

RESEARCH IN ACTION: USING RUBRICS TO ASSESS INFORMATION LITERACY SKILLS IN BUSINESS EDUCATION

Bobbi Makani-Lim

Ann Agee

Diana Wu

Marilyn Easter

San Jose State University

ABSTRACT

Information literacy—the ability to find, evaluate and use information effectively—is an essential skill set for college students but one that can be challenging to measure. This paper demonstrates that grading student assignments using analytic rubrics with measurable outcomes is a very effective way of meeting this assessment challenge. Students in upper-division business courses attended a library session on research skills and then were given course-embedded assignments, such as case analyses and research reports, designed to help them demonstrate their ability in using information. The completed assignments were measured using a standardized rubric and the results showed strong improvement in information literacy-related learning outcomes. This study also demonstrates how librarians enhance and support student learning of information literacy by teaching in-depth research skills. The results presented in this paper will be helpful to administrators, faculty, and librarians in higher education who are introducing programs on the development and assessment of information literacy skills.

INTRODUCTION

Higher education is facing an unprecedented challenge. It used to be that students were hampered by a scarcity of information. Now with current technology and a constant connection to the Internet, the opposite is true. Information overload seems to be the norm. To effectively sift through the millions of gigabits of information created every minute around the world and to use that information productively is a skill that students need in order to compete in the global business environment (Varga-Atkins & Ashcroft, 2004). It is part of the educator's responsibility to ensure that students, particularly those in the business field, develop the skills they need to be information literate.

According to the Association of American Colleges and Universities (n.d.), students who are information literate are able to:

- Determine the nature and extent of information needed
- Access the needed information effectively and efficiently

- Evaluate information and its sources critically and incorporate selected information into his or her knowledge base and value system
- Use information effectively to accomplish a specific purpose
- Access and use information ethically and legally

A 2013 poll conducted by the National Association of Colleges and Employers found that the ability to obtain and process information ranked in the top five of important skills/qualities employers looked for in new hires (NACE, 2013), and a survey of new college graduates that had been recently hired showed that "[almost] all of the participants agreed that a primary part of their jobs required them to find, evaluate, and use information to solve problems" (Head, 2012, p. 16).

Students today are digital natives who learned their alphabet from touch-screen devices even before they started any form of formal education (Sheesley, 2002). For many students, finding information is not a problem. A study of undergraduate students by the EDUCAUSE Center for Applied Research shows that 60% of those surveyed use smart phones to get information from the Internet outside of class and 40% to look up information on the Internet in class (Dahlstrom, Walker & Dziuban, 2013). Students have constant access to data. However, their ability to discern which types of information are relevant; to use these practically and effectively in specified situations; and to analyze the implications of this information still needs to be developed (Calzada & Marzal, 2013). Although students have continual access to information, there is a need to learn how to discern what is relevant and valid (Catts, 2012).

In the business world, information literacy is a set of skills that needs to be developed and honed through constant application (Varga-Atkins & Ashcroft, 2004). Educators can use coursework such as case studies, projects, and other assignments to let students practice and master these sets of skills. Librarians are also in a perfect position to strengthen students' information-handling abilities. In fact, there is a long history of librarians working together with teachers and professors in developing information literacy skills (Hysten, 2005; Merchant, 2007).

This paper explores how library research sessions and carefully designed class assignments were used to strengthen students' information literacy skills. It also demonstrates the effectiveness of analytic rubrics in assessing the students' learning outcomes in this very important area of their education.

RESEARCH PURPOSE AND SIGNIFICANCE OF THE STUDY

This article presents the results of the assessment of students' competency levels in three information literacy skills through the use of analytic rubrics with measurable outcomes. Through these means, instructors can help business students develop the information literacy abilities they need to bring value to their workplaces when they become professionals.

This study also presents analytic rubrics as a valid and credible instrument for the assessment of competency levels in information literacy learning outcomes as a result of a combined library instruction and implementation in actual coursework in business courses. This action research in assessment also highlights the

contribution of librarians in the academic objectives of the university in terms of developing student information literacy skills. This study would be helpful for administrators, faculty, and librarians in higher education when they consider introducing programs on developing information literacy skills and assessing their effectiveness in enhancing student skills and preparing them to be productive members of society.

