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Assessing First-year Information Literacy at WPI

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ASSESSING FIRST-YEAR INFORMATION LITERACY AT WPI

An Interactive Qualifying Project Report
submitted to the Faculty of
WORCESTER POLYTECHNIC INSTITUTE
in partial fulfillment of the requirements
for the
Degree of Bachelor of Science

By

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May 3, 2011

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ABSTRACT

This project analyzes the results of an assessment, which the Gordon Library at Worcester Polytechnic Institute deployed, to evaluate baseline information literacy skills among first-year students. The results showed that only 40% of entering students scored above 70% on the test, with the best performance on questions related to the ethical use of information and the worst performance on questions related to search strategies. A new version of the assessment was developed and tested and will be used in the future.

EXECUTIVE SUMMARY

Early in A term of 2010, 165 first-year students completed an on-line test designed to assess the students' level of information literacy. The test included five demographic questions and 11 questions mapped to the Association of College and Research Libraries (ACRL) information literacy standards.

The average score on the test was 6.8 (out of 11) with 40% of first-year students scoring least 70% on the test. This means that 60% of first-year students "failed" the information literacy test. Of the 40% who passed, only two students scored a perfect 11 on the test.

Clustering the questions showed that WPI students did very well on questions related to the ethical use of information. Students were able to distinguish good information sources from bad sources, but they did poorly on questions related to search strategies. These findings led to one recommendation for the library: focus on developing students' in search strategies skills. An important point in making this recommendation was that the library already does devote significant resources to this need, but students are not necessarily aware or do not take advantage of the resources.

The demographic information was used to look for patterns in student performance. For example, the data show that there is a statistically significant relationship between a student's performance on the test and their confidence in their own research ability. The data also showed that the relationship between the student's gender and his/her score on the information literacy test was not as strong.

One of the demographic questions tried to measure the student's previous (in high school) research experience, but there were so many different combinations of experiences and so few students in many of the possible combinations that data analysis was difficult. One point

of interest which was obtained from this data was that of the 69 students who indicated that they had no prior research education, more than half of these students had a high score on the information literacy test.

The analysis was presented to the staff of the Gordon Library in December, 2010. During a discussion of the results, it was noted that the initial test did not have questions to evaluate students' ability to differentiate between sources and their ability to use controlled vocabulary. To fix this gap in the information literacy skills being assessed, two questions were developed to measure these skills. Three versions of these two news questions were pilot tested with WPI students in January 2011 Also, it was decided that two questions from the initial test should to be removed. In one case, the wording of the question was ambiguous and in the other case the question was redundant. The assessment, including the new questions, was revised for future use by the librarians.

1. FRAMING THE PROBLEM

1.1 INTRODUCTION

One hundred years ago, to be "literate" meant that you could read and write. School focused on this definition of literacy, with the addition of basic arithmetic. The only material that anyone needed to read was in the local newspaper and books (which for most in Europe or the United States meant the Bible). Information meant news and news was available in newspapers.

The world has changed a great deal in 100 years and but one of the most striking changes is in the availability of information. Books have become widely (easily and cheaply) available. News today is available through thousands of channels in addition to the traditional newspaper. It is probably more important today to be able to read and write, to be literate in the traditional sense, than it has ever been before. The volume of and easy access to information has made it much more important that a person be able to read and assess (quickly) the value and quality of information available. The Association of Colleges and Research Libraries (ACRL) summarized today's challenges with a new definition of literacy:

> *Information literacy is 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."[1]*

Today in society, more information is generated and distributed than ever before in history. With advanced technology and electronic tools, information can be delivered immediately almost anytime anywhere in the world. Industries exist to collect, handle and distribute information for entertainment, news, and education.

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[1] American Library Association (2000). Information Literacy Competency Standards for Higher Education. http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm

A student who graduates from high school is certainly literate in the sense of having the ability to read and write. But many high school graduates struggle with academic work in their first semester at college. College freshmen need to be able to read more difficult texts, write papers that require integration of information and ideas from many different sources, and learn on their own outside of the traditional classroom. Many students fail because they are unprepared to handle this amount and level of academic work. Several studies have described the skills that new students need in order to be successful. Many of these skills are captured in the ACRL definition of information literacy.

The study *Academic Literacy: A Statement of Competencies Expected of Students Entering California's Public Colleges and Universities*[2] summarized the result of a survey of college faculty who regularly teach freshman. The survey reported what professors expected the student able to do as prerequisites to their classes and how skilled they believed their students to be. According to the report, the college faculty expected students to have a variety of skills, and some that are associated with information literacy are:

- Have basic information-finding and internet research skills.
- Have evaluation skills on resources for clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness.
- Be able to analyze data and present its information as well as personally held opinions.
- Be able to gather evidence to support an argument.

The report shows most educators agreed that the majority of first-year students are unable to meet college expectations after finishing high school. They believed students were poorly

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[2] Intersegmental Committee of the Academic Senates of the California Community Colleges, the California State University, and the University of California. (2002) "Academic Literacy: A Statement of Competencies Expected of Students Entering California's Public Colleges and Universities."
http://www.universityofcalifornia.edu/senate/reports/acadlit.pdf

prepared when they enter higher education. Professors estimated that about two-thirds of the freshmen cannot analyze and synthesize information from multiple sources, and only a minority knows how to evaluate online resources. In addition, they believed that, "students are more diligent than in the past, but less able to tackle difficult questions, and much less curious and less willing to deeply engage in difficult thinking tasks."

There are additional challenges that come with the growth of and easy access to information. New ethical challenges are arising along with the increase of information availability, and the issue is growing as the nature of information changes. Richard O. Mason[3] has said that "[i]nformation is the means through which the mind expands and increases its capacity to achieve its goals, often as the result of an input from another mind." Information accumulates to form valuable investments in which human have invested time and resources. However, the investment is vulnerable in many ways. For example, an author's work can be copied without attribution (or payment). There are also ethical questions associated with the availability of information to all people. Society needs ethical guidelines and responsible educationist to protect and manage information. There are many issues need to be address, but Mason focused on just four:

- *Privacy*: What condition and with what safeguard in which information can reveals to others? What information can people keep to themselves and not to be forced to reveal to others?
- *Accuracy*: Who hold responsible for the authenticity, fidelity, and accuracy of information? Who would be held accountable for errors in information?
- *Property*: Who owns the information and the channels through which information is exchanged? What are the just and fair costs for its exchange?
- *Accessibility*: What condition and with what safeguard does a person or an organization have a right or a privilege to obtain.

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[3] Mason, Richard O. "Four Ethical Issues of the Information Age." *MIS Quarterly* 10.1 (1986): 5-12.

There are many guidelines and laws established to prevent people from abusing the use of information. ACRL created a set of standards which include helping students to use information ethically. Furthermore, many studies have been conducted to examine information literacy within college students, such as the study consisting of 8,353 survey respondents from 25 colleges in U.S, in which it examined strategies students have used to conduct research and the difficulties they have encountered while seeking information. [4] The results included some interesting but unsurprising findings. The students took little at face value and indicated they frequently evaluated information found on the Web and to a lesser extent, the campus library. They often considered whether the web and library information was up to date. About 61% of the respondents seek help from their friends and/or family to evaluate information for personal use. Half the students asked their professor to evaluate the source quality for course work, but only 11% asked librarian assistance. Most students used similar procedure to complete one research assignment to the next. More than 80% of the students reported the most trouble they have with course related research is getting started, such as defining a topic and narrowing research information. They are good at finding information for personal use, but have difficulty at sorting through results to solve information problems in their daily lives. Their priority goal while working on a research assignment was passing the course, completing the assignment, and earning a good grade.

During the 2009-2010 academic years, an information literacy assessment was designed by an IQP group at WPI: Madison Dickson, Ben LaVerriere, and Michael Oliver. [5] The purpose

[4]Head, Allison J. & Michael Eisenberg. (2010 November) How College Students Evaluate and Use Information in the Digital Age. Project Information Literacy Progress Report. http://projectinfolit.org/pdfs/PIL_Fall2010_Survey_FullReport1.pdf
[5] Dickson, M., LaVerriere, B., & Oliver, M. (2010). Assessing first-year information literacy skills. Worcester Polytechnic Institute Undergraduate Interactive Qualifying Project Report. http://www.wpi.edu/Pubs/E-project/Available/E-project-050510-180910/unrestricted/LibIQP-SubmittedVersion.pdf

of their work was to develop an assessment that could be given to entering first-year students to measure their baseline information literacy skills. The test questions were mapped to the standards from the Association of College and Research Libraries (ACRL)[6]. The assessment was offered to more than 900 first-year students during the first two weeks of A term in 2010. One hundred sixty-five students completed the survey.

This year's project team set out to analyze the data provided by the information literacy assessment. In particular, the team clustered questions into categories such as search strategies and ethical questions related to information uses. The goal is to identify areas where the first-year students have strong information literacy skills as well as gaps in their information literacy background. The results are being used to make recommendations to the Gordon Library regarding to potential programs that can improve information literacy at WPI.

The second goal of this project is to evaluate the assessment itself. More specifically, we analyzed the questions and identified those which needed revision. The team piloted several new questions to determine their effectiveness and the chosen ones will be added to the post-test.

1.2   PROJECT GOALS

The purpose of the assessment was to assist the Gordon Library at Worcester Polytechnic Institute in evaluating baseline information literacy skills of entering students as defined by the standards from the ACRL. These are skills which students are expected to acquire before or during their first-year at WPI. The assessment was administered using a web-based survey at the beginning of the fall semester of 2010.

