Abstract

In today’s ever expanding information environment, the need is increasing for graduate and undergraduate students to develop information literacy skills throughout their academic programs in preparation for the professional work environment. While a variety of information literacy instruction program models exist within higher education, a program that is integrated within the student’s chosen discipline can most effectively provide opportunities to learn how to find, evaluate, and use information for both academic and future work environments. Faculty and librarians need to collaborate to design and implement discipline-specific information literacy instruction integrated across academic programs.
Information Literacy in Higher Education

It is not difficult to find a current article or website that refers to the topic of information overload and the importance of building skills to navigate and manage information. Everyone agrees that the amount of information available is expanding rapidly and that much of it can be accessed through the Internet. It is increasingly important for workers to know how to create, manage, and manipulate information to succeed in today’s knowledge or information society. While the Internet has increased access to many types and forms of information, the ability to easily find the kind of information needed for a specific task, to evaluate the information found for relevance and credibility, and to use the information effectively and ethically is not guaranteed. Collectively, the ability to find, evaluate, and use information is known as information literacy (IL) (Association of College & Research Libraries, 2011).

Within higher education, the explicit articulation of IL standards by academic accreditation agencies has increased over the past fifteen years. References to IL skill development in academic standards reflect acknowledgment of the increasingly complex information environment as well as the need to develop faculty and students’ abilities to find, evaluate, and use information effectively and ethically. The Middle States Commission on Higher Education (MSCHE) has been a leader in these efforts, adopting IL as a concept in 1994 and partnering with the Association of College & Research Libraries (ACRL) in 1999 to shape the definition of IL in higher education (Morse, 2008). MSCHE’s 2009 publication Characteristics of Excellence in Higher Education recognizes IL “as an essential component of any educational program at the graduate or undergraduate level” (p. 55). The Northwest Commission on Colleges and Universities (NWCCU) has also adopted a standard that addresses the need for faculty and librarians to work as partners to “ensure that use of the library and information resources is integrated into the learning process” (NWCCU, 2010, 2.C.6).

It seems common sense to draw the conclusion that when students know how to find and use top quality information to inform their learning and to support academic assignments, the quality of their learning and academic work will increase. Research con-
The need for an information literate workforce is international. It extends beyond geographic borders as evidenced by The Prague Declaration, which states that IL is a key element of the social, cultural, and economic development of individuals, communities, and institutions in the twenty-first century (United Nations Educational, Scientific and Cultural Organization, 2003). Higher education institutions’ role in teaching students how to find, evaluate, and use information is increasingly important in the United States and in countries worldwide.

Information Literacy Instruction Models

Traditionally a variety of instructional models have been employed by university librarians and faculty to teach students how to find, evaluate, and use information. Sessions within these models may be recommended to students, or required as a prerequisite to, or limited part of, an academic program. These models include:

- Allowing students to determine their own way to acquire and develop their ability to find, evaluate, and use information (Bruner & Lee, 1970);
- Relying on individual faculty to request IL instruction by librarians for their students;
- Delivering a general research workshop or library tour during new student orientation;
- Designing a specific introductory course within a program that includes an hour-long session on how to use library resources and services that may or may not be designed to support specific assignments (Badke, 2009);
- Designing a stand-alone credit or non-credit-bearing IL course which may or may not be designed to support specific assignments within students’ disciplines (Badke, 2008).

While faculty across disciplines generally agree that IL and research skills are important for their students, not all agree on the best model for developing these skills, or even whether students need help becoming information literate. Assumptions are made that students already know how to find information online and don’t need additional support to develop these skills. Lombardo & Miree (2003) found that the business faculty they studied “assume that students are already well-versed in business research tools and methods” (p. 20). Faculty who hold this belief often adopt the model of allowing students to determine their own way to acquire and develop IL skills.

