



Accounting Students and Information Competence: Evidence from Course Syllabi and Professional Accounting Association Competency Maps

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1. Introduction and Problem Statement

As Brock University's business liaison librarian, I have had some success integrating information literacy into the business administration curriculum. However, there have been very few requests for instruction in undergraduate accounting courses. I had only anecdotal evidence regarding the low levels of library use and poor research skills of undergraduate accounting students and was curious as to why there was so little interaction with the Library. Therefore, in the spirit of **evidence-based librarianship**, I conducted a **syllabus study** in order to gain insight into the library use and research expectations of accounting faculty for their undergraduate accounting students. In addition, I examined relevant **professional accounting association competency maps** for evidence of expected professional competencies related to information competence.

2. Context

Brock University is located in St. Catharines, Ontario, Canada with a total student enrollment of 17,000 FTEs. The Faculty of Business has approximately 90 faculty and 2500 students. It offers undergraduate and graduate degrees in Accounting and Business Administration and is AACSB-accredited. The Accounting Department has 29 faculty and approximately 500 students. Brock's Bachelor of Accounting program is accredited by the Government of Ontario as well as the major Canadian professional accounting societies (CICA, CMA Canada, and CGA Canada).

3. Literature Review

The CICA defines competence as "the broad range of knowledge, skills, attitudes, and observable behaviour that together account for the ability to deliver a specified professional service" (2007, p.5). Competency maps which articulate the technical and professional skills that professional accountants should master have been developed by the three main Canadian professional accounting societies (CICA, CMA Canada, and CGA Canada). Information literacy has been defined as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information (ILCS, 2000). ACRL's Information Literacy Competency Standards for Higher Education are well-known and have been adapted for use with business students (Cunningham, 2003).

Several recent studies in professional accounting and management education journals have identified research and writing skills as a fundamental asset for accountants (Burke, J.A., Katz, R., Handy, S. & Polimeni, R., 2008; Duff & Zidulka, 2008). In the United States, the CPA exam now tests the research skills of accounting candidates, so the onus is on US accounting educators to incorporate information literacy skills into the curriculum. Suggested techniques include collaboration between librarians and accounting faculty, non-credit library workshops, credit courses via general education requirements, and exposure to research databases and websites (Jackson & Durkee, 2007; Burke et al, 2008). In the Canadian context, however, it has been noted that many entry level staff accountants lack the necessary writing skills and that accounting education at the undergraduate level still focuses primarily on technical skills, rather than soft skills such as communication (Duff & Zidulka, 2008).

4. Syllabus Study Methodology

A syllabus or course outline has three main purposes: as a contract between the instructor and the student which outlines the expectations of both parties regarding course requirements including assignments, as a permanent record of what was taught, and as a learning tool (Parkes & Harris, 2002). In the library science literature, syllabus studies have been undertaken in order to develop a better understanding of library use, to plan curriculum-integrated instruction, and to guide the creation of course and subject guides (VanScoy & Oakleaf, 2008; Dewald, 2003; Williams, L.M., Cody, S.A., & Parnell, J., 2004).

Syllabi from undergraduate accounting courses taught during the 2008/09 academic year were obtained from the Accounting Department's administrative assistant. Each course syllabus was analyzed and assigned a level of library use based on a scale first developed by Lauer, J.D., Merz, L.H., & Craig, S.L. (1989) and later adapted by Dewald (2003). This five point scale was further adapted to reflect the increasing use of linked readings in course management systems such as WebCT or Sakai in lieu of library reserves as described below:

Rating Codes and Descriptions

0 No research or library use required: No evidence on syllabus of research or library use required. [reliance on textbook or course pack].

1 Reserve Readings Only/Readings Available within WebCT or Sakai: Linked readings in course management system deemed equivalent to reserves.

2 Library use for outside readings (Not on reserve or within WebCT or Sakai): Library use required or expected to complete optional readings from a list supplied by the professor.

3 Some research or library use for shorter assignments: Some research or library use required for shorter class presentations or shorter writing assignments (assignments that require self-directed, exploratory behavior).

4 Significant research projects: Research or library use required for term papers and other research projects of some significance. Defined as at least 10 pages in length or value of at least 20% of final grade.

Abbreviations:

AACSB (Association to Advance Collegiate Schools of Business)
ACRL (Association of College and Research Libraries)
CGA (Certified General Accountants)

CICA (Canadian Institute of Chartered Accountants)
CMA (Certified Management Accountants of Canada)
ILCS (Information Literacy Competency Standards for Higher Education, ACRL)

5. Syllabus Study Results

Syllabi from 66 sections of 23 courses were analyzed. This sample size represented 100% (23/23) of the courses offered and 75% (66/88) of the sections offered in the Fall 2008 and Winter 2009 academic terms. Table 1 shows the level of library use by course level. 45.5% of all undergraduate accounting courses required no research or library use. 16.7% used reserves or linked readings, while 25.8% used outside readings. Some research was required in 10.6% of courses (all at the 400 level) and only one course section required significant research. For illustrative purposes, an example of Level 3 and Level 4 use appear below:

Example of Level 3 library use: a 400 level Accounting Theory course has a group research report and presentation worth 15% of the final grade. The written report is to be from 20-25 pages in length.

Example of Level 4 library use: a 400 level Financial Analysis course (cross listed between Accounting and Finance) has a group term project worth 20% of final grade that involves selecting a publicly-listed company and conducting a thorough financial statement analysis. Students are required to retrieve data from a variety of resources including financial databases such as Compustat.

