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Bridging the Gap: Engaging Business Sophomores to Ensure Information Literacy Competency

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ABSTRACT

This project showcases a two-week series of assignments that are designed to illustrate the value of information literacy skills to undergraduate sophomore business students. We demonstrate how the project integrates with our business curricula and show how leveraging the expertise of librarians ultimately improves the quality of education for our students.

Keywords: Information literacy, library instruction, collaboration

INTRODUCTION

One of the primary concerns among business educators involves implementing strategies that ensure students learn and retain information literacy skills. Information literacy refers to the combined abilities to find information, understand how it is produced and use the information in an ethical manner (Association of College and Research Libraries [ACRL], 2015). It encompasses skills that require the researcher to understand the process involved for conducting business research, including knowing what data are needed, which databases may be used to identify data, assessing the reliability and quality of data, and the steps for converting data into meaningful and useful information. Ultimately, information literacy skills help ensure that businesses make timely and informed decisions.

Business educators recognize the importance of teaching information literacy skills to their students, although methods vary. A common approach involves providing specialized training in major-specific courses. Accounting students, for example, learn information literacy skills that accountants currently use in industry. Many business colleges require seniors to participate in a capstone project designed to emulate a real-world scenario. Senior capstone projects typically require students to demonstrate and apply their information literacy skills before graduating.

Teaching information literacy has evolved over time as trends and technologies have changed. We know, for example, that the methods employed to conduct effective business research changed dramatically after the widespread acceptance of the internet. Where once students relied on research performed in libraries utilizing books and other printed reference materials, students can now access more and better data without leaving their dormitories. Improved ease of access comes at a price, however, as today's students are tempted to work without proper guidance from course instructors and others trained in proper research methods.

When it comes to information literacy, librarians serve as the experts. Librarians are trained in these skills and stay abreast of current trends and technological innovations. Library instruction has transitioned from just teaching students how to use library resources to focusing more on evaluation of resources in order to sift through the abundance of easily accessible information. Further, most librarians actively seek opportunities to engage students and assist them in the learning process.

Current research proposes that effective teaching of information literacy skills to business students requires a collaboration between business faculty and librarians. This paper details the initial results of a project funded in part by a grant from Heterick Memorial Library at Ohio Northern University in which the course instructor for Management Information Systems and the College of Business liaison librarian collaborated on developing and providing a two-week series of assignments focused on information literacy for business students.

Heterick Memorial Library at Ohio Northern University began offering grants designed to foster information literacy initiatives within course curricula in 2017. An important requirement of the grant included the class instructor working with a librarian to create content with the aim of improving information literacy skills. Course instructors and librarians would tailor these materials to fit within their respective course subjects. The grant also emphasized the need for assessment. Librarians chose this particular project as a recipient of this grant for several

reasons, chief among them the opportunity to work extensively with sophomore students. This article provides details as to the merit of the project, the assignments developed, in-class instruction, and assessment results.

The project had three main goals, including (1) strengthening the connection between our students and our university's librarians, particularly the College of Business liaison librarian, (2) increasing student awareness of databases used to find resources and reliable methods to find quality web resources and freely available government documents, and most importantly, (3) emphasizing the importance of evaluating source material during the research process.

Timing of this training is vital to achieving these goals. We strive to develop a process by which our students are proficient in information literacy by the time they graduate. This requires us to begin the process early, while they are freshmen, and continue to build on it as they advance through their academic careers. Currently, all freshmen business students are afforded the opportunity to meet our librarians and learn basic skills as part of our transitional experience course, and all seniors are expected to demonstrate their proficiency conducting business research, but, prior to this project, a significant gap existed between their freshmen and senior years. We recognized that few opportunities existed for sophomores and juniors to reinforce the basic information literacy skills they learned as freshmen. For the current project, the course instructor proposed developing assignments to be offered in a core business course typically taken by sophomores, serving as a bridge between the introduction with the librarian provided to them as freshmen, subsequent assignments in other major-related courses, and ultimately the senior capstone experience.