However, research reported by McKay (1996) found that graduate and undergraduate business students were unaware of the type of resources available to them from the library and received little guidance from their faculty in how to locate relevant information. Contrary to the belief of faculty who do not feel students need IL instruction, it remains true that students today “are no better prepared in business research than the business students of 35 years ago” (Simon, 2009, p. 260). Today’s online research environment, facilitated by easy access to information on the Internet, does not mean that students are able to find the kind of information they need when they need it. Nor does it mean that students know how to recognize whether or not the information they have found is accurate and reliable, both of which are key IL skills (Head & Eisenberg, 2009; Simon 2009).

Students themselves express difficulty finding, evaluating, and using information. In the research report released by Project Information Literacy, Finding Context: What Today’s College Students Say About Conducting Research in the Information Age (Head & Eisenberg 2009), students state that they have difficulty identifying a topic, knowing and using discipline-specific terminology to locate information effectively, and interfacing between Internet and library resources. Students continue to be overwhelmed by choices, have difficulty finding the kind of information they are seeking, and do not receive adequate orientation on how to find relevant information (Head & Eisenberg, 2009). Thus, allowing students to determine their own way to develop IL skills seems an inadequate response to the need.

The instruction models described that rely on recommended orientations and courses or on faculty-requested IL instruction are...
also ineffective methods for ensuring that all students have the opportunity to learn how to find, evaluate, and use information ethically. Students who most need IL instruction may choose not to attend a recommended orientation or optional course. Faculty may be unwilling to devote a portion of their instructional time to support the development of skills they perceive students already have or should be able to learn on their own. Recommended IL instruction does not adequately meet accreditation requirements for universities to ensure that all of their graduates are information literate.

Instructional models that require students to complete an orientation, session, or course to develop IL skills are an improvement over recommended instruction, but there are challenges with these models as well. Students introduced to IL skills during new student orientations may not retain these skills and be able to effectively apply them when they encounter their first research assignment weeks or months after orientation. Instruction provided in a single hour-long session can not adequately cover the range of information sources, tools, and skills students need to learn for their academic and future professional work. Stand-alone IL courses are often associated with general education distribution requirements rather than discipline-specific courses. Given the general nature of these courses, activities and assignments do not provide students with the necessary orientation to information sources, tools, and skills specific to their discipline and profession.

Research in adult learning and motivation originating with Malcolm S. Knowles and Raymond J. Wlodowski informs best practices in higher education for instructional design. These best practices, as summarized by Thoms (n.d.), include:

- Presenting new information within the context of the course activities, discipline, and future profession to maintain engagement;
- Presenting information in bite-size chunks that permit mastery;
- Providing opportunities for students to learn by doing through authentic activities and assessments;
- Timing the introduction of new information and skills immediately preceding their need.

Findings from the research in adult learning and motivation that inform best practices in instructional design are also relevant to the design of IL instruction in higher education.

A Path Towards IL Integration

Prior to 2003, City University of Seattle’s IL instruction was delivered primarily by staff librarians and adjunct librarians through fifteen–sixty minute sessions at new student orientations and in one–two hour-long sessions in specific courses identified within academic programs. Additional sixty-minute sessions were scheduled at the request of individual faculty members. With academic programs delivered in online, mixed-mode, and face-to-face formats at locations around the world, including the United States, Canada, Mexico, China, and Europe, known gaps existed in IL instructional delivery as well as quality. The IL instruction program prior to 2003 primarily served students at locations in Washington State and Canada, but did not consistently meet the needs of students studying in the variety of delivery formats in locations around the world such as Europe and China.

In addition, CityU librarians were keenly aware that these sessions were their only opportunity to introduce a wide range of skills and resources to students. The time frame allotted was not sufficient for orienting students to the resources within their discipline. Librarians could limit the range of skills they provided instruction on and encourage students to seek additional one-on-one help (which few accepted); or they could rush through instruction on a variety of IL skills using a traditional lecture-style approach, overwhelming students with information they would not likely retain or be able to apply to their assignments. The latter option was out of alignment with best practices in adult learning as well as with the City University Academic Model’s (City University of Seattle, 2011) focus on active student-centered learning.