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[6] American Library Association (2000). Information Literacy Competency Standards for Higher Education.
http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm

This year's project team set out to continue where previous team has left off. Since the assessment had already been deployed, this year's team began by analyzing the results. First, we studied the characteristics of the number of students who completed the survey. The next step was to analyze student performance on the test. After the results were compiled, we moved on to evaluate the test itself. More specifically, we analyzed the questions and identified areas which possibly needed revision. A question which we considered bad implied that the question was not an accurate evaluation of its intended information literacy skills, or the question was too simple, too difficult, or ambiguous. Since questions are replaced or rewritten, a pilot test was administered to determine the effectiveness of the new questions. After the pilot, these questions will be added with the others in a post-test.

2.   BACKGROUND INFORMATION

2.1   HISTORY OF INFORMATION LITERACY

As noted in the introduction, a person who can read and write is *literate*. The definition is simple and the test for literacy is also fairly simple. Information Literacy (IL) is a more complex, multi-dimensional set of abilities. According to the report released in 1989 by the Association of College and Research Librarians [7] (ACRL), an information literate person must be able to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." Notice that the ACRL had developed the standards well before the information explosion of the internet happened in the late 1990's. Information can now be acquired through increasingly abundant resources and is available in a wide variety of formats. An individual is faced a great variety of information, and not all of equal validity or reliability.

The ACRL went further and defined five specific standards that colleges and universities could use to define the different dimensions of information literacy:

STANDARD 1: The information literate student determines the nature and extent of the information needed.

STANDARD 2: The information literate student accesses needed information effectively and efficiently.

STANDARD 3: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

STANDARD 4: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

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[7] ACRL | Presidential Committee on Information Literacy." American Library Association. Web. 17 Mar. 2011. <http://www.ala.org/ala/mgrps/divs/acrl/publications/whitepapers/presidential.cfm>.

STANDARD 5: The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally. This standard recognizes that students must be taught the social, economic and political issues surrounding information, specifically the ethical and legal uses of information and its technology.

To paraphrase, the standards say that an information literate person knows:

1. What information they need;
2. How to find it;
3. Bad information when they see it;
4. How to use information effectively;
5. How to use information ethically.

To further clarify the definition of information literacy, the ACRL attaches a list of *performance indicators* to each of the five standards. For example, Standard 2 has five associated performance indicators:

1. The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.
2. The information literate student constructs and implements effectively-designed search strategies.
3. The information literate student retrieves information online or in person using a variety of methods.
4. The information literate student refines the search strategy if necessary.
5. The information literate student extracts, records, and manages the information and its sources.

To make the standards, and information literacy, measurable or assessable, the ACRL goes further and defines *outcomes* which identify specific tasks that an information literate person should be able to complete. For Standard 2 (knows how to access information), performance indicator 2.2 (all about searching for information), there are six associated outcomes:

a) Develops a research plan appropriate to the investigative method;
b) Identifies keywords, synonyms and related terms for the information needed;
c) Selects controlled vocabulary specific to the discipline or information retrieval source;

d) Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books);

e) Implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters;

f) Implements the search using investigative protocols appropriate to the discipline.

Each outcome is designed to answer the question "How do we know that the student has learned?" and is used as a guide in assessing both a student's learning and a student's learning progress toward information literacy.

The standards and performance indicators and outcomes are also used by librarians in developing programs to improve information literacy among students. The specific skills defined in the outcomes provide guidance in developing educational programs and activities to help students learn.

2.2   ASSESSING INFORMATION LITERACY AT WPI

The Gordon Library at WPI has implemented some information literacy assessments, including the pre and post-tests, which were administered to classes that used library research services for specific courses. For example, about half of WPI students complete the course ID2050 (Social Science Research for the IQP) before going to an off-campus project center. Students in ID2050 work with librarians as they begin the research on their project proposal and the early chapters of their project report, including the background and literature review in many cases.

Librarians have found that feedback provided by students in ID2050 indicates that the information literacy skills they learn are useful and in many cases that they wish that they could have used the skills during their earlier college years. Over 90% of students who were enrolled in

ID2050 agreed that the library consultations on academic research helped improve the student's skill to research for their project.

There is no program that can currently be used to determine where the students retain their skills through graduation and beyond. Moreover, WPI has lacked of a way to assess information literacy skills of the entire population at any stage of their WPI career. There is a need for WPI to develop an assessment which enable WPI to include all students, and that is feasible to the library's resources. The assessment should also provide a way to evaluate the efficiency of the information literacy instructional programs, because it would allow the Library to understand their success in meeting standards of information literacy education. WPI and Gordon Library can benefit from the IQP information literacy assessment at its current state of information literacy education.

Most information literacy assessments are developed with certain criteria such as it should assess as the institutional level, not the instructor level, allows for long term data gathering with pre-testing-and post-testing. It should be quick and easy to administer and is geared toward national standards for information literacy. It is also important that it can assess both cognitive and affective dimensions. These criteria are described in the "Assessing Information Literacy skills Developing a Standardized Instrument for Institutional and Longitudinal Measurement" by Radcliff, Gedeon and O' Connor.[8]

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[8] O'Connor, L. G., Radcliff, C. J., &Gedeon, J. J. (2001). Assessing Information Literacy Skills: Developing a Standardized Instrument for Institutional and Longitudinal Measurement. In Crossing the Divide: Proceedings of the ACRL 10th National Conference.

2.3   PREVIOUS IQP WORK ON INFORMATION LITERACY

The previous IQP team[9] developed a method that would help Worcester Polytechnic Institute's Gordon Library assess students' skills or improve the effectiveness of its information literacy education programs. After researching the literature on information literacy education and assessment, their team developed a list of potential approaches for either program or student assessment. The team consulted with Gordon Library staff and project advisors and decided to develop a baseline skills test that would assess the information literacy skills of first-year students.

The previous project started with the standards defined by the Association of College and Research Libraries. Each question was mapped to one or more of the outcomes of ACRL standards. Next, they piloted the test to a representative sample of students. Then they studied the results of the pilot to explore the potential changes to the test. The test was then revised with information gathered to improve its effectiveness. The team had only enough time to complete two pilots. They noted that the students who participated in the pilot could evaluate and use information, but unable to acquire information in proper manner. Even after two pilots, the test still had some known issues that needed to be addressed before the full deployment was taken. The assessment created by the previous team contains ten final questions, but it still needed some revisions from the library staff. The test has produced data that can be used to assist the library at improving educational programs.

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[9] Dickson, M., LaVerriere, B., & Oliver, M. (2010). Assessing first-year information literacy skills. Worcester Polytechnic Institute Undergraduate Interactive Qualifying Project Report. http://www.wpi.edu/Pubs/E-project/Available/E-project-050510-180910/unrestricted/LibIQP-SubmittedVersion.pdf

3. STRUCTURE OF THE INFORMATION LITERACY ASSESSMENT

The assessment included eleven questions in multiple choice formats. Students receive one point for every correct answer to each question. In order to categorize the performance level, students are grouped into different tiers depending on their score.

The assessment also included four academic background questions. These questions collect information including the student's intended major, prior college experience, prior library research education experiences, and the student's perceived confidence in their ability to perform academic research. The answers to these questions helped us determine relationships between the students' academic backgrounds and their information literacy skills.

3.1 BACKGROUND AND DEMOGRAPHICAL QUESTIONS

The test consisted of two main sections. The first section asked the students several questions regarding their background. These questions were used for determining whether or not certain factors could have contributed to their level of information literacy skills. The background questions consisted of the student's gender, major, prior college experience, library experience, and perceived confidence in their information literacy skills. These questions are listed in Appendix A.

Gender

The first of the background questions asked the students to declare a gender. This question was a "choose-one" multiple choice response. The options that the students could choose were female, male, and other. No student selected the other choice.

Major

The second question asked the students to indicate their intended major. This question was difficult to analyze for several reasons. Firstly, this question had the most selectable answers, with an option to submit a major that is not on the list. This question also allowed for an individual to select multiple answers, which complicated the resulting answers. The population of first-year students who participated in the test were widely spread among the multitude of answers; many of which only one individual was in a given major. Due to the wide array of different responses, this question proved to be a great challenge for drawing statistical conclusions.

Experience Prior to College

The next question was designed to determine if the student is truly a "freshman" or has had some college experience before coming to WPI. The answer options for this question are *no prior college experience*, *prior college experience* (excluding AP courses), and *other,* where the student could submit more information. Most of the students selected either prior or no prior college experience, with only three students selecting to give custom (other) answers. This question had a flaw. There was a "no experience" option, which was unnecessary. Since this was a "check all that apply" question, students could choose "some prior experience" and "no prior experience" at the same time. Future revisions of this question should not include the "no experience" question. The "other" option proved quite difficult to group.

Library Research Experience Prior to College

The next question asks about the type(s) of library research education experience the student had before arrival at WPI. The students were asked to "select all that apply" and the question allowed selections from the following list: in-class presentation or research workshop

by a librarian, a one-on-one or group consultation with a librarian, an online library tutorial, no prior research education, and other. Unlike the multiple-selection in the major question, whether or not a student selected or did not select each of these answers has merit in its analysis. Also, due to the nature of the multiple-selection of the answers, the results of this question are quite complex.

Perceived Confidence

The final background question asks the student his or her perceived confidence in performing academic research. This question's answer choices range from very confident to not confidence at all. It is important to note that this question asked the first-year students how confident they were in their research abilities prior to taking the information literacy portion of the test. Therefore, the answers to this question are how confident the students believe themselves to be prior to knowing exactly what is on the test.

3.2 THE QUESTIONS

Question 1: Examine this library catalog record. What specific information do you need to find the book in the library?