The authors recognize that there is no specific way to measure competence in information literacy. However, it is critical to explore different approaches through which this may be accomplished. It is hoped that the results of this study will make faculty and administrators more aware of the importance of cultivating information literacy among undergraduate students and the impact of the collaboration between faculty and librarians in developing this skill set. This paper aims to contribute to the general field of knowledge about information literacy and its assessment using analytic rubrics. Although there are already existing publications about information literacy, there is a dearth of articles that deal with how this skill is manifested through students' course work, particularly in the field of business study.

LITERATURE REVIEW

"Information literacy" encompasses a set of skills that are critical to running a company effectively. While this term is not used frequently in the workplace, most companies and organizations employ a variety of different phrases, such as information management, knowledge management, critical thinking, decision making and complex problem solving, to describe the concept (Conley & Gill, 2011; O'Connor, 2008). Whatever terms are used to describe this set of skills, the fact is that being information literate has a definite impact on any organization's bottom line (Devasagayam, Johns-Masten, & McCollum, 2012; O'Connor, Radcliff & Gedeon, 2002; Reedy, Mallett, & Soma, 2013). Inaccurate and outdated information often leads to poor decision-making and the inability to evaluate information effectively is especially harmful because it can hurt a business strategically (Cheuk, 2008). The lack of information literacy can also hurt a company's productivity.

According to a survey of 3,000 knowledge workers conducted by Basex (2008), workers spent up to 50% of their day managing and searching for information. This trend was also discovered in the public sector when a survey was conducted among 100 federal, state and local government employees (Clarke & O'Brien, 2012). When asked, "What percentage of time are you unable to find information you need to do your job, even though you are pretty sure your organization has that information?", over 25% of respondents reported being unable to find or access the digital information they need more than 50% of the time (Clarke & O'Brien, 2012). Time spent looking and not finding the information required to do their job is a huge drain on employees' productivity and company resources.

In a national workforce study conducted by the University of Phoenix (2011), commissioned by the Bill and Melinda Gates Foundation, 82% of the respondents rated "critical thinking and problem solving" as very important, and 69% also rated

“the ability to analyze and synthesize information” as very important. Both these skills are critical components of the information literate person and employees equipped with these skills are considered key assets of a company. Case in point, when the company Environmental Resources Management (ERM) instituted a program on information literacy skills for its employees, ERM discovered that their employees’ new abilities “added critical business value” and introduced “a culture of interacting with information to increase work productivity” (Cheuk, 2008, p. 142).

There is a general agreement in business schools and in the business world that information literacy skills are important. A survey conducted by the Association to Advance Collegiate Schools of Business (AACSB) revealed that 90% of the 146 libraries contacted provided information literacy instruction to their business students (Cooney, 2005). Although the teaching seems to be taking place, what is lacking is an effective way to measure if the learning has been achieved. According to Rochford and Borchert (2011), “Higher level learning skills such as analysis, synthesis, and evaluation do not readily lend themselves to objective examination” (p. 258) and may be challenging to measure. However, an assessment tool, the analytic rubric, seems particularly well suited to this task.

INFORMATION LITERACY AND RUBRICS IN THE CONTEXT OF BUSINESS EDUCATION

Rubrics, a mainstay of primary and secondary education, can serve as both a teaching and assessment tool in higher education. Rubrics have been proven to be effective in helping students become more conscious of the research and evaluation skills they need in order to do well at an assignment, or in their careers (Reddy & Andrade, 2010). A recent review of published articles and studies done on rubrics in higher education showed that, of the articles reviewed, only seven were published before 1997, a demonstration of the relatively late acceptance this form of assessment has had in universities and colleges (Jonsson & Svingby, 2007). Although a relative newcomer to higher education, the rubric is now employed in a variety of disciplines, including business, and is used to assess a wide mix of student projects, among them “concept maps, literature reviews, reflective writings, bibliographies, oral presentations, critical thinking, citation analyses, portfolios, projects and oral and written communication skills” (Reddy & Andrade, 2010, p. 437). Rubrics can also be used as more than a way to assign grades. They can be used in class for students’ self-assessments or peer-assessments and serve as valuable teaching aids in this way (Andrade, 2005; Knight, 2006; Reddy & Andrade, 2010).

A rubric provides a scoring scale of three to four levels, from excellent to poor, and describes in detail the specific elements that make for the superior or inferior completion of an assignment (Hafner & Hafner, 2003; Reddy & Andrade, 2010). As delineated by Andrade (2005), rubrics are effective for a variety of reasons: they describe not only what a student should do to complete an assignment effectively but also what they should avoid; they help instructors detail the learning goals they have for their students; and they help rule out bias in grading (p. 439).