Whenever possible IL instruction sessions were linked to skills needed for specific assignments and were scheduled just prior to
students' need to begin their research. More frequently, however, it was difficult to time the instruction appropriately, and by the time librarians were able to meet with students, their need for specific instruction had passed. Success of this program's model was reliant on faculty awareness of and willingness to host sessions. While most faculty acknowledged the importance of IL instruction, each quarter a number of faculty reported concern with the amount of instructional time they lost to the IL sessions, and some faculty refused to schedule the sessions at all.

Internal surveys and anecdotal student and faculty feedback confirmed that the existing models of IL instruction were not effective. Some students reported receiving the same instruction in multiple courses or receiving instruction on how to use tools they were already well versed in, while other students received no instruction at all. A small group of graduates even reported to library staff that they never realized they had access to any library resources from City University.

Librarians grew dissatisfied with their inability to provide consistent, relevant, and engaging instruction to support the development of students' IL skills wherever and whenever CityU programs and courses were offered. It became increasingly clear that the existing instruction program was insufficient and in need of revision.

The move towards program-level integration of IL skill development, designed to reach students and faculty whenever or wherever they were learning and teaching, originated with a plan developed by the library's director of operations at an ACRL Immersion program (Association of College & Research Libraries, 2011). Beginning in 2003, the director of operations led a university-wide initiative to develop a fully integrated IL instruction program designed collaboratively by faculty and librarians. The Information Literacy Task Force, formed in 2003 to design this program, included faculty from each school, a representative from Canadian programs, and the library's director of operations.

The specific goals of the task force were to develop a mission statement, integrate IL into CityU's institutional learning goals, define IL competencies, and develop a rubric based on the ACRIL IL model (Salman & Mara, 2009). The work of the IL Task Force, as well as the ongoing collaborations between CityU faculty and librarians to integrate IL instruction throughout the curriculum, was guided in large part by ACRL's Characteristics of Programs that Illustrate Best Practices (Association of College & Research Libraries, 2003). Some of the ACRL best practices that are evident in CityU's program include:

- A mission statement aligned with and corresponding to the mission statement of the university;
- Clearly articulated goals and objectives developed with input from relevant constituencies;
- A plan for how faculty and librarians will collaborate to design and integrate student-centered information literacy skill instruction throughout the curriculum;
- Administrative and institutional support for implementing the plan;
- Assessment and evaluation of student achievement of information literacy skills through CityU's program assessment process.

All goals of CityU's task force were achieved by 2005, and the mission statement developed by the task force follows:

City Universisy seeks to develop accomplished information users. By infusing information literacy instruction throughout the curriculum, we teach students to recognize when information is required, to find and retrieve it, to evaluate its relevance and authority, and to use it effectively. This supports the university’s mission to provide high-quality learning experiences for adult learners and to develop skills for lifelong learning. The ability to use information effectively enriches our graduates' contributions to both academic and professional endeavors.

Two CityU Learning Goals were revised to include IL skills, and the IL rubric developed by the task force was made available to faculty and librarians developing programs and courses at the university.
Work of the IL Task Force was shared in 2005 through workshops attended by program directors and course managers responsible for the design of academic programs and individual course curriculum (Salman & Mara, 2009). With the shift to institutional support of IL skill development and the explicit articulation of IL in CityU’s Learning Goals came the acknowledgment that responsibility for IL instruction would be a collaborative venture between faculty and librarians. Task force members facilitated a review of curriculum by faculty and librarians to identify courses and assignments with IL components represented on CityU’s IL rubric. Through this work CityU’s program to integrate information literacy across academic programs was launched.

CityU’s team-based curriculum development process and integration of IL instruction across academic programs continues to evolve through the work of the university’s Curriculum Quality Committee. Program development teams consisting of the program director, faculty (domestic and international), subject matter experts, and librarians create program outcomes relevant to the profession that are mapped to university learning goals and existing professional standards. Key assessments for measuring student learning outcomes, and the courses in which they will be offered, are identified by the team.