- ▫ Title: Energy, environment, and climate / Richard Wolfson.
- ▫ Author: Wolfson, Richard.
- ▫ Publisher: New York, N.Y.: W.W. Norton & company, c2008.
- ▫ ISBN: 9780393927634 (pbl.) 0393927634 (pbk.)
- ▫ Description: 1st ed. xviii, 532p.: ill.; 24cm.
- ▫ Format: Book
- ▫ Location: GENERAL COLLECTION
- ▫ Call Number: QC981.8 C5 W645 2008
- ▫ Status: Not Charged
- ▫ Persistent Link: http://gordonlibrary.wpi.edu/vwebv/holdingsInfo?bibId=288907

a) ISBN: 9780393927634 (pbl.) 0393927634 (pbk.)
b) Author: Wolfson, Richard

c) http://gordonlibrary.wpi.edu/vwebv/holdingsInfo?bibId=288907
d) Call Number: QC981.8 C5 W645 2008
e) Don't know

Question 2: Research scenario: you need to research the beliefs of a religion called Neo-Paganism. Which of the following sources would be most credible for a detailed research project?

a) "Neo-Paganism", from the Wikipedia article at www.wikipedia.org/wiki/Neo-Paganism
b) "The Pagan Diaries", an editorial from the local newspaper
c) "Neo-Paganism: from Humble Beginnings", an article from the journal Philosophy and Religion Quarterly
d) "The Truth about Paganism", from the website www.thesecrettruth.net/revealed.html
e) Don't know

Question 3: If you are researching the 1918 influenza outbreak and need to find primary source materials, which of the following set of keywords would produce the most relevant "hits"?

a) Influenza, 1918
b) Influenza, 1918 epidemic
c) Influenza, 1918, diary
d) Influenza flu statistics
e) Don't know

Question 4: Read the following text and answer the question at the end.

"The environmental performance of firms around the world is increasingly driven by a set of international forces, from international business standards such as ISO 14000 to the product requirement of customers in distant markets."
Source: Angel, David P., Greening of Industry, Encyclopedia of Global change, Oxford University Press, 2002, vol. 1.

Which of the following is the best way to incorporate the author's ideas into a research paper?

a) David Angel has suggested that international factors are affecting how firms perform environmentally, "from international business standards such as ISO 14000 to the product requirements of customers in distant markets" (2002).
b) I believe that standards are like "ISO 14000" and customers in foreign countries make a difference to how environmentally affective companies are.
c) According to Encyclopedia of Global Change, standards like ISO 14000 have an impact on how firms perform in terms of environmental concerns.
d) It has been said that environmental performance of firms around the world is increasingly driven by a set of international forces, from international business standards such as ISO 14000 to the product requirements of customers in distant markets.
e) Don't know

Question 5: You are using a research database that uses and asterisk (*) as its truncation symbol. How should you truncate the work "environmental" to get the most relevant results which include variations on the core root of the word?

a) Env*
b) Environmentalis*
c) Enviro*
d) Environment*
e) Don't know

Question 6: For a 20th-century history class, you need to find an interview of someone's firsthand account of a riot that happened 20 years ago in Chicago. Which of the following would provide the most appropriate results?

a) Newspaper database
b) A scientific journal
c) Google search
d) Magazine database
e) Don't know

Question 7: For your biology class, you must research a species of plant. A place you'd expect to find relevant and reliable information would be:

a) A peer-reviewed journal
b) A Google search
c) A magazine
d) A newspaper database
e) Don't know

Question 8: "Gadgets" are widely used but controversial devices. You are researching their environmental impact for a paper. Which of the following seems to be the most likely source for objective information?

a) "Pollution and Gadgets" by the National Gadget Makers Association
b) "What the government Won't Tell You about Gadgets" from the news blogging site Web Voice
c) "Building a Better Gadget" an editorial in the New York Times
d) Gadgets and Regional Pollution" from the Journal of Gadgets
e) Don't know

Question 9: You've been assigned a research paper on the effects of acid rain on the fishing industry in Canada. To retrieve results with EITHER of the phrases "acid rain" or "acid precipitation", which would work best?

a) Fisheries AND Canada AND (acid rain OR acid precipitation)
b) Fisheries AND acid rain OR acid precipitation AND Canada
c) Fisheries OR Canada OR (acid rain OR acid precipitation)
d) Fisheries AND (acid rain AND acid precipitation) AND Canada
e) Don't know

Question 10: For a bibliography, which of the following is not a valid citation for this journal

article?

> What Do Robots Dream Of?
> Christoph Adami
> Science, New Series, Vol. 314, No. 5802 (2006), pp. 1093-4
> Published by: American Association for the Advancement of Science
> Stable URL: http://www.jstor.org/stable/20032822

a) Adami, Christoph. (2006). "What Do Robots Dream Of?" Science, 314(5802), 1093-4.
   http://www.jstor.org/stable/20032822
b) Adami, C. (2006). What Do Robots Dream Of? Science, 314(5802): pp. 1093-4.
c) Adami, C. (2006). http://www.jstor.org/stable/20032822
d) Adami, C. (2006). What Do Robots Dream Of? Science, 314(5802), 1093-4.
   http://www.jstor.org/stable/20032822
e) Don't know

Question 11: For a video project that you are planning to post on YouTube you want to use an

image from the webmd.com site. Which of the following is correct?

a) Since the image didn't have a copyright symbol, it is okay to use in my video.
b) The image may be copyrighted, so I should check the terms of use or copyright policy on
   webmd.com.
c) Fair use applies, so I can use it in my video.
d) Anything on the web is free to use.
e) I don't know

3.3   QUESTION MAPPING AND CLUSTERING

The previous IQP team had selected a group of standards from the ACRL as a guideline

to design the test questions. The standards were chosen based on the expectation of the IL skills

students may learn before and during their first-year at WPI, and standards must be assessable by

multiple choice questions. After considering the factors mentioned above along with the

suggestion from Gordon Library staff, the following standards were chosen:

Table 1: Information Literacy Outcomes Chosen by Library

1.2.e	Differentiate between primary and secondary sources, recognizing how their use and importance vary each discipline.
2.1.c	Investigates the scope, content, and organization of information retrieval systems.
2.2.b	Identifies keywords, synonyms, and related terms for the information needed.
2.2.c	Selects controlled vocabulary specific to the discipline or information retrieval source.
2.2.d	Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncating, and proximity for search engines; internal organizers such as indices for books).
2.2.e	Implements the search strategy in various information retrieval systems using different user interfaces and search engines, with different command languages, protocols, and search parameters.
2.2.f	Implements the search using investigative protocols appropriate to the discipline.
2.3.b	Uses various classification schemes and other systems (e.g., call number systems and indices) to locate information resources within the library or to identify specific sites for physical exploration.
2.5.c	Differentiates between the types of sources cited and understands the elements and correct syntax of a citation for a wide range of resources.
3.1.a	Reads the text and selects main ideas.
3.2.a	Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timelines, and point of view or bias.
5.1.a	Identifies and discusses issues related to privacy and security in both the print and electronic environments.
5.1.b	Identifies and discusses issues related to free vs. fee-based access to information.
5.1.d	Demonstrates an understanding of intellectual property, copyright, and fair use of copyrighted material.

The previous IQP team also developed a set of IL task related *scenarios* that they felt the first-year students should able to accomplish. These scenarios include:

- Obtain resources by a variety of methods
- Construct search strategies
- Evaluate source type, relevance, and validity
- Gather bibliographic data and cite resources correctly
- Read and evaluate sources critically
- Understand and avoid plagiarism

The following table shows last year IQP team's mapping of the questions to the chosen standards and scenarios.

Scenarios	1.2.e	2.1.c	2.2.*	2.3.b	2.5.c	3.1.a	3.2.a	5.1.d
Obtain resources by a variety of methods	6	7	a	b				
Construct search strategies			c	3, 5, 9				
Evaluate source type, relevance, and validity	6, 8						1, 6, 7, 8	
Gather bibliographic data and cite resources correctly		d			4, 10			
Read and evaluate sources critically	e					f		
Understand and avoid plagiarism								10

Each column of the table shows an ACRL standard and each row corresponds to one scenarios. A number in a cell is a question that corresponds to specific scenario which associated with an assessable standard. The letter in a cell is a potential new item that could be added, and the last year report discussed these possible new items. The team considered all the standards in the 2.2.* range were similar; therefore all the 2.2.* standards were included as a single column. Although standard 5.1.a and 5.1.b were initially under consideration, these standards were discarded because they do not fall within the scope of skills the team wished to evaluate.

The test that was developed by previous IQP team got revised before it was given to students at the beginning of A-term 2010. A few changes were made to the test and a copyright question added. The following revised table shows the mapping of the standards and scenarios to the questions.

Scenarios	1.2.e	2.1.c	2.2.*	2.3.b	2.5.c	3.1.a	3.2.a	5.1.d
Obtain resources by a variety of methods	6	7		1				
Construct search strategies			3, 5, 9					
Evaluate source type, relevance, and validity	6, 8						2, 6, 7, 8	
Gather bibliographic data and cite resources correctly					4, 10			
Understand and avoid copyright infringement								11
Understand and avoid plagiarism								10

To study to results of the tests, we decided to cluster the questions into three categories: Search Strategies, Ethical Use of Information, and Evaluating Sources. Questions 1, 3, 5, and 9

are in the search strategies category. The questions of ethical use of information category included 4, 10 and 11 and the questions of evaluating sources category included 2, 6, 7, and 8.

Search Strategies

The information literate students should able to implement and refine search strategy effectively. Question 1 asked the students to locate information resources within the library. Question 3 assesses students on their ability to evaluate the effectiveness of a set of keyword searches. Question 5 assesses students on truncation search and question 9 assesses students on Boolean search operator.

Ethical Use of Information

The information literate students should access and use information ethically and legally. Question 4 asks the students to identify a correct in-text citation. Question 10 assesses students' ability to identify the purpose and content of a bibliographic citation. Question 11 assesses students' understanding on the use of a copyrighted image.