When a project is assigned and the specific criteria for success are spelled out at the same time, students know even before they begin work what is expected of them. With the aid of rubrics, instructors are given the opportunity to provide even-handed and honest feedback.

One other reason that rubrics are gaining in popularity is the change in emphasis of accrediting agencies, such as the AACSB and the Western Association of Schools and Colleges (WASC), away from a demonstration of what is being taught to a demonstration of what is being learned (Reddy & Andrade, 2010). WASC, which oversees the western region of the United States, recently redesigned its guidelines. WASC states that "institutions will be expected to demonstrate that their graduates have achieved the institution's stated level of proficiency at least in the following five areas: "written and oral communication, quantitative skills, critical thinking and information literacy" (WASC, 2012, p.9). Rubrics are an excellent way to assess the level of competency in specific knowledge areas and skills that the students acquired.

In this particular study, rubrics were very useful assessment tools because they provided instructors with an objective framework to specify and evaluate the information literacy skills that the students needed to demonstrate. The set of criteria presented in the rubric served as a guide for both the instructor and the students on the level of expected performance. The scoring scale shows the areas where students need to improve.

An important feature of the rubric is that it helps provide useful feedback to both the instructor and the students. On the part of instructors, feedback on the effectiveness of the instruction is given and this can help them focus on specific areas for improvement, especially when a majority of the students are turning in work that is sub-par. When this happens, there is an opportunity to look at the given criteria and evaluate the delivery or even the content of the learning material. Likewise, the scores on the rubrics give students more informative feedback and input about their areas of strength and where they need improvement.

Care should be taken when using this type of assessment, however. The effectiveness of the rubric depends on its design and clarity to the users. Designing a rubric is not an easy task. Educators have to ensure that the rubric is able to capture the learning outcomes of specific coursework. All criteria have to be very clearly articulated and integrated so that students can easily understand what is expected from each assignment. Students may not know how to use a rubric, thus instructors should take the time to explain and, if needed, reintroduce the rubric concept throughout the class (Andrade, 2005). For instructors, creating a rubric that is both valid and reliable is a task that is neither quick nor easy. Rubrics must align with the curriculum and the course learning objectives and be worded in a way that is not open to interpretation (Andrade, 2005).

METHODOLOGY AND RUBRIC DESIGN

This study encompasses six semesters (three academic years). The authors developed analytic rubrics with the intention of assessing information literacy among students in the College of Business. The rubric was used to score the course

work assigned to the students to determine their levels of mastery of essential information literacy skills. Figure 1 shows the flow of the research procedure conducted in each of the semesters.

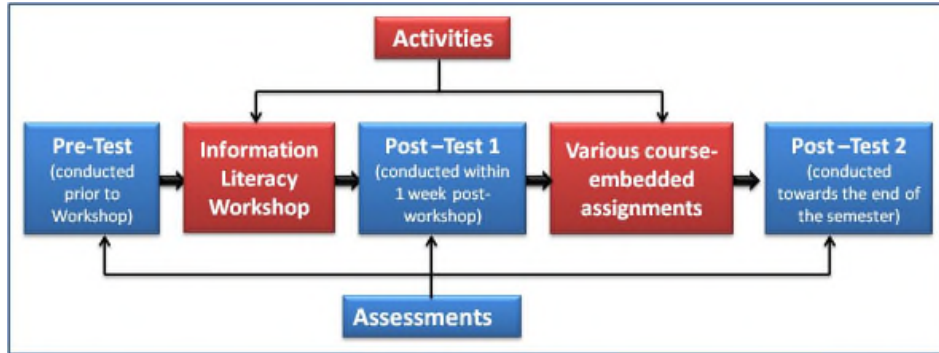


Figure 1: Flow of Activities

Over the six semesters analyzed, 1,401 students were assessed on their information literacy skills after receiving approximately two hours of lecture in their classes from the College of Business librarian. Lectures covered information literacy skills and how to effectively use the library databases and the Internet to conduct research. Students were enrolled in one of the following business courses: Business Communication; Integrated Marketing Communication; Managerial Communication; Professional Relationship and Communications; Business Communication and Ethics; Introduction to Marketing; Introduction to Entrepreneurship; Planning New Ventures; Global Entrepreneurship; and Global Dimensions of Business. These courses represent a robust cross-section of students in various fields of business.