For this grant opportunity, the faculty applicant proposed a two-week series of cumulative assignments, offered early in the academic term. According to the proposal, the project would require students to work in small groups on assignments that would introduce them to the business research process, databases commonly used, and the necessity of critical thinking to assess data worth. As the librarian would facilitate these class meetings, student acknowledgement and appreciation of her expertise would also increase.

PREVIOUS RESEARCH

Most information literacy instruction for business courses takes place in stand-alone sessions, or one-shots, as verified by Cooney's 2005 survey of business information literacy instruction. One-shot instruction sessions limit librarian input and inhibit true collaboration between librarians and faculty. However, this collaboration is one means of improving students' information literacy skills, as illustrated in a study by Bowers, Chew, Bowers, Ford, Smith, and Herrington (2009). Student observation of a librarian and a professor interacting as peers in class emphasized that the librarian and professor are faculty partners. Seeing this relationship encouraged students to seek out librarians outside of class, extending the learning environment beyond the classroom. Girven (2017) identified a need for academic librarians to prepare students for conducting research in a real world environment, including how to seek out assistance. One-shot instruction sessions may address the immediate need for assignment completion but often fail to prepare students for research outside of the classroom.

Students' lack of awareness of library resources is an obstacle to student use of resources. Spahr (2015) found that students were unaware of all available resources, and were overwhelmed and confused by what they knew was available. Students were also inexperienced in working with different types of business resources and had difficulty synthesizing sources. Librarians and faculty should identify specific resources for different types of information as students noted that they need more than general encouragement to use the library. Walsh and Borkowski (2018) surveyed undergraduate students in an introductory business course to identify factors that affected student database selection and use. They found that increased exposure to a database during instructional time or through an assignment was likely to have a positive effect on a student's decision to use the database outside of class. The authors also found that introducing new databases during instructional time improved student perceptions of the databases, and that students may be more receptive to new databases if the databases were similar to those students have used in the past.

Information literacy skills, particularly the ability to assess the validity of a resource, are vital to career success. Sokoloff (2012) conducted interviews with employers to identify the importance of information literacy skills in the workplace. The employers noted that Google was their primary research tool, suggesting a strong need for students to develop critical thinking and evaluation skills. Sokoloff concluded that librarians should make more of an effort to balance information literacy standards with practical training for the experiences that graduates will have in the workplace. An important element of this preparation is training students to carefully evaluate sources.

Kim and Sin (2011) conducted a study of undergraduate student source selection. While students were aware of the criteria that they should use to evaluate sources, they frequently did not apply them and opted for those that they perceived as easiest to access, generally free Web resources. As a solution, the authors recommended that information literacy programs provide more positive experiences with databases until students become more comfortable using them, suggesting that one-shot sessions are not the most effective way to change students' perceptions about library resources. Taylor and Dalal (2014) surveyed undergraduate students at their institution to determine whether or not students used criteria from the Information Literacy Competency Standards for Higher Education in evaluating Web resources, as well as whether or not students could actually find those elements in the sources. They found that students relied on Google for research and had difficulty identifying authorship of a source and the author's qualifications. Regardless, most students still felt that they were able to determine the objectivity of a source without that information. The majority (62%) of students felt that search engines usually contain accurate results. About the same number used the URL and domain as indicators of objectivity, showing that students are relying on easily identifiable surface-level details rather than careful evaluation.

RESEARCH DESIGN

Close collaboration through all steps of this project, from initial planning, to in-class instruction, to final survey, was critical to its success. This level of collaboration helped ensure that the project leveraged the experience and guidance of the librarian within the business course. This section provides details pertinent to the development, delivery, and assessment of our information literacy project.

Arguably the most important phase of this project involved initial planning and development. During these planning meetings, we discussed project goals, teaching methods, appropriate assignment structure, assessment, and many other items. This extensive preparation helped ensure the success of our project in achieving our goals.