With faculty input librarians create IL integration maps to assist in planning which IL skills will be taught within the context of specific courses and required assessments. Faculty and librarians make note of any IL instruction present in required readings and course activities. Gaps between these materials and the information and skills students need to demonstrate mastery of program and course learning outcomes are identified next. Methods for addressing these needs across the academic program are listed on the IL integration map for creation by course design teams (CDTs). Careful planning at the initial design phases of a new or revised program allows multiple opportunities for students to develop from novice to expert users of information specific to their future profession. Students receive small portions of IL instruction at their point of need and within the context of their discipline that lead to mastery (Thoms, n.d.).

Implementation of the program plan for IL integration takes place through CDTs whose membership consists of course managers, faculty (domestic and international), subject matter experts, and librarians. Faculty and librarians serving on CDTs create multiple types of IL instruction materials. To meet the goal of providing IL instruction whenever and wherever students and faculty are learning and teaching, librarians and faculty focus on creating content that is accessible online. Most content is hosted on the library pages in the student portal and linked within the university’s learning management system (LMS) to relevant learning activities and assessments.

At the most basic level of IL support, faculty and librarians provide access through the university’s LMS to general resources, including a list of online article databases, self-help guides, and the research and reference services provided by the library. In addition, a quarterly system message is posted in the LMS reminding all students of the information resources and services available to them through the university’s library. While this may ensure that no future graduates exit their programs without knowledge of the library services available to them, this alone is not an adequate model for teaching students how to find, evaluate, and use information within the context of their profession.

Faculty and librarians focus the majority of their collaboration on developing a range of IL instruction materials that are integrated into specific courses, learning activities, and assessments. The instructional materials are designed for ease of delivery by faculty who know best when and what type of IL instruction students in their course need. Librarians are available on demand to assist faculty with the delivery of any or all IL instruction activities and assessments. The variety of materials developed includes, but is not limited to:

- Course resource pages listing required and recommended resources that are selected by faculty and librarians to meet the needs of required assessments;
- Announcements pre-loaded in the LMS for faculty to use at students’ point-of-need;
• Online discussion forums co-facilitated by faculty and librarians on discipline-specific IL topics;
• LMS learning modules on discipline-specific IL topics co-located with required learning activities and assessments;
• Flash-based video and text-based tutorials covering a wide range of topics including how to use APA citation style, how to effectively search specific online databases, how to request or renew library materials, and how to effectively locate discipline-specific information;
• Annotated bibliography activities tailored to meet the needs of required assignments;
• Webinars on discipline-specific IL topics;
• Online office hours for individualized research consultations with a librarian.

Integrated IL instruction is uniquely tailored to each academic program at CityU and may include any combination of the instruction materials and methods listed above.

Integration in Action

The plan for IL integration in City University’s Bachelor of Science in Business Administration (BSBA) and Master of Business Administration (MBA) programs began in 2008 during a regularly scheduled review process. Working independently of one another, the MBA and BSBA program development teams started the process by reviewing student assessment data related to existing program outcomes. Subject matter experts and business leaders on the team provided input on the kind of skills business students today need upon graduation to compete effectively for jobs and in the workplace. The MBA and BSBA teams revised graduate and undergraduate program learning outcomes to align with current workplace expectations and university learning goals, and designed authentic summative assessments to demonstrate student mastery of program learning outcomes.

With a clear outline of the needs of each program articulated through program learning outcomes and with key assessments identified, program directors, course managers and the librarian designated to support the BSBA and MBA programs set to work planning how to integrate IL instruction with the goal of providing all students, whenever and wherever they are learning, with multiple opportunities to learn IL skills related to their profession. While the nature of required assessments for undergraduate and graduate students differ, course managers leading design teams and the business librarian both recognize that the types of information students need to learn how to find, evaluate, and use as they move into new phases of their business careers are similar. For example, students in the BSBA and MBA programs must know how to find information such as:

• Articles by business leaders or professional organizations that inform best practices in the workplace;
• Industry trends and reports;
• Company information (both public and private);
• Industry and company financial data to inform decision making;
• Local, regional, and global market information;
• Local, regional, and global laws governing business practices;
• Domestic or international governmental economic data and reports.