Prior to the start of each semester, the instructor contacted the librarian to arrange a time for students to meet at the library where they would receive a lecture tailored to their specific course. In preparation for the library lecture, the librarian reviewed the course syllabus and learning outcomes. The instructor and the librarian then agreed on content-related materials and learning objectives for the workshop.

Students were given a pre-test to establish each student's competency benchmarks prior to attending the information literacy workshop. The students were asked to write a one-page analysis on a mini-business case given to them as homework. Students were then required to do research in order to answer questions given about the case. The results from this pre-test gave the professor an indication of the skill level of individual students. The rubric was designed to assess the students' mastery of the competency standards, as defined by the Information Literacy Competency Standards (AAC&U, 2004). The rubric has three major categories to cover these skill areas: (1) communication of ideas, (2) ethical use and citation of resources; and (3) critical thinking, analysis and evaluation of data. The competency standards are defined as follows:

Table 1: Information Literacy Skills and Competency Level Table

Skill	Competency Level
Communication of ideas	<i>Note: This specific skill does measure information literacy competency standards directly, but is a way to let students demonstrate their mastery of the standards. For the purposes of this particular study, the communication of ideas is done through written work, such as case analysis and research projects.</i>
Ethical use and proper citation of sources	Access the needed information effectively and efficiently Access and use information ethically and legally
Critical thinking, analysis and evaluation of data	Evaluate information and its sources critically and incorporate selected information into his or her knowledge base and value system Determine the nature and extent of information needed Use information effectively to accomplish a specific purpose

The analytic rubric used for all the pre- and post- tests is shown in Table 2:

Table 2: Information Literacy Analytic Rubric

Skill	Beginning Level	Proficient Level	Advanced Level
Communication of ideas	Demonstrates minimal use of appropriate grammar and language. Major grammar and spelling errors. Occasionally uses relevant information and content in some parts of the work, but did not deliver an adequate understanding of the coursework requirement. Recommendations and conclusions are not clear.	Demonstrates appropriate use of grammar and language. Three to six errors noted in the document. Uses some relevant information and content through most of the work and delivered an adequate understanding of the requirement of the coursework. Some articulation of the recommendations and conclusions.	Demonstrates excellent use of grammar and language. Only one or two minor errors. Uses relevant information and content to shape the entire write up and to deliver a totally coherent understanding of what coursework requirement. Clear articulation of the recommendations and conclusions.

Ethical use and proper citation of sources	Demonstrates an attempt to use credible sources to support ideas in the write-up. Sources were not cited properly.	Demonstrates some use of credible, relevant sources to support ideas in the write-up. Some, but not all, sources are cited appropriately.	Demonstrates consistent and skillful use of high quality, credible, and relevant sources to support ideas in the write-up. All sources are cited appropriately.
Critical thinking, analysis and evaluation of data	Repeats case facts and attempts to draw some conclusion from the data. Made a decision that is not supported by the analysis.	Summarizes, synthesizes and evaluates SOME data. Draws some conclusion from the data. Decisions made are partially supported by the analysis of some relevant business issues.	Summarizes, synthesizes and evaluates ALL the data and views the information critically. Examines conclusions based on data. Decisions are fully-supported by the analysis of the relevant business issues.

Following the pre-test, students attended the library research session. To achieve the information literacy learning objectives, the librarian guided students' learning step by step. She first gave an overview of the library website with the focus on resources, such as databases and books, and tools for citing and writing. The librarian demonstrated how to build a search query in a database and compared that with a Google search. She then explained how to evaluate the credibility and accuracy of the search outcomes by using the rule of 5 W's: who, where, when, why, and what. Next, she instructed students on how to interpret a citation and demonstrated how to build a reference list using the APA citation method. Following the workshop, skills mastery was measured with two different post-tests at two different points during the semester. The first post-test was given within a week or two after the students attended the workshop. The second post-test was done on a terminal research project for the course, which was the culminating test of students' information literacy skills.

RESULTS AND DISCUSSION

The results of the pre- and post-case analyses gathered from 1,401 students from Spring 2010 until Fall 2012 are presented in this section. The assessment results of 67 students were excluded from this study because they were not able to complete all three tests (e.g., some did the pre-test, but not the post-tests; some did not take the pre-test but only took the second post-test). Mastery of the standards is measured through three skills: communication of ideas; ethical use and citation of sources; and critical thinking, analysis and evaluation of data. Students' information literacy competency skills were classified into beginning, proficient,

and advanced, based on their performances on these skills, using rubrics from AAC&U. For each semester, the progression of students from beginning to proficient to advanced levels was assessed through the pre-test and first and second post-tests.