The first step of our Information Literacy Project involved determining which source databases to use from those available through our library. We selected three databases commonly employed while conducting industry research: Business Source Complete, LexisNexis Academic (now NexisUni), and Mergent First Research. Realizing that many small businesses are unable to provide access to subscription databases, we also planned to include training on how to effectively utilize the Google search engine to identify both freely available general business data and government documents.

To further strengthen the concept of databases as repositories of information, we implemented a teaching aid, borrowing from the methods employed by Liu (2016). Liu used buckets in classes, each representing specific databases and each containing information common to those databases. This method provided a utilitarian and functional object to the students and enforced the notion of databases as repositories (buckets) of information. In addition, this method allowed for students to interact with the database content prior to interacting with a potentially unfamiliar interface. Within each bucket we placed documents that illustrated the different types of data and information found while conducting cursory research on Apple iPhone. We chose Apple iPhone as our topic as most of our students utilized Apple products and had at least a passing interest in their products.

After developing the necessary elements, we opted to utilize Google Drive as the repository for all assignments related to this project because of its accessibility across browsers and platforms, and Google apps are widely used across the ONU campus. We developed documents prior to the first class that served as assignment templates and placed these in each group folder. These templates provided instructions as well as standardized work areas for each assignment, and helped to use class time effectively. To gauge student attitudes toward information literacy as well as skills, the project implemented a brief anonymous survey both before and after its completion. The survey questions quantified the quality and extent of knowledge of the class regarding their experience with, and value of, information literacy.

We began the Information Literacy Project during the third week of the academic term, during regularly-scheduled class time. Table 1 provides a synopsis of the timeline for the Information Literacy Project. On Day 1, we divided each class into five groups according to their majors so that each group contained students of like majors (marketing, management, accounting, etc.). Each group chose a bucket and examined its contents. We emphasized to the class that each bucket contained resources found while researching Apple iPhone on Google, in government resources, or in the library database named on the outside of the bucket. In order to motivate students to thoroughly examine the contents of the buckets and facilitate the class discussion, groups listed the items within their bucket on a premade

document in their Google Drive group folders. The groups then discussed the kinds of information found in each database and potential uses for the information in a librarian guided discussion.

Day 2 further enforced the utility of the three library databases. We distributed the second assignment, which required each group to access and experiment with their respective databases and find three sources that answered questions pertaining to the cellular phone industry. During this assignment, each group identified sources within their respective database and recorded information related to their search process and the citation information. Rather than providing a demonstration of each database, the librarian circulated the classroom helping groups and pointing out library research guides that included tips for using the databases. The groups worked through the remainder of class time and presented their findings on Day 3.

On Day 3 the groups demonstrated to the class the methods they employed in finding their sources and why they selected a particular result. This initiated our ongoing discussion of the importance of evaluating items found during research. Groups recorded notes about the different databases, including search tips and types of resources included, in a shared document. After presentations concluded we divided the class into different groups so that each group contained at least one student from one of our business majors (marketing, management, accounting, etc.). This ensured that each group had at least one student with working knowledge of the utility and use of each library database.

We distributed the instructions for the third assignment, a SWOT analysis exercise (premade Google Slide) which was to be completed by Day 4. The scenario given to each group involved them pretending that they were employed by a leading smartphone company that was assessing the viability of acquiring an app made by an outside company. We instructed the groups that their SWOT analysis would help their company make the decision to acquire the app or not. For each SWOT category (strengths, weaknesses, opportunities, threats), each team was to find relevant and timely information using the library databases, government sources, or Google. We allowed the class to use the remainder of class time to brainstorm on how to best divide tasks associated with this assignment. A two week hiatus from the library after Day 3 allowed for two full weeks to work together on the research and presentation required for this assignment.

The second week of the Information Literacy Project exercises began on Day 4 with group presentations of the SWOT analysis. We continued to emphasize to the class the importance of evaluation during the research process by asking groups about some of the sources used. After group presentations, we distributed the instructions for their final assignment. The instructions required they conduct research on their own time and be prepared to present in class on Day 6. As with the SWOT analysis, we provided a pre-made Google Slide template for them to use. We provided the research topic, which was to perform an assessment of Samsung telecommunications. Each group was required to find at least one relevant and current source from each of the resources covered in the buckets from Day 1. Groups decided amongst themselves how to divide responsibilities.