Evaluating Sources

Information literate students should able to evaluated information critically for its reliability, validity, and accuracy. Question 2 asked the students about the validity of web based resources. Question 6 assesses students on their ability to identify the most applicable source type. Question 7 assesses the students' understanding of different general information resources and question 8 assesses the students' ability to identify an unbiased sources.

4.   RESULTS AND DATA INTERPRETATIONS

      The invitation to participate was sent out via email to all of the incoming freshmen at the start of A term in 2010. Participation in this survey was strictly voluntary. After a few weeks had passed, the survey was closed and the analysis began. The response rate was about 18%, with 165 out of just over 900 students completing the survey. The population of the test participants included 101 males (61%) and 64 females (39%), which was close to the freshmen distribution which is 66% male and 34% female. The test consisted of two main sections. The first section was a survey which gathered background information about the student. These questions were used for determining whether or not certain factors could have contributed to their level of information literacy skills. The second section was the assessment itself.

4.1   PERFORMANCE ANALYSIS: FIRST-YEAR IL ABILITIES

      The average score on the 11-question test was 6.8, with 65 out of 165 students getting 8 or more questions correct. Only two students scored a perfect 11 on the test. At the other extreme, only one student received a score of zero, but this student responded with choice (e), "I don't know," for every question. Sixty percent of students received a score of seven or greater. Forty percent of students scored below a seven. If 70% were defined as a passing score, then only about 40% of the first-year students (65) passed the information literacy test.
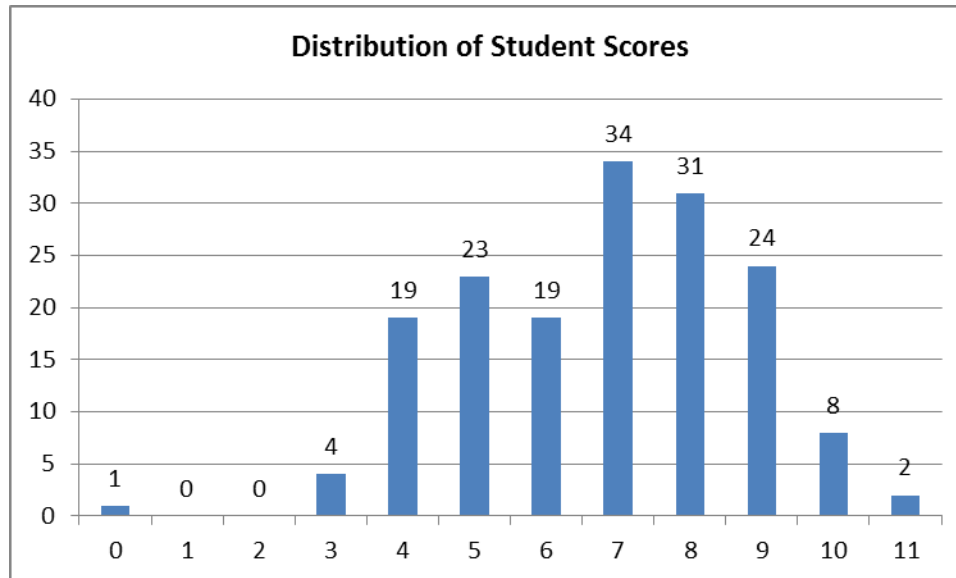
Figure 1: IL Scores for First-Year Students

The 11 questions were mapped to the 5 ACRL standards (as described in Section 4.3: Question Mapping and Clustering) but there is another way to group the questions for analysis. The following table represents this grouping.

Table 4: Question Grouping into Three Categories

Grouping	Associated Questions
Search Strategies	1, 3, 5, 9
Evaluating Sources	2, 6, 7, 8
Ethical use of Information	4, 10, 11

Four questions focus on search strategies. For example, Question 1 addresses the ACRL outcome 2.3.b: *"[The student] uses various classification schemes and other systems (e.g., call number systems or indexes) to locate information resources within the library or to identify specific sites for physical exploration*[10]*."* Questions 3, 5, and 9 assessed all of the outcomes under performance indicator 2.2.

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[10] American Library Association (2000). Information Literacy Competency Standards for Higher Education. http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm

Students performed the worst in this group. Only eight students, roughly 5%, answered all four questions correctly. Fifty-six percent of the students demonstrated an understanding of Boolean search. Fifty-three percent demonstrated the ability to locate resources within the library. Forty-four percent could evaluate keywords for searching. Finally, twenty-three percent of students understood truncation searches.

Question 9: Boolean Search
Question 1: Locating Resources
Question 3: Evaluating Keywords
Question 5: Truncation Search
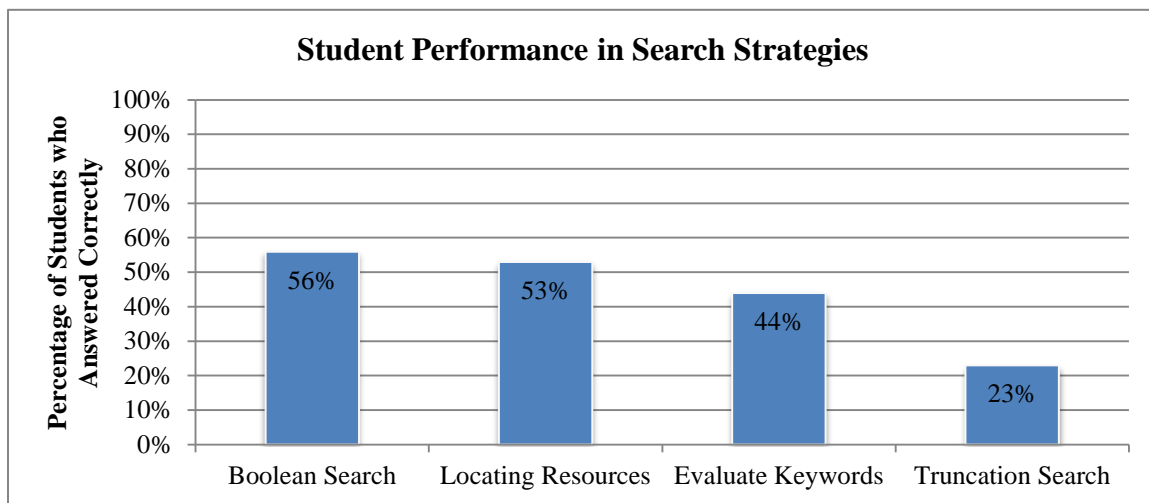
Figure 2: Student Performance in Search Strategies

The second area of focus was ethical use of information, which included questions 4, 10, and 11. Students performed best in this grouping. Seventy-five students, about 45%, answered all of the questions in this area correctly. Questions in this category assessed ACRL outcome 2.5.c and outcome 5.1.d. Students performed the best in this area of focus. Ninety percent of the students were able to answer question 11 correctly, which dealt with understanding copyrighted material. Seventy-four percent of the students correctly identified the in-text citation in question 4. Sixty-seven students understood the purpose and content of the bibliographic citation in question 10.

Question 11: Copyrighted Material
Question 4: In-Text Citation
Question 10: Bibliographic Citation
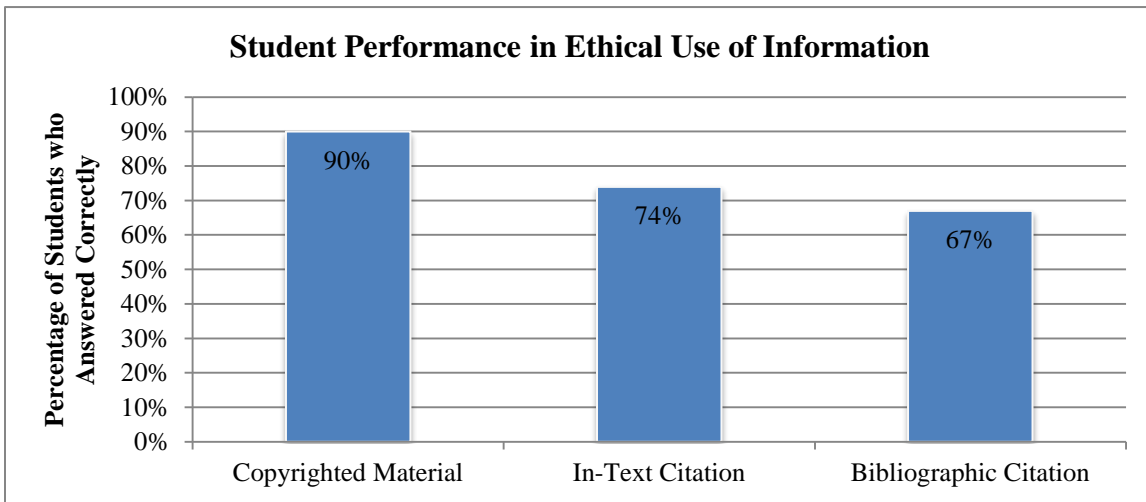
Figure 3: Student Performance in Ethical Use of Information

The final group was evaluating sources, which included questions 2, 6, 7, and 8. Forty-two students, about 25%, answered all four correctly. Questions in this category assessed ACRL outcome 1.2.e, outcome 2.3.a, and 2.1.c. Ninety-five percent of the students understood the validity of web-based resources, presented by question 2. Eighty-one percent of the students could identify the most applicable source type in question 6. Forty-eight percent of the students recognized the different resources in question 7. Finally, forty-five percent of the students could identify the unbiased information source presented in question 8.