Students in the BSBA and MBA programs benefit from learning how to locate primary source materials on the Internet, such as annual reports and financial statements on company websites, or market demographics from a site such as the US Census Bureau. They also benefit from learning how to locate secondary sources that include some analysis of industry or company data, organizing it in a format within a single source that is more suited for their specific need. While some secondary sources can be found on the Internet, full text access may be limited or reports (such as specialized marketing data) may be prohibitively expensive for students to purchase. To access these kinds of resources, students need to learn how to use tools such as subscription business databases provided through academic library sites.
In a cohort-based program, one in which a group of students take courses in a prescribed order, faculty and librarians can be very specific in the design of a sequenced integrated IL instruction program. Pretesting in one of the first classes in the sequence would identify the IL skills students bring with them. Learning activities could be modified to place more or less emphasis on developing certain skills depending on the results of the pretest. Based on the plan articulated on the IL instruction map, faculty teaching individual course sessions would know with certainty the courses in which IL skills are taught and would not repeat skill-based instruction unless they recognize that their students need to have these skills refreshed for their course’s required assessments.

In non-cohort-based programs, programs in which there is flexibility in the order in which students take courses, it is more challenging to design a sequenced integrated IL instruction program. CityU’s BSBA and MBA programs are non-cohort based. While there is a recommended sequence for moving through each program, students may take courses in nearly any order. It is more challenging for faculty to know whether or not students have taken courses in the recommended sequence that would build the IL skills they need for the courses students are currently enrolled in. For this reason, CityU faculty and librarians designed integrated IL instruction programs for BSBA and MBA students that include required, recommended, and on-demand instructional materials linked within the LMS at students’ point-of-need.

While CityU’s MBA program is non-cohort based, the program director and faculty know that the majority of students begin their program by taking Essentials of Business Management, and Business Communications. Required readings in these courses introduce students to primary and secondary research sources and to methods for evaluating websites. In addition, textbook readings cover specific sources recommended for business news and trends, company and industry information, US Government data, and international trade information. Tools used to locate business information that are introduced include subscription article databases available through public or academic libraries, and search engines such as Google.

Faculty and the MBA librarian extend students’ learning in these courses through instructional materials and activities that include learning units on how to locate company and industry information using CityU’s online business article databases (Business Source Complete and ABI-Inform Industry/Trade), co-facilitated webinars and discussion forums designed to support students’ first attempts using these tools, and research tips posted as announcements in the LMS course shell and e-mailed to students. Students also receive instruction on the American Psychological Association’s style for writing and correct citation of resources. Student skills in finding, evaluating, and using business information sources are measured through assessments such as the Company Competitive Analysis, Personal Learning Journal, Capsim Simulation Rounds, and writing activities in which students practice incorporating business research found in scholarly sources with practical applications in the workplace.

Intermediate-level instruction, focusing on how students can improve search results in online databases, is delivered during the MBA’s Project Management and Prioritization course in the form of learning units on executing research for a business plan and locating data for the interview and narrative sections of a business plan. Students explore resources available at no cost on the Project Management Institute’s website, comparing and contrasting these resources with those available through subscription databases hosted by the library. In the event that individual students have enrolled in this course outside the program’s recommended sequence, learning units that teach students introductory search skills are also linked within the LMS course shell.

Intermediate and advanced IL skills are further developed through courses MBA students typically take later in their program. Focused instruction through discussion forums and learning units on how to locate and evaluate market research data through Global Market Information Database is integrated in the Applied Marketing course. In Evaluating Financial Information, IL learning activities introduce students to how to locate industry and company data and financial ratios using specialized business databases such as Morningstar, MintGlobal, and Standard & Poor’s NetAdvantage. In Managerial Accounting, students are taught how to navigate the FASB Codification Database to locate...
current accounting regulations, and in Law and Economics for Global Business the MBA librarian and faculty teach students how to locate business information for specific countries.