Table 1: Library Use by Course Level

Accounting Courses	Total Number of Sections by Level	0 (No research or library use)	1 (Reserves or WebCT)	2 (Outside Readings)	3 (Some research)	4 (Significant research)
100 level	17	13	2	2	0	0
200 level	18	9	5	4	0	0
300 level	10	6	2	2	0	0
400 level	21	2	2	9	7	1
Total Sections	66	30	11	17	7	1
Percentage of course sections (across all levels)		45.5%	16.7%	25.8%	10.6%	1.5%

6. Professional Accounting Association Competency Map Analysis

Three Canadian professional accounting association competency maps were analyzed and compared to ACRL's *Information Literacy Competency Standards for Higher Education* in order to assess professional accounting association expectations for information competence. The results of this comparison appear in Table 2 and demonstrate that across all three professional accounting associations, there is a recognition of the importance of information literacy competency as part of the professional skills set.

UFE Candidates' Competency Map (CICA, 2007). The list of CA competencies includes specific competencies (e.g. assurance, taxation) and pervasive qualities and skills. Pervasive qualities and skills include ethical behavior and professionalism, personal attributes, and professional skills. In Ontario, these pervasive qualities and skills are developed and tested during the ICAO's three week "School of Accountancy" which is completed prior to writing the Uniform Final Examination (UFE) to become a chartered accountant.

CMA Competency Map (CMA Canada, 2008). The map includes six functional competencies (i.e. strategic management) and four enabling competencies. The enabling competencies reflect personal attributes and include problem solving and decision making, leadership and group dynamics, professionalism and ethical behavior, and communication (both written and oral). Most of the enabling competencies cannot be directly tested on the Entrance Examination – candidates for the CMA designation are expected to attain these competencies through their post-secondary studies.

CGA Competency List (CGA Canada, 2004). The competency list includes competency statements and examples in areas of technical knowledge, general management, leadership, and professionalism.



<http://www.cga-canada.org>



<http://www.cma.ca>



<http://www.aacsb.edu/>



Source: <http://www.cma-ontario.org>

Table 2: Competency Map Analysis

ACRL Information Literacy	CICA	CMA	CGA
Standard One (Know). The IL student determines the nature and extent of the information needed.	III-1 Obtains information. III-1.1 Gathers or develops information and ideas. Identifies the purpose of gathering information or researching an issue.	E1 Problem solving and decision making. E1.1.1 Describes and develops research and problem solving skills within an academic environment.	Professionalism: Problem Solving "Uses a systematic approach to problem solving, from identifying the problem to developing and reporting recommendations."
Standard Two (Access). The IL student accesses needed information effectively and efficiently.	III-1 Obtains information. III-1.2 Systematically collects and analyzes data. Uses appropriate methods for obtaining or developing the information needed.	E1 Problem solving and decision making. E1.1.2 Systematically collects and analyzes data, generates and evaluates alternatives, and proposes solutions to given problems.	Professionalism: Problem Solving "Collects, selects, verifies, and evaluates information relevant to the defined problem." Professionalism: Integrative Approach "Aggregates information from a variety of sources to obtain the big picture."
Standard Three (Evaluate). The IL student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.	III-2 Examines and interprets information and ideas critically. III-2.1 Analyzes information or ideas. III-2.4 Evaluates information and ideas. III-2.5 Integrates ideas and information from various sources.	E1 Problem solving and decision making. E1.1.3 Applies critical thinking skills to a given business case.	Professionalism: Problem Solving "Analyzes data for patterns, relationships, and trends." "Assembles findings and conclusions to form a sound basis for decision making." "Considers alternative solutions and shapes recommendations."
Standard Four (Use). The IL student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.	III-3 Solves problems and makes decisions. III-4 Communicates effectively and efficiently. III-4.2 Documents in written and graphic form. III-4.3 Presents information effectively.	E4 Communication (both written and oral). E.4.1.1 Communicates effectively and confidently before an audience using techniques appropriate to: case reports and presentations and examinations.	General Management: Communicating "Expresses and exchanges information in a clear and concise manner." "Selects an appropriate medium on convey information, ideas, and results."
Standard Five (Ethical/Legal). The IL student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.	I Ethical Behaviour and Professionalism. I-2 Act competently with honesty and integrity. I-3 Carries out work with a desire to exercise due care.	E3 Professionalism and Ethical Behavior. E3.1.2.3 Maintains academic integrity and honesty. E3.1.5 Maintains legal and ethical standards in both public and private life.	Professionalism: Ethics and Trust "Applies professional ethical standards." "Hears and exercises due diligence."

7. Discussion & Conclusion

When comparing the results of the syllabus study to the results of the competency map analysis, there appears to be an expectations gap. All three Canadian professional accounting association competency maps refer to a set of professional skills that, when mapped to ACRL's information literacy competency standards, are equivalent to information competence yet the majority of courses taught required very little library use. Some evidence of research or library use requirements (at Level 3 or 4) was found in 1/3 of the 400 level course sections analyzed in this study, but these requirements are ad hoc and vary by instructor.

How might this expectation gap be addressed? The results of my study will be used to open a dialogue with accounting faculty to discuss the issue of information competence. Although students are doing well on their professional exams, how do we know that they are information competent (especially if these exams do not directly test these skills)? There is an opportunity to tie in to the new AACSB Assurance of Learning Standards (2007) and to develop rubrics to assess information competence as part of general knowledge and skills assessment. My future plans include investigating methods for assessing information competence (e.g. pre-tests and post-tests after information literacy instruction) where possible instructional interventions include course-integrated instruction, general library workshops, or information literacy tutorials.

What would your next step be? Comments and suggestions are welcome! Please contact: Linda Lowry by email at: lowry@brocku.ca or by phone at: 905-688-5550 ext. 4650.

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