Question 2: Validity of Web Sources
Question 6: Most Applicable Source Type
Question 7: Recognizing Different Resources
Question 8: Identify Unbiased Information Source

Student Performance in Evaluating Sources
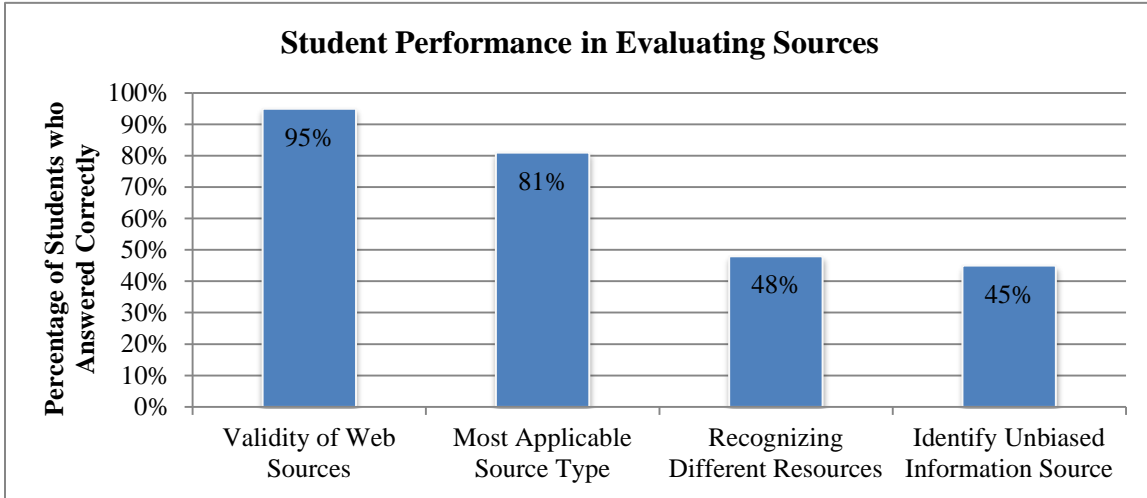
Figure 4: Student Performance in Evaluating Sources

4.2   RELATIONSHIPS IN THE DATA

The survey section of the test was used to determine relationships in the data. The background questions collected information on the student's gender, major, prior college experience, library experience, and perceived confidence in their information literacy skills.

Confidence

Prior to taking the exam, the students were asked to report their level of confidence in doing academic research. They were given the choices "not confident at all," "not very confident," "somewhat confident," and "very confident." Most of the students (55%) reported that they were "confident" or "very confident" in their ability to perform academic research while only 11% said that they were "not very confident." No student responded feeling "no

confidence" in their information literacy skills (See *Figure 5: Distribution of Students in Each Confidence Level* below).

Distribution of Students in Each Confidence Level

Confidence Level	Students
Very Confident	25
Confident	66
Somewhat Confident	56
Not Very Confident	18
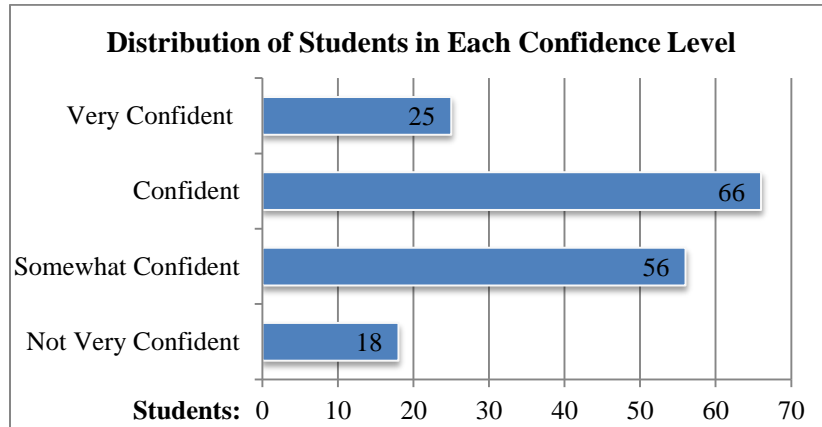
Figure 5: Distribution of Students in Each Confidence Level

The first analysis was to determine whether or not there was a relationship between a student's perceived confidence and their gender. The question regarding the student's information literacy confidence was asked prior to seeing the first information literacy question. Using a chi-squared test (*Table 5: Gender vs. Confidence*), it was determined that males have a higher perceived confidence in their information literacy skills than did females.

Table 5: Gender vs. Confidence

	Observed	
	Males	Females
Low Confidence	37	37
High Confidence	64	27
P-Value Result	0.00769	

The above table represents how confident the students of each gender felt in their information literacy skills. The category of "Low Confidence" consists of students who responded to the confidence background question with either "Not very confident," or "Somewhat confident." Students who responded with "Confident" or "Very Confident" were grouped into the "High Confidence" category. More males reported feeling a higher level of

confidence than expected, while more females reported feeling a lower level of confidence than expected. The p-value result yielded 0.00769 which is statistically significant. Assuming that the null-hypothesis is true, the p-value represents the probability that the results obtained though statistical testing could occur by random chance. The value of less than 0.05 has been chosen by statisticians as the standard threshold of statistical significance for a p-value result.

Studies have shown that women's lack of confidence deters them from pursuing certain professional education such as science and engineering. Data indicates a noticeable difference in confidence between genders toward mathematics, problem solving and computer skills. Moreover, the confidence gap between genders increases with age. However, the lack of confidence does not necessarily reflect poor performance; women who achieved goals equal to or better than their male counterparts have still underestimated themselves. In a study conducted by Mary Lundeberg at University of Minnesota, subjects were asked to rate their confidence on their answers to each question. [11] The result showed that both men and women were overconfident. However, the males were much more overconfident when they were incorrect than women when they were incorrect. The researcher suggested women were better than men at calibrating their confidence, suggesting that the problem may not be the lack of confidence in women. The most important finding was that the difference in confidence depended on the content of questions asked. According to Lundeberg's study, in certain topics such as mathematics, men had higher confidence compared to women, while in other areas such as experimental design, no such difference was observed. Another study, conducted by Sandra Farber at Yale's Law School, suggested that women students felt more comfortable revealing

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[11] Lundeberg, Mary A., Paul W. Fox, and Judith Punćochař. "Highly Confident but Wrong: Gender Differences and Similarities in Confidence Judgments." *Journal of educational psychology* 86.1 (1994): 114-21.

their self-confidence on an anonymous questionnaire than in front of their peers or teachers.[12]

Even though women and men obtained equivalent results, the report shows some men are over-confident when compared to the women, who are less confident. The article also mentioned a study of 29,000 first-year law students. This study found that the women suffered a lack of confidence with regards to their performance compared to their male colleagues, even though the women's performance was equivalent or surpassed the performance of the men.

The second analysis focused on a student's perceived confidence and their overall score on the information literacy competency assessment. Once again, a chi-squared test was performed on several different groupings of scores. One of the groupings is displayed in *Table 6: Score vs. Confidence*. The low confidence and high confidence groupings used the same criteria as the previous table. The "High score" category were students who received a score of seven or higher, while the "low score" category consisted of students who received a score of less than seven. The chi-square test yielded a p-value result of 0.0000042. The result shows that students with higher confidence performed better on the test than those who had lower confidence. The p-Value indicates these results are very likely to occur by random chance.

Table 6: Score vs. Confidence

	Observed	
	High Score	Low Score
Low Confidence	30	44
High Confidence	69	22
P-Value Result	0.0000042	

Gender

Gender was another variable used in further analyses. We set out to determine whether or not one gender had a higher measure of information literacy skills. Several chi-squared tests

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[12] Farber, Sandra R. "Under - Confident Women and Over - Confident Men: Gender and Sense of Competence in a Simulated Negotiation." *Yale Journal of Law and Feminism Yale Journal of Law and Feminism* 17 (1999): 271-302.

were performed using different ranges of scores. The results show that males appear to have higher scores than women; however the p-value result is above the 0.05 threshold for statistical significance. This means that while men appear to have better scores for this iteration, the difference is not statistically significant. All of the chi-squared tests reached the same conclusion.

Table 7: Gender vs. Performance, First Grouping

Score Range	Observed	
	Males	Females
9 – 11	25%	14%
6 – 8	51%	52%
4 – 5	24%	28%
0 - 3	1%	5%
P-Value Result	0.1092	

Table 8: Gender vs. Performance, Second Grouping

Score Range	Observed	
	Male	*Female*
8 - 11	43%	35%
4 – 7	56%	59%
0 – 3	1%	6%
P-Value Result	0.1162	

Table 9: Gender vs. Performance, Third Grouping

Score Range	Observed	
	Male	*Female*
6 - 11	75%	66%
0 - 5	25%	34%
P-Value Result	0.1821	

Prior Research Experience

As noted in Section 3.1, the question regarding Prior Research Experience was difficult to analyze because of the number of different combinations of answers selected by students. One point of interest which was obtained from this data was that 69 students indicated that they had

no prior research education, yet over half of them scored 8 or above on the information literacy test. While this project did pilot test new information literacy questions, it did not study possible improvements to the demographic questions. This may be a fruitful direction for future research.

Major

The survey allowed students to select from 19 different majors, resulting in a data set with many majors containing only one or two students. The small number of students in many majors made it impossible to perform a standard chi-square test, so student majors were combined into three groups: Engineering, Non-Engineering, and Undecided. The percentage of students who fell into each of these groupings is displayed by *Figure 6: Percentage of Students in each Grouping of Majors*.
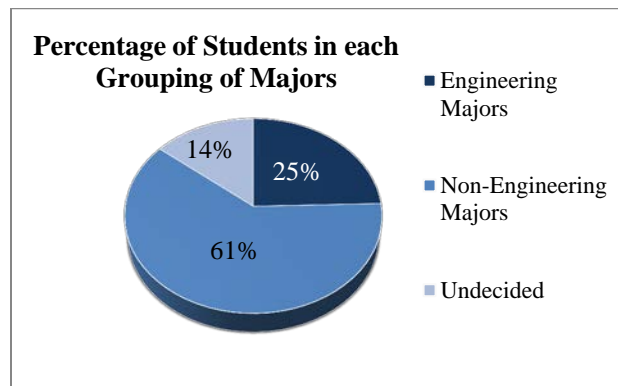
Figure 6: Percentage of Students in each Grouping of Majors

The maximum possible score was 11. The average scores for each of engineers, non-engineers, and undecided students were 6.91, 6.27, and 6.74, respectively. The difference between the means of engineering and non-engineering students was 0.635, with non-engineering majors performing better than engineering majors. A t-test was performed to

determine if the difference between the score for engineers and non-engineers was statistically significant.