Having learned of multiple authoritative sources for business information and having practiced the skills needed to access information from tools such as subscription business databases through earlier coursework in the MBA program, students are well equipped to complete the program’s summative Practical Business Application assessment and to demonstrate mastery of program outcomes, including outcomes related to IL skills. At this point in the program, the MBA librarian is available on demand to students for small-group or one-on-one research consultations, and students are provided with information on how to access similar subscription business databases through community resources such as public library systems.

Instruction in the BSBA non-cohort-based program follows a similar pattern to that provided to MBA students. Most students begin the BSBA program by enrolling in the Critical Thinking, and Professional Communication courses. Introductory-level IL instruction materials are integrated and aligned with required assessments, teaching students how to locate professional and scholarly business sources through the Internet and online article databases provided by academic and public libraries. Faculty and the BSBA librarian begin the program with an introduction to Business Source Complete and ABI/Inform Trade & Industry. Intermediate instruction in the use of tools such as MintGlobal, Global Market Information, Morningstar, and Standard & Poor’s NetAdvantage is integrated in courses such as Interpretation of Financial Accounting, Legal Issues in the Workplace, and Business Economics. When students complete their program through a capstone assessment course such as Business Strategy, the BSBA librarian is available on demand to students for small-group or one-on-one research consultations.

**Future Directions for Information Literacy Integration**

Evaluation of student achievement of BSBA and MBA IL program learning outcomes is in the beginning phases at CityU. Assessment data for program outcomes related to IL skills was not included in the 2010 program assessment report due to lack of comparative data from previous years. Qualitative feedback from course managers and students indicates that the integrated IL instruction program is more effective than CityU’s previous model of providing a single, hour-long session in the courses Critical Thinking (BSBA), and Essentials of Business Management (MBA). Course managers feel that the librarian assigned to course design teams adds value to the development of required and recommended resources, IL learning activities, and the design of authentic assessments that include deliberate research components. Students’ access to IL instruction at their point-of-need has improved in the revised BSBA and MBA programs with the development of online tutorials and learning units available whenever and wherever students and faculty are learning and teaching. Quantitative data on the use of business databases available through CityU’s library confirms that students are accessing these resources 10–30 percent more frequently in the 2009–2010 academic year than in the same time period during the 2008–2009 academic year.

As BSBA and MBA courses are reviewed by course managers, feedback from faculty teaching individual sessions of each course is gathered and used to inform improvements to course materials, including the integrated IL instruction materials. The business librarian adds data collected through an analysis of reference questions posed by BSBA and MBA students, illustrating gaps in their ability to find, evaluate, and use information for required assessments. In collaboration with course managers, the business librarian will continue to develop new materials, to increase the differentiation of existing IL instruction materials to meet the needs of graduate and undergraduate students, and to strengthen the ties between IL learning activities and required assessments.

Quantitative research designed to demonstrate the impact of integrated IL instruction on BSBA and MBA student learning should be conducted by CityU faculty and the business librarian. While IL instruction materials are integrated into CityU’s curriculum document and may be listed as required, neither the BSBA or MBA programs have measured whether faculty teaching individual course sessions are using these materials with their students. If the results of quantitative research confirm improved student...
achievement of course and program learning outcomes when IL instruction materials are used, faculty teaching individual courses will be more likely to follow course guidelines and use materials designated as required in the curriculum.

The library should also collaborate with the university’s Department of Training, Curriculum, and Faculty Development to provide faculty with professional learning opportunities to enhance their own IL skills. Professional learning opportunities for faculty would increase awareness of the specialized business databases available through CityU’s library and increase faculty comfort levels using these resources. Students will benefit from faculty’s increased knowledge of current tools for finding information.

City University of Seattle will continue to combine the discipline-specific knowledge of program directors, course managers, and faculty in the classroom with the business librarian’s knowledge of information tools and sources to improve student learning and achievement of program learning outcomes.

References