The results of this research suggest that the learning model adopted to develop information literacy skills among students is promising. In general, the results across the three-year study are consistent in showing that a majority of the students who went through the program exhibited an improvement in their skills from beginning to proficient and advanced by the time the second post-tests were conducted.

Skill 1: Communication of Ideas: Students are expected to be able to express their ideas clearly and logically in written communication to demonstrate the application of their competency in information literacy. Although communication is not part of the defined competency standards for information literacy, it is through written work that students are able to exhibit their mastery of these skills. Through the written work, students should demonstrate effectiveness in communicating their strategies and conclusions based on the analysis and evaluation of the information they have at hand.

In Spring 2010, the percentage of students at the beginning level was at 43%, and this decreased to 6% towards the end of the semester. At the same time, students who exhibited proficiency in this skill rose by 30% (from 45% to 75%) during the same period. The results taken from the three-year study show that there is an improvement in this skill across the board. In the last assessment period, Fall 2012, the students at the beginning level fell to only 3% at the time the second post-test was conducted.

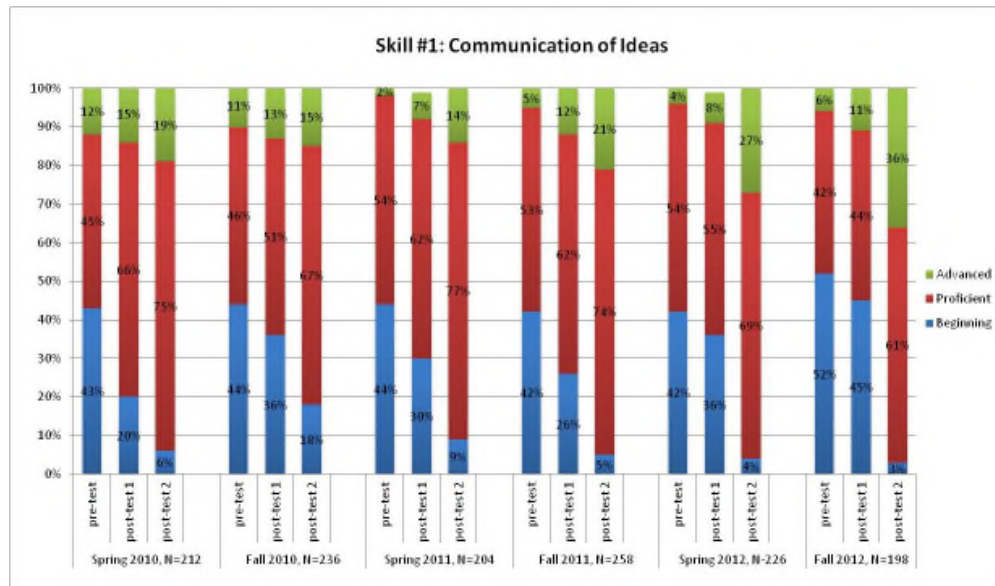


Figure 2: Skill #1: Communication of Ideas

Skill 2: Ethical Use and Citation of Sources: A critical skill that students should develop is to understand where and how to locate credible resources. At the same

time, they should be able to recognize the importance of maintaining their intellectual integrity by avoiding plagiarism and properly citing their sources. During the library workshops, students were taught how to conduct research on the Internet beyond just “Googling.” They were taught how to make a distinction between scholarly and popular articles, and how to use the university library research website to locate tools that could help them find credible information. Students were also introduced to and taught how to use online citation tools such as RefWorks so that they could document sources properly.

In Spring 2010, students at the beginning level at the time the pre-test was done was at 70% and this dropped down to 4% by the time the semester ended. At the same time, a majority of the students (74%) moved to the proficient level at the time the second post-test was conducted towards the end of the semester. This trend continued through the next five semesters, with the most dramatic decrease in the beginning level – from 82% to 1%--in the last semester assessed (Fall 2012). The improvement of the competency levels of the students in this area is encouraging. It demonstrates that proficiency of the students in this area can be improved through application of the knowledge they acquired in various coursework throughout the semester.