Table 10: T-Test to Determine Significance of Major and Score

	Major	
	Engineering	*Non-Engineering*
Mean	6.909	6.274
Standard Deviation	1.544974	1.300124
Sample Size	40	100
P-Value Result	0.0147	

The p-value for the t-test was 0.0147, which means that non-engineering majors have greater information literacy skills than engineering majors when they arrive at WPI. Notice that the data in Table 10 does not include the students who reported that they were undecided about their major.

5. POST-TEST

5.1 REVISING THE QUESTIONS & RETHINKING ASSESSED STANDARDS

In December 2010, after presenting results of IL Competency pilot, librarians gave us feedback. The librarians decided to remove question 5, which tested truncation, and question 7, which similar to 6, tested students' ability to select a reliable source. Instead, questions assessed ACRL outcomes 2.2.c and 2.5.c were requested since they are concepts librarians attempt to address with first-year students. Librarians were interested in developing a post-test to deploy to the first-year students. A post-test would allow librarians to compare results and determine if there have been changes in IL competency during students' first-year at WPI. Piloting of new questions occurred during late January and early February 2011. The library staff plans used input from the project team in order to devise and deploy a post-test in April/May 2011.

Standard Two, Performance Indicator Two, Outcome c, of the ACRL Standards states that the information literate student "Selects controlled vocabulary specific to the discipline or information retrieval source." The team found that outcome 2.2.c is a rather hard concept to test. After much discussion with the project team and librarians, a concept for the question was developed that could test the participants' competency in regards to 2.2.c.

ACRL Standard Two, Performance Indicator Five, Outcome c, declares that the information literate student "differentiates between the types of sources cited and understands the elements and correct syntax of a citation for a wide range of resources." Unlike outcome 2.2.c, the concept of citation is more easily tested. Question development for this outcome proved easier in the end.

5.2   PILOT TEST FOR NEW QUESTIONS

For the purposes of piloting the 2.2.c and 2.5.c questions, three questions each were developed and separated into three pilot assessments. Each test comprised of one 2.2.c and one 2.5.c question, labeled "1" and "2" respectfully. The assessments were codenamed Green, Red, and Blue, which can be found in their entirety in Appendix D. With the developed pilot tests all set, the next step required the request for an exemption from the Institutional Review Board (IRB).

The team needed to obtain approval from the Institutional Review Board since the pilot testing involved human subjects. Submitting an IRB exemption form asked for approval to pilot the questions without having a full IRB review, which could be a lengthy process. Since the pilot testing was for educational purposes and no personally identifiable information was obtained, an exemption approval was possible.

After the replacement questions had been written and the IRB exemption approval had been received, the piloting occurred. On February 11, 2011, a table was setup inside the entrance to WPI's Gordon Library, and for over three and a half hours the pilot testing took place. The offer of free doughnuts was utilized to obtain undergraduate participants. Since the post-test will be administered to freshmen toward the conclusion of this current school year, these new questions could only be piloted on sophomores, juniors, and seniors. In total, thirty students participated in the pilot testing.

A series of steps were undertaken in an attempt to make the participation of each student, and the information obtained from each, relatively uniform. First participation was solicited. Once a student showed interest in participating, the team confirmed whether he or she was a sophomore, junior, or senior. If the interested party was a freshman or graduate student, we

politely told him or her that he or she did not qualify, and thanked him or her for volunteering. For those who did qualify the next step was to give them an informed consent form to read over and sign. At this point, if questions were not asked about the informed consent form, the surveyor asked if there were any questions. If questions arose, the surveyor answered them. The students were then given the option to take an unsigned copy of the informed consent for their personal records, while the team kept the signed copies.

Next the student was given a copy of one of the tests. After reading through and answering the two questions, the participant was given an unmarked copy of the test while the surveyor took notes on the back of the assessment he or she marked. The unmarked copy allowed the student to look at the questions while asked a few follow up questions, which could help determine which would be most useful to put in the post-test.

There were three follow up questions. First, the year of the student was confirmed. Next the participant was asked to walk the surveyor through the thought process used to come to the conclusions he or she did for each question, which included why he or she chose his or her their answer. For the final follow up question, the participant was asked to look over all three sets of questions. The project team asked the test taker to read through all six questions and to select a preferred version of each question, as well as explain his or her reasoning. Finally, the student was thanked for participating, offered to select a doughnut and a napkin, and wished a good day. At any point, the student participating in the pilot testing had the option to abandon the activity. Only one did not answer all of the follow up questions due to his or her need to leave.

In total, thirty undergraduate students participated in the pilot testing. Nine students took the pilot test Green, ten piloted the questions on Red, and eleven participated using Blue. To

begin analyzing the results and discussions with test takers of the pilot testing, the team looked at each version of the test individually in order to make recommendations for the best questions to use on the future assessments.

Question Analysis

Green

1. Review this Library Catalog record and respond to the question below.

Solar Architecture in Cool Climates

Title:	Solar Architecture in Cool Climates
Author:	Porteous, Colin
Contributor(s):	MacGregor, Kerr
	Ebrary Academic Complete
Publisher:	London : Earthscan Dec. 2005 Herndon : Stylus Publishing, LLC [Distributor]
ISBN:	9781844072811
	1844072819 (Trade Paper)
Description:	256 p. ill 09.250x08.000 in.
Format:	Book
Subjects:	Solar Houses
	Sustainable Agriculture
	Solar Heating
	Electronic books.
Web Link:	Connect to E-Book.

Notes:
* "A must-read for practitioners, teachers and others interested in or working with energy use in the built environment, including a delightful set of examples" -- Anne Grete Hestnes, former President of the International Solar Energy Society* Includes case studies from Europe and North America, dealing with new-build, retrofitting, and conceptual projects that outline future potential * Written in a clear, accessible style, approaching the topic in a thematic manner, this will be an invaluable primer for both building professionals and studentsTo implement new techniques in daily practice, architects require palatable information combined with convincing arguments. This book fulfills this requirement, providing inspiration, an understanding of key principles, and technical data on the design of solar buildings in northern latitudes (or the southern equivalent). The authors examine how additional costs can be diluted through different strategies, the tensions between energy efficiency and environmental quality, and the proactive control of energy in building design. Promoting flexibility and opportunity to a diverse audience, including those who use, procure, and finance buildings, the book aims to bring the design of "green" buildings in cool climates from special interest status into the mainstream. The final chapter meshes technical aspects with the aspirations of users, to develop a more sustainable architectural program in which lay players (mainly clients) effectively sponsor responsible environmental innovation.

Holdings Information

Location:	ELECTRONIC BOOK
Call Number:	TH7414.P67 2005

Persistent Link   http://gordonlibrary.wpi.edu/vwebv/holdingsInfo?bibId=608019

This item
Record View
- Staff View

Actions
- Make a Request
(e.g. Hold, Founders, Project Report, etc.)
- Print
- Export
- E-mail
- Add to My List

More About This Item From

Google Books:
Limited Preview
"About This Book"

Check Other Local Libraries

What is the best way to find additional books and library materials on solar architecture:

    A. Click on the Subject for *Solar Houses*

B. Perform another keyword search on *solar buildings*
C. Click on the Author
D. Click on the Web link
E. I do not know

Of these nine participants, seven of them chose the correct answer to the first question, A. One of the two incorrect responses was E, or "I do not know," while the other response was B. The reasoning that students who obtained the correct answer gave for selecting it varied slightly. Most of the students used varying processes of elimination, or were already familiar with the Gordon Library's library catalog and consequently knew what function the links listed under the "Subjects" area performed.

The participant who chose to select answer B had a valid reason for selecting it over the correct answer A. In the question the student is asked to select the best way to find more materials on solar architecture. Answer A suggests selecting "Solar Houses," which is a subject link, while answer B suggests performing a keyword search for solar buildings. Since the question asks about solar architecture, and buildings encompass more forms of architecture than houses, the student selected the broader answer. This reasoning exposed a flaw in the question. It is not indicated anywhere in the library catalog record or the question that houses would be a better choice than buildings. So in lieu of knowing how the subject headings worked and what the question is trying to test, selecting answer B could be a valid choice. Due to this ambiguity, Green question 1 should not be further considered for the test revision.

2. Helms, Volkhard. *Principles of Computational Cell Biology from Protein Complexes to Cellular Networks*. Cambridge University Press, 2008.

What type of source is cited above?
   a) Newspaper article
   b) Book
   c) Magazine article
   d) Technical report
   e) I do not know

Eight of the nine students who took Green, correctly answered the second question with the selection of answer choice B. Many of the participants knew that the citation was that of a book because they were familiar with book citations, or surmised that it was a book due to the Cambridge University Press being listed in the citation. The student who answered the question incorrectly chose answer A, believing that the citation was that of a newspaper article. This student's reasoning for the selection was that he or she used the process of elimination.