On Day 5 we reserved class time for discussion of the importance of evaluation during research, finding government resources, and instruction on using Google effectively. The librarian demonstrated how to use Google shortcuts and advanced searching to conduct more effective searches and to find government resources. The class discussed how government resources could be used and the librarian emphasized that government resources are freely available to everyone, so students are able to access them after graduation. To help students evaluate sources, the librarian explained how the Five Ws (Schrock, 2011) could be used to help look for key information. The Five Ws are the same basic questions used in a variety of situations, modified here to be a formula for evaluating sources:

- Who wrote the source?
- What is its purpose?
- When was it written?
- Where is it coming from?
- Why use it in your paper?

A research guide for the course includes a more detailed list of questions to help with evaluation that were discussed in class. To reinforce the need for evaluation, each group was given a source used in the SWOT analysis by students in the other section of the class to evaluate using the Five Ws criteria.

The final day, Day 6, of the Information Literacy Project exercises began with groups presenting their fourth assignment. In addition to presenting the research, each group was also required to give an assessment of one source

using the Five Ws. We emphasized the importance of the skills learned during the two weeks of training, and especially the importance of consulting with the liaison librarian.

The students retook the information literacy survey during the following class. The questions remained the same. As before, student answers were gathered anonymously and aggregated for each question.

RESULTS

This project had three main goals for our students: (1) strengthen the connection between our library's librarians, particularly the College of Business liaison librarian, and our students, (2) increase student awareness of resources used to find sources, and most importantly, (3) emphasize the importance of evaluating sources during the research process. With regard to the first goal of this project, it is clear that our assignments improved student familiarity with and appreciation of our university's librarians and their expertise. Figure 1 shows that student perception of librarians as experts rose from 2.88 to 3.05 (out of 4.00). We also observed that interaction and question quality improved during the course of the project.

The second goal of the project pertained to increasing student awareness of databases used to find resources, as well as how to use search engines to find government resources and quality Web sources. Survey data (Figure 1) reveals that student recognition of databases as repositories of credible information rose from 3.73 to 3.90 (out of 4.00). Further, the percentage of students who identified a business-specific database such as Business Source Complete as the appropriate library tool for finding business information increased from 72.5% to 92.7% (Figure 2).

The final goal of our project emphasized the importance of evaluating source material during the research project. Our surveys (Figure 3) show that the percent of students who stated that they were very confident using databases rose from 20.6% to 60.8% while those who initially indicated before the exercises that they were "not at all" confident stated after the project that they were at least "somewhat" confident. This indicates that the students are more confident in utilizing resources that will help them find credible information. More importantly, by the final assignment, students demonstrated their familiarity with identifying timely and pertinent sources.

DISCUSSION

Given the success of the project, the instructors decided to continue providing information literacy training as part of the general curriculum within the course. We currently offer the training early in each term, divided among six class meetings which account for two of the fifteen weeks in the semester. Pre- and post-surveys continue to gauge the impact of the training, and provide the primary means for assessment.

Many aspects of the project worked very well during the initial implementation. Careful preparation beforehand proved especially beneficial. As with cooking, *mise en place* matters as it allows instructors to manage resources effectively. For this project, we met many times well in advance of its implementation date and discussed goals, teaching strategies, existing resources, scheduling issues, assignment development, and assessment. Developing and utilizing templates for assignments proved especially beneficial as it effectively eliminated the potential for confusion among students.

Students also appreciated reminders that they would continue to utilize information literacy skills in future courses, that successful senior capstone research depended on learning these skills, and that employers actively seek graduates who understand the value of effective research methods. At certain points during this project, we showed the class sections within the capstone syllabus to emphasize the importance of information literacy. As sophomores, our students cringed at seeing the senior capstone syllabus, but when asked indicated that they appreciated this gesture as it helped prepare them for what was to come.

