



**Kevin Reid**

Mike Knecht has been employed at Henderson Community College for the past fourteen years and holds the MLS and MBA degrees. In addition to his library responsibilities, he serves as Chair of the Arts and Humanities Division and teaches business courses as an adjunct faculty member.

E-mail: [mike.knecht@kctcs.edu](mailto:mike.knecht@kctcs.edu).

Kevin Reid has been employed at Henderson Community College for the past fourteen years and holds the MLS and MA (History) degrees. His primary areas of responsibility are information literacy, reference, and collection development. Kevin teaches history courses as an adjunct faculty with emphasis on military history.

E-mail: [kevin.reid@kctcs.edu](mailto:kevin.reid@kctcs.edu).