Red

1. Review this Library Catalog record & respond to the question below.

Books as weapons : propaganda, publishing, and the battle for global markets in the era of World War II /

Title:	Books as weapons : propaganda, publishing, and the battle for global markets in the era of World War II / John B. Hench.
Author:	Hench, John B.
Publisher:	Ithaca, N.Y. : Cornell University Press, 2010.
ISBN:	9780801448911 (cloth : alk. paper) 0801448913 (cloth : alk. paper)
Description:	xviii, 333 p. : ill. ; 25 cm.
Format:	Book
Contents:	Introduction : Books on the Normandy beaches Modernizing U.S. book publishing War changes everything, even books Publishers organize for war and plan for peace "Books are the most enduring propaganda of all" Seeking "an inside track to the world's bookshelves" "Everyone but the janitor" selected the books Books to pacify and reeducate the enemy Making the "nice little books" Liberating Europe with books The rise and fall of the United States International Book Association The empire strikes back Books for occupied Germany and Japan Epilogue : American books abroad after 1948.
Subjects:	World War, 1939-1945--Propaganda. Propaganda, American--Europe--History--20th century. Propaganda, American--Japan--History--20th century. Publishers and publishing--United States--History--20th century. Book industries and trade--United States--History--20th century.
Notes:	Includes bibliographical references and index.

Holdings Information

Location:	GENERAL COLLECTION
Call Number:	D810 P7 E854 2010
Status:	Available

Persistent Link	http://gordonlibrary.wpi.edu/vwebv/holdingsInfo?bibId=678767

This item
Record View
- Staff View

Actions
- Make a Request
(e.g. Hold, Founders, Project Report, etc.)
- Print
- Export
- E-mail
- Add to My List

More About This Item From

Google Books:
"About This Book"
Check Other Local Libraries

What is the best way to find additional books and library materials on Nazi propaganda:
 a) Click on the Author
 b) Perform another keyword search on *German propaganda*
 c) Click on the Web link
 d) Click on the Subject for *World War, 1939-1945--Propaganda*
 e) I do not know

During the piloting, it came to our attention that a problem existed within the answer choices of Red question one. The problem lies with answer C. Choice C suggest clicking on the

"Web Link," but the library catalog record, unlike the other two iterations of the question, does not have a web link on it. Thus, if the student looked over the record thoroughly, he or she could easily eliminate answer C as a possible valid response. As it so happens, no one selected it.

Ten students answered the questions on Red. Eight of these students correctly answered question one with answer D, while the other two selected answer choice B. Several of the students were already familiar with the subject links' use. Two of the participants, who answered correctly, reasoned that since answer B suggested doing a search for "German propaganda" and the question asked about "Nazi propaganda," answer D which suggests the subject link "World War, 1939-1945--Propaganda," would be the better choice. These students figured that German propaganda was too broad. Conversely, of the two students who incorrectly selected answer choice B, one of them reasoned that Nazi propaganda was too specific. Either way, these answer choice selections bring up a problem of interpretation within answer choices B and D. B is too broad since it could refer to German propaganda from any time, while answer D deals with the correct time frame, but encompasses propaganda of all participants of the Second World War, Nazis, Allies, and anyone in between. Also, both selections have the potential to retrieve more literature on Nazi propaganda, which fulfills the requirements of the question.

2. <u>Walt Disney: Art and Politics in the American Century</u>
Steven Watts, *American History*, Vol. 82, No. 1 (Jun., 1995), pp. 84-110.
What type of source is cited above?

    a) Book Review
    b) Conference paper
    c) Journal article
    d) Pamphlet
    e) I do not know

Red question two is the only question that all of the participants answered correctly. All ten students correctly identified the citation as a journal article. Most indicated that they selected

journal article either because of a familiarity with journal article citations and/or recognized that the material being cited had a volume number.

Blue

1. Review this Library Catalog record and respond to the question below.

Sustainable solar housing

Title:	Sustainable solar housing edited by S. Robert Hastings and Maria Wall.
Contributor(s):	Hastings, Robert, 1945-
	Wall, Maria.
	International Energy Agency. Solar Heating and Cooling Programme.
	IEA Energy Conservation in Buildings & Community Systems Programme.
	Knovel Sustainable Energy & Development Library
Publisher:	London ; Sterling, VA : Earthscan, c2007.
ISBN:	1844073254 (pbk. : v. 1)
	9781844073252 (pbk. : v. 1)
	1844073262 (pbk. : v. 2)
	9781844073269 (hbk. : v. 2)
	1844073270 (pbk. : set)
	9781844073276 (pbk. : set)
Description:	2 v. : ill. (some col.) ; 26 cm.
Format:	Book
Contents:	v. 1. Strategies and solutions
	v. 2. Exemplary buildings and technologies.
Subjects:	Solar houses--Design and construction.
	Dwellings--Energy conservation.
	Electronic books.
Web Link:	Connect to E-Book.
Notes:	

" Published by Earthscan on behalf of the International Energy Agency (IEA), Solar Heating & Cooling Programme (SHC) and Energy Conservation in Buildings and Community Systems Programme (ECBCS)"--T.p. verso.
Includes bibiliographical references.

Holdings Information

Location:	ELECTRONIC BOOK
Call Number:	TH7414 .S87 2007

What will appear if you click on "Solar houses—Design & Construction"?

    a) A description of solar houses and their design
    b) A book titled *Solar Houses Design & Construction*
    c) A list of books about the design solar houses
    d) Web searches results about the design of solar houses
    e) I don't know

Pilot test Blue had the most participants with a total of eleven students. The first of these students to participate, found a typographical error in answer C of question one, which happened to be the correct answer. It is a minor error, which most did not even notice. The question on the

assessment was written, "A list of books about the design solar houses," but should have been "A list of books about the design *of* solar houses."

Even with the typographical error, eight of the eleven participants correctly answered the question. Unlike the other versions of question 1, this question tested the participant differently. Blue question 1 asks the students what would happen when selecting a particular link under the subject headings. The correct answer, C, identifies that selecting a subject link will lead to books on the subject. Two students who selected an incorrect answer, choice D, which hypothesized that the link leads to a web search. The selection of D by these participants informed us of an interesting point in this question. If the student did not have prior knowledge of the working of the subject links in a library catalog record in the Gordon Library database, it is not unreasonable for one to think that it might lead to a web search. The third incorrect response was the selection of answer choice A. This student used a process of elimination to erroneously deduce that the link lead to a description of the subject.

2. Below is a list of references within the Solar Cells Wikipedia entry. Which of the following is a scholarly journal?

 a) "Light sensitive device" U.S. Patent 2,402,662 Issue date: June 1946
 b) K. A. Tsokos, Physics for the IB Diploma Fifth edition, Cambridge University Press, Cambridge, 2008 ISBN 0521708206
 c) Perlin, John (2004). "The Silicon Solar Cell Turns 50". National Renewable Energy Laboratory. http://www.nrel.gov/docs/fy04osti/33947.pdf. Retrieved 5 October 2010.
 d) Terry, Mason L.; Straub, Axel; Inns, Daniel; Song, Dengyuan; Aberle, Armin G. (2005). "Large open-circuit voltage improvement by rapid thermal annealing of evaporated solid-phase-crystallized thin-film silicon solar cells on glass". Applied Physics Letters 86: 172108. doi:10.1063/1.1921352.
 e) I don't know

Like question one, two asked the question in a converse manner to the other pilot tests. Question two, asks the participant to select the citation from the answer choices which is that of a scholarly journal. Also like question one, eight of the students chose the correct answer, in this

case choice D. These eight participants had a familiarity with scholarly journals and their citations. One of the more interesting points of the responses to this question came from the students who incorrectly answered the question. Three participants chose incorrect responses, but they each chose a different wrong answer. These responses made Blue question 2 the only question where all of the viable answer selections, which excludes E "I don't know," were selected. The student who selected choice A explained that he or she did so after looking at the titles and dates in each citation, and concluded that A had to be the correct choice since it is the only citation with an issue date. In actuality, answer choice A is a U.S. Patent, and is clearly marked as such, and the date indicates when the U.S. Patent Office issued the patent, much like how many journals have a date of issue. For answer choice B, which happens to be a book, the participant used a rather interesting process to decide that this answer was the correct one. This student looked at the first choice and noticed it was a patent, he or she then noticed that the second option had an edition, which many journals do. Next this student came across answer choice C and noticed it had a web address; at this point the student stopped and selected answer choice B, without reading choice D. The participant stated that he or she did not make it to answer choice D, which is rather interesting to note. For some reason this student seemed to have decided to impose an arbitrary time limit on the answering of this question, and he or she also decided not to look at all of the possible answers. The final participant chose answer C because of the title in the citation.

5.3   RECOMMENDATIONS

Questions to Consider for Assessing Outcome 2.2.c

After taking a look at each question individually, we took a look at the responses for each of the iterations of question 1. Green question 1 may not be a good choice for the final

replacement question. Questions 1 in Red and Blue were similar but ask the question from varying angles. The team suggests that either question 1 in Blue or Red is selected as a possible post-test question for outcome 2.2.c, since they have equal merit.

Questions to Consider for Assessing Outcome 2.2.c

All of the participants correctly answered Red question 2, and almost all participants answered Green correctly. Blue question 2 had the most variation in its responses. From the feedback the students considered Blue question 2 the most challenging. The team felt this question did the best job assessing 2.5.c.

6. CONCLUSIONS

Information literacy skills are fundamental for the learning process. The librarians at Worcester Polytechnic Institute are charged with a difficult task of training students at WPI with the necessary information literacy skills. The IL assessment that was developed in 2010 by an IQP team will help point the librarians in the right direction.

The initial administration of the survey to first-year students in August 2010 indicated that not all of the incoming freshmen to WPI have the information literacy skills necessary to meet the academic challenges that lie ahead. The average score on the assessment was 6.8 (out of 11) with only 40% of first-year students scoring at least 70%, which means the majority of first-year students "failed" the information literacy assessment. We clustered the assessment questions into three main categories: search strategy, ethical use of information, and evaluating sources. We found out that first-year students did poorly on questions related to search strategies; only 8 out of 165 students answered all four search questions correctly. Students were able to distinguish bad sources and good sources, with 42 getting all of these questions correct. First-year students did best on question related to ethical use of information; with 75 of the 165 students answer all three related questions correctly.