Some of our methods required revisions. For example, we decided to swap assignment 3 (SWOT analysis) and assignment 4 (research project) as we discovered that students tended to put more emphasis on evaluating sources while performing the SWOT analysis than they did for the final research project. We felt that the final project should emphasize evaluation, so using the SWOT analysis as the final assignment seemed appropriate.

CONCLUSIONS

The main goals of the Information Literacy Assessment project were to increase awareness of the librarian as a resource while conducting research, of databases used while conducting industry research, learn methods to find

freely available, credible web resources and government documents, and also increase the practice of evaluating sources identified while researching. The results of the project strongly suggest success in these areas. The survey scores related to these goals increased dramatically. More importantly, the performance exhibited on the various activities associated with the project demonstrated that our students were eager to learn the proper methods for conducting industry research, the relevant databases at their disposal, and the methods in which professionals evaluate the quality of identified sources.

Assignment development assumed that students would capitalize on existing experience pertaining to information literacy, and also that each assignment would build on that knowledge. Assignment 1, for example, introduced our business students to resources commonly used in research, while subsequent assignments built on this knowledge and ultimately required students to identify timely and pertinent sources. By the final assignment, most students demonstrated their ability to accomplish this goal.

The training proved beneficial to our business sophomores. To date, two students who participated in the Information Literacy Project have engaged in the capstone experience process. Both have expressed their appreciation for the training we provided in the course; they utilized these skills in other classes, but did not fully appreciate their value until they used them as part of the capstone project. We expect additional positive feedback as more students advance through their upper-level courses. We are currently devising methods for assessing the application of these skills in other classes, including the capstone experience.

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Table 1. Project Timeline.

Timing	Activities
Pre-training Development	Buckets, assignment templates, group lists
	Pre-survey administered
Project Week 1	
Day 1	Class divided into groups (majors)
	A1 (buckets, in-class)
	Database research discussed
Day 2	Review
	Database use guides online
	A2 (Database research) instructions distributed
Day 3	A2 presentations
	Class divided into groups (capstone model)
	A3 (SWOT) instructions distributed
Training Week 2	
Day 4	A3 presentations
	A4 (research project) instructions distributed
Day 5	"Five Ws" and library literacy discussion
Day 6	A4 presentation
	Post-survey administered

Figure 1. Results of Question 8.