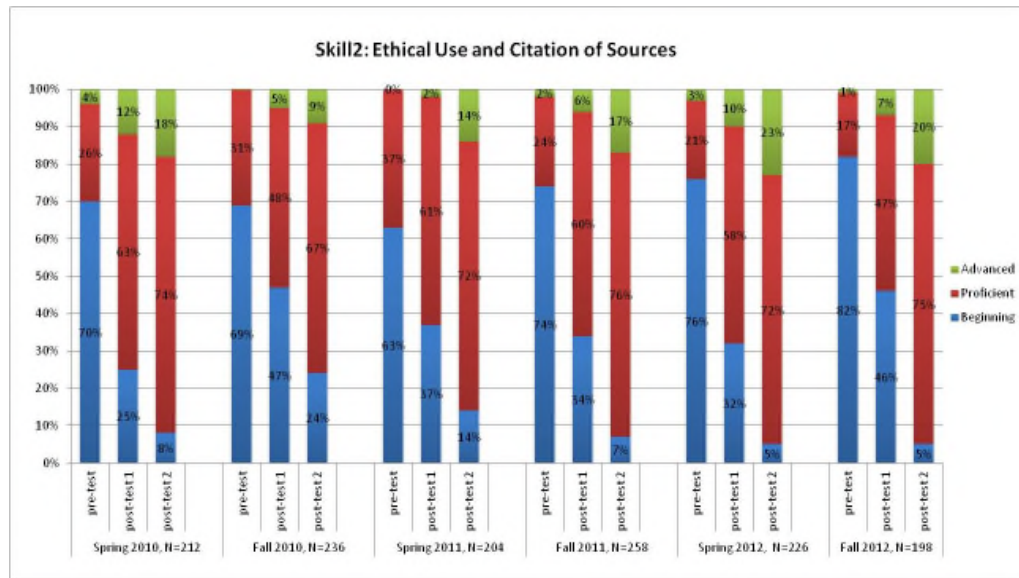


Figure 3: Skill #2: Ethical Use and Citation of Sources

Skill 3: Critical Thinking, Analysis and Evaluation of Data: Being information literate means knowing how to use information for a specific purpose. Given the vast amount of information available to students over the Internet, students should be able to identify what types of information will be useful to them. Once this has been accomplished, students should be able to analyze the information they acquired and create strategies to address the business issues given in the cases assigned and in the research project. The terminal project for the courses assessed

was a research project where students demonstrated their ability to use the information they collected in determining the best course of action for the business situations presented in the project.

In Spring 2010, students at the beginning level in the pre-test was at 48%, very close to the number of students at the proficient level – 46%. At the end of the semester, the students at the beginning level dropped down to 4%, while those at the proficient level increased to 83%. However, this trend was not exhibited throughout the course of the study. In the following semesters, the percentage of students moving to the proficient level never went higher than 70% towards the end of the semester. This might be an indication that most students may know where and how to find information, but they might be experiencing some challenges in analyzing and evaluating the information for specific purposes.