A closer look at the data showed that there is a statistically significant relationship between first-year students' perceived confidence and their actual performance, so students do have an accurate picture of their own information knowledge. Students who are more confident with their research ability did have higher scores. There is also a statistically significant relationship between gender and confidence. Male students are more confident than female students with respect to information literacy. This kind of result, relating confidence to gender, is well known in the research literature. Further analysis indicates that there is a relationship

between gender and performance; male students appear to have higher score than female students. However, this relationship is not statistically significant. Students were also categorized into three grouping of majors: Engineering, Non-Engineering, and Undecided. Our analysis showed non-engineering majors scored significantly higher on the literacy test than engineering majors.

After presenting our finding to the librarians, their feedback suggested the need for revisions to the test. Two questions were removed and new questions were developed and piloted. The new questions focused on ACRL outcomes 2.2.c and 2.5.c.

Overall, the results of the information literacy assessment did yield data that is useful to WPI and the Gordon Library. In particular, the library staff should work with the Dean of Undergraduate Studies to ensure that more first-year students complete the assessment in the coming years. This eleven question test of information literacy certainly has limitations, and should be (and is) part of a much broader strategy. Gordon Library should continue with the first-year assessment program and explore new methods of assessing information literacy.

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8. APPENDICES

APPENDIX A.   AUGUST 2010 VERSION OF IL COMPETENCY ASSESSMENT

WPI Information Literacy Competency Assessment

Informed Consent Agreement for Participation

Researcher & Sponsor:
Christine Drew, Librarian, Gordon Library, WPI
Contact: cdrew@wpi.edu 508.831.6163

This pilot test is designed to assess the information literacy skill level of incoming first-year students. Information literacy is 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.

A preliminary version of this test was developed by an Interactive Qualifying Project (IQP) team working with WPI librarians with the purpose of understanding incoming student's level of skill. The results will allow librarians to target student information literacy needs. We plan to deploy a follow up assessment near the end of the academic year.

This assessment has two sections: a short data collection survey and a section of multiple choice questions. It should take around 12 minutes.

Confidentiality: In order to compare pre & post results, personal information will be collected for research use only. Results will not be reported or shared only as aggregated details, not on a personal level. Any publication or presentation of the data will not identify you. The IQP project team analyzing the data will have access to the results set. Records of participation in this study will be held confidential.

Your participation in this research is voluntary. By agreeing you acknowledge that you have been informed and consent to participate.

Survey

1) WPI Student ID: _____

2) Gender:
   o Female
   o Male
   o Other

3) What is your intended major? (or choose "undecided")
   o Actuarial Mathematics
   o Biology & Biotechnology

- o Biomedical Engineering
- o Chemical Engineering
- o Chemistry & Biochemistry
- o Civil & Environmental Engineering
- o Computer Science
- o Fire Protection Engineering
- o Humanities & Arts
- o Electrical & Computer Engineering
- o Environmental Engineering
- o Interactive Media & Game Development
- o Mathematical Sciences
- o Mechanical Engineering
- o Physics
- o Robotics Engineering
- o Social Science & Policy Studies
- o Undecided
- o Major not listed

  If not listed, please specify:

  _____

4) Which status best describes you?
   - o a first-year student with no prior college experience
   - o a first-year student with prior college experience

     other (please describe) _____

5) Which of the following library research education experiences have you used or participated in previously? (check all that apply)

   - o an in-class presentation or research workshop
   - o a one-on-one or group consultation with a librarian
   - o an online library tutorial
   - o no prior research education

     other (please describe) _____

6) How confident do you feel with your ability to perform academic research?
   - o Very confident
   - o Confident
   - o Somewhat confident
   - o Not very confident
   - o Not confident at all

Competency Assessment

1) Examine this library catalog record. What specific information do you need to find the book in the library?

Title: Energy, environment, and climate / Richard Wolfson.

Author: Wolfson, Richard.

Publisher: New York, N.Y. : W. W. Norton & Company, c2008.
ISBN: 9780393927634 (pbk.) 0393927636 (pbk.)
Description: 1st ed. xviii, 532 p. : ill. ; 24 cm.
Format: Book

Location: GENERAL COLLECTION
Call Number: QC981.8 C5 W645 2008
Status: Not Charged
Persistent Link: http://library.wpi.edu:7008/vwebv/holdingsInfo?bibId=288907

   a. ISBN: 9780393927634
   b. Author: Wolfson, Richard
   c. Persistent Link: http://library.wpi.edu:7008/vwebv/holdingsInfo?bibId=288907
   d. Call Number: QC981.8 C5 W645 2008
   e. Don't know

2) Research scenario: You need to research the beliefs of a religion called Neo-Paganism.
    Which of the following sources would be most credible for a detailed research project?
   a. "Neo-Paganism", from the Wikipedia article at www.wikipedia.org/wiki/Neo-
      Paganism
   b. "The Pagan Diaries", an editorial from the local newspaper
   **c. "Neo-Paganism: from Humble Beginnings", an article from the journal
      Philosophy and Religion Quarterly**
   d. "The Truth about Paganism", from the website www.thesecrettruth.net/revealed.html
   e. Don't know

3) If you are researching the 1918 influenza outbreak and need to find primary source
    materials, which of the following set of keywords would produce the most relevant
    "hits"?
   a. influenza, 1918
   b. influenza 1918 epidemic
   c. influenza flu 1918, diary
   d. influenza flu statistics
   e. Don't know

4) Read the following text and answer the question at the end.

    "The environmental performance of firms around the world is increasingly driven by a set
    of international forces, from international business standards such as ISO 14000 to the
    product requirements of customers in distant markets."
    Source: Angel, David P., Greening of Industry, Encyclopedia of Global Change, Oxford
    University Press, 2002, vol. 1

Which one of the following is the best way to incorporate the author's ideas into a research paper?

   a. David Angel has suggested that international factors are affecting how firms perform environmentally, "from international business standards such as ISO 14000 to the product requirements of customers in distant markets" (Angel 2002).

   b. I believe that standards like "ISO 14000" and customers in foreign countries make a difference to how environmentally affective companies are.

   c. According to Encyclopedia of Global Change, standards like ISO 14000 have an impact on how firms perform in terms of environmental concerns.

   d. It has been said that environmental performance of firms around the world is increasingly driven by a set of international forces, from international business standards such as ISO 14000 to the product requirements of customers in distant markets.

   e. Don't know

5) You are using a research database that uses an asterisk (*) as its truncation symbol. How should you truncate the word "environmental" to get the most relevant results which include variations on the core root of the word?

   a. Env*

   b. Environmentalis*

   c. Enviro*

   d. Environment*

   e. Don't know

6) For a 20th-century history class, you need to find an interview of someone's firsthand account of a riot that happened 20 years ago in Chicago. Which of the following would provide the most appropriate results?

   a. newspaper database

   b. a scientific journal

   c. Google search

   d. magazine database

   e. Don't know.

7) For your biology class, you must research a species of plant. A place you'd expect to find relevant and reliable information would be:

   a. a peer-reviewed journal

   b. a Google search

   c. a magazine

   d. a newspaper database

e. Don't know

8) "Gadgets" are widely used but controversial devices. You are researching their environmental impact for a paper. Which of the following seems to be the most likely source for objective information?
    a. "Pollution and Gadgets" by the National Gadget Makers Association
    b. "What the Government Won't Tell You About Gadgets" from the news blogging site Web Voice
    c. "Building a Better Gadget" an editorial in the New York Times
    d. "Gadgets and Regional Pollution" from the Journal of Gadgets
    e. Don't know

9) You've been assigned a research paper on the effects of acid rain on the fishing industry in Canada. To retrieve results with EITHER of the phrases "acid rain" or "acid precipitation", which query would work best?
    a. fisheries AND Canada AND (acid rain OR acid precipitation)
    b. fisheries AND acid rain OR acid precipitation AND Canada
    c. fisheries OR Canada OR (acid rain OR acid precipitation)
    d. fisheries AND (acid rain AND acid precipitation) AND Canada
    e. Don't know

10) For a bibliography, which of the following is not a valid citation for this journal article:
    What Do Robots Dream Of?
    Christoph Adami
    Science, New Series, Vol. 314, No. 5802 (2006), pp. 1093-1094
    Published by: American Association for the Advancement of Science
    Stable URL: http://www.jstor.org/stable/20032822

    a. Adami, Christoph. "What do Robots Dream of?" Science 314.5802 (2006): 1093-4. http://www.jstor.org/stable/20032822
    b. Adami, C. (2006). What do robots dream of? Science, 314(5802), 1093-1094.
    c. **Adami, C. http://www.jstor.org/stable/20032822**
    d. Adami, C. (2006). What do robots dream of? Science, 314(5802), 1093-1094. http://www.jstor.org/stable/20032822
    e. Don't know

11) For a video project that you are planning to post on YouTube you want to use an image from the webmd.com site. Which of the following is correct?

    a. Since the image didn't have a copyright symbol, it is okay to use in my video.
    b. The image may be copyrighted, so I should check the terms of use or copyright

policy on webmd.

c. Fair use applies, so I can use it in my video.

d. Anything on the web is free to use.

e. I don't know.

Thank you for taking the time to complete this assessment.

Information Literacy Skills of Incoming Students at WPI

Results of the Pilot Test

Kien Dao
Gary Katzoff
Benjamin Lipson
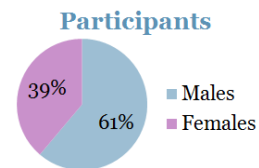