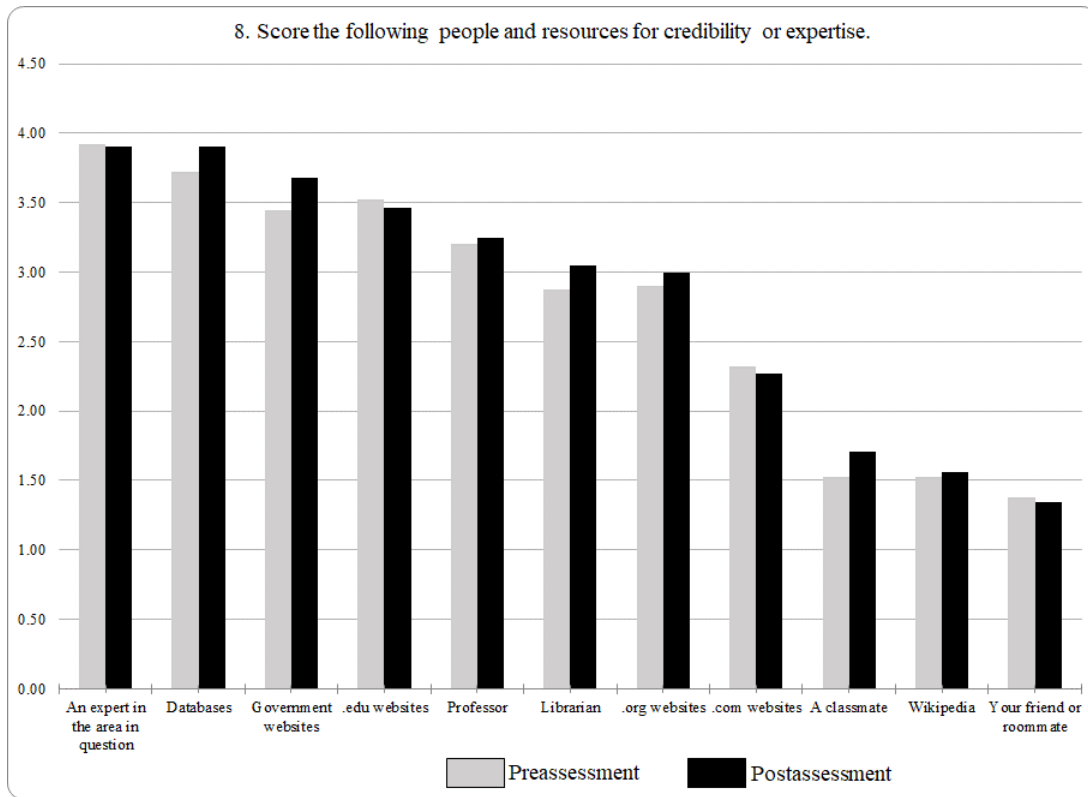


Figure 2. Results of Question 5.

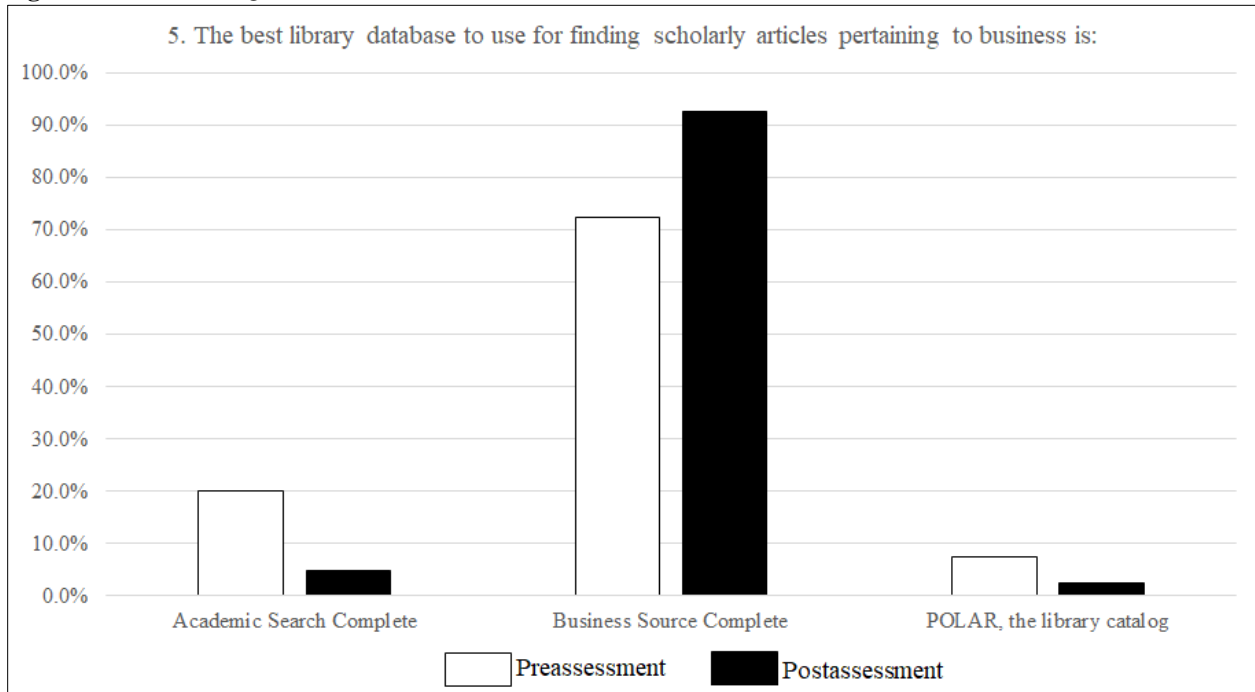


Figure 3. Results of Question 6.