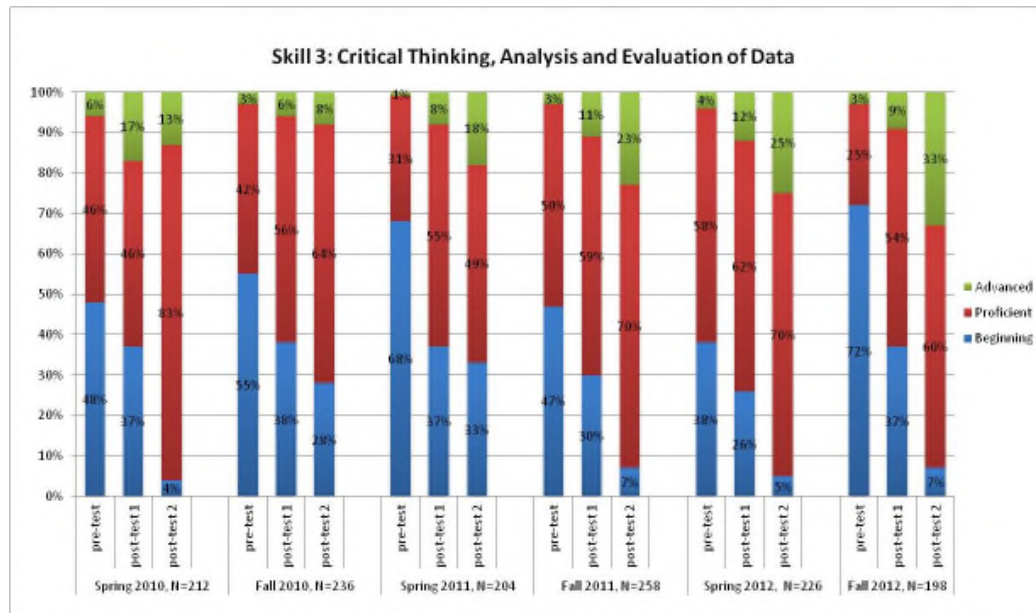


Figure 4: Skill #3: Critical Thinking, Analysis and Evaluation of Tool

CONCLUSIONS

Information literacy skills are crucial for students who plan to enter the business world. Business faculty can help develop and strengthen these skills by assigning case analyses, projects, assignments, and reports designed to immerse the students in simulated business situations. Through the use of analytic rubrics with measurable outcomes, instructors can accurately assess the level of competence achieved by the students in terms of the abilities encompassed within the definition of information literacy, particularly critical thinking. This gives the instructor an idea of the level of preparedness of the students for the workplace. Librarians enhance these lessons by providing in-depth instruction in research skills, which is a necessary first-step in developing information literacy. Taken altogether, this

approach is effective in aiding students in developing information literacy for the work world of today.

The assessment results were useful in helping faculty and administrators chart a program for the improvement of information literacy skills among students. To help improve students' communication skills, a liaison program was put in place to encourage greater and deeper dialogue between the business school and the departments teaching students business writing skills. Learning objectives were discussed and outcomes established in the writing courses. These programs are now in place and it is hoped that the College of Business will be able to address the areas of weaknesses revealed by the assessment.

Based on the assessment results, the Undergraduate Curriculum Enhancement Project (UCEP) committee is working with the different departments in the College of Business to find ways to strengthen skills in business-oriented analysis. Some of the courses are being redesigned and several pilot initiatives are being developed to focus on honing critical analytical skills. A program for incoming freshmen and transfer students was implemented and one of the key events at the orientation program was an introduction and application of research and analysis skills to a business case.

Moving forward, additional demographic data such as GPA, grades from previous relevant courses, and age range can be collected at the time of the pre-test to provide context to the benchmark grade that students receive. This additional background information will allow the instructor to redesign assignments as necessary to help students hone their information literacy skills. Assessing critical thinking is especially challenging and restructuring assignments to better measure this skill is a work in progress.

REFERENCES

- Andrade, H. G. (2005). Teaching with rubrics: The good, the bad, and the ugly. *College Teaching*, 53(1), 27. Retrieved from <https://er.lib.k-state.edu/login?url=http://search.proquest.com/docview/62143301?accountid=11789>
- Association of American Colleges and Universities. (n.d.). Information literacy value rubric. Retrieved from <http://www.aacu.org/value/rubrics/pdf/InformationLiteracy.pdf>
- Basex. (2008, December 22). Information overload now \$900 billion cost to U.S. economy. *PR Newswire*. Retrieved from <http://www.basexblog.com/2008/12/19/information-overload-now-900-billion-what-is-your-organizations-exposure/>
- Bill & Melinda Gates Foundation, University of Phoenix, & U.S. Chamber of Commerce. (2011, September). Life in the 21st century workforce: A national perspective. Washington DC: Bill and Melinda Gates Foundation. Retrieved from <http://icw.uschamber.com/publication/life-21st-century-workforce-national-perspective>

- Calzada Prado, J., & Marzal, M. (2013). Incorporating Data Literacy into Information Literacy Programs: Core Competencies and Contents. Libri, 63(2), 123-134.
- Catts, R. (2012). Indicators of adult information literacy. Journal of Information Literacy, 6(2), 4-18.
- Cheuk, B. (2008). Delivering business value through information literacy in the workplace. Libri, 58, 137-143. Retrieved from: <http://www.librijournal.org/pdf/2008-3pp137-143.pdf>
- Clarke, R. Y., & O'Brien, A. (2012, February). The cost of too much information: Government workers lose productivity due to information overload. IDC Government Insights. Retrieved from <http://www.ironmountain.com/~media/Files/Iron%20Mountain/Knowledge%20Center/Reference%20Library/White%20Paper/Sponsored/IDC/The%20Cost%20of%20Too%20Much%20Information.pdf>
- Conley, T. M., & Gil, E. L. (2011). Information literacy for undergraduate business students: Examining value, relevancy, and implications for the new century. Journal of Business & Finance Librarianship, 16(3), 213-228. doi:10.1080/08963568.2011.581562
- Cooney, M. (2005). Business information literacy instruction. Journal of Business & Finance Librarianship, 11(1), 3-25. doi:10.1300/J109v11n01_02
- Dahlstrom, E., Walker, J. D., & Dziuban, C. (2013, September). ECAR study of undergraduate students and information technology, 2013. Louisville, CO: EDUCAUSE Center for Analysis and Research. Retrieved from <https://net.educause.edu/ir/library/pdf/ERS1302/ERS1302.pdf>
- Devasagayam, R., Johns-Masten, K., & McCollum, J. (2012). Linking information literacy, experiential learning, and student characteristics: Pedagogical possibilities in business education. Academy of Educational Leadership Journal, 16(4), 1-18. Retrieved from <http://search.proquest.com.er.lib.k-state.edu/docview/1037802808?accountid=11789>
- Hafner, J. C., & Hafner, P. M. (2003). Quantitative analysis of the rubric as an assessment tool: An empirical study of student peer-group rating. International Journal of Science Education, 25(12), 1509-1528. Retrieved from <https://login.libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=11787539&site=ehost-live>
- Head, A. (2012, October 16). Learning curve: How college graduates solve information problems once they join the workplace. Project Information Literacy. Retrieved from http://projectinfolit.org/pdfs/PIL_fall2012_workplaceStudy_FullReport.pdf
- Hylen, J. (2005). Help Students and Teachers Become Information Literate. Teacher Librarian, 32(5), 22-24.

- Jonsson, A., & Svingby, G. (2007). The use of scoring rubrics: Reliability, validity and educational consequences. Educational Research Review, 2(2), 130-144. doi:10.1016/j.edurev.2007.05.002
- Knight, L. A. (2006). Using rubrics to assess information literacy. Reference Services Review, 34(1), 43-55. Retrieved from <http://search.proquest.com.er.lib.k-state.edu/docview/200471062?accountid=11789>
- Merchant, N. (2007). Revisioning School Libraries as Learning Hubs: The Rationale, Need and Importance. Pakistan Library & Information Science Journal, 38(3), 21-24.
- National Association of Colleges and Employers (NACE). (2013). The job outlook for the college class of 2014. Retrieved from http://www.naceweb.org/uploadedFiles/Pages/MyNACE/grab_and_go/students/job-outlook-2014-student-version.pdf
- O'Connor, L. G. (2008). The diffusion of information literacy in academic business literature. Journal of Business & Finance Librarianship, 13(2), 105-125. doi:10.1300/15470640802119455
- O'Connor, L., G., Radcliff, C. J., & Gedeon, J. A. (2002). Applying systems design and item response theory to the problem of measuring information literacy skills. College & Research Libraries, 63(6), 528-543. Retrieved from <http://search.proquest.com.er.lib.k-state.edu/docview/199411687?accountid=11789>
- Obama, B. (2009). National Information Literacy Awareness Month declaration. Retrieved from http://www.whitehouse.gov/assets/documents/2009literacy_prc_rel.pdf
- Reddy, Y. M., & Andrade, H. (2010). A review of rubric use in higher education. Assessment & Evaluation in Higher Education, 35(4), 435-448. doi:10.1080/02602930902862859
- Reedy, K., Mallett, E. & Soma, N. (2013). iKnow: Information skills in the 21st century workplace. Library and Information Research, 37(114). Retrieved from <http://www.lirjournal.org.uk/lir/ojs/index.php/lir/article/viewFile/521/594>
- Rochford, L., & Borchert, P. S. (2011). Assessing higher level learning: Developing rubrics for case analysis. Journal of Education for Business, 86(5), 258-265.
- Sheesley, D. (2002). The 'net generation: characteristics of traditional-aged college students and implications for academic information services. College and Undergraduate Libraries, 9(2), 25-42.
- Varga-Atkins, T., & Ashcroft, L. (2004). Information skills of undergraduate business students--a comparison of UK and international students. Library Management, 25(1), 39-55. Retrieved from <http://search.proquest.com.er.lib.k-state.edu/docview/198800306?accountid=11789>

Journal of Business and Educational Leadership

Western Association of Schools and Colleges (WASC). (2012). Working draft: situating WASC accreditation in the 21st century: redesign for 2012 and beyond. Retrieved from <http://www.wascenior.org/files/WASC%20Accreditation%20Redesign%202012.pdf>

Copyright of Journal of Business & Educational Leadership is the property of American Society of Business & Behavioral Sciences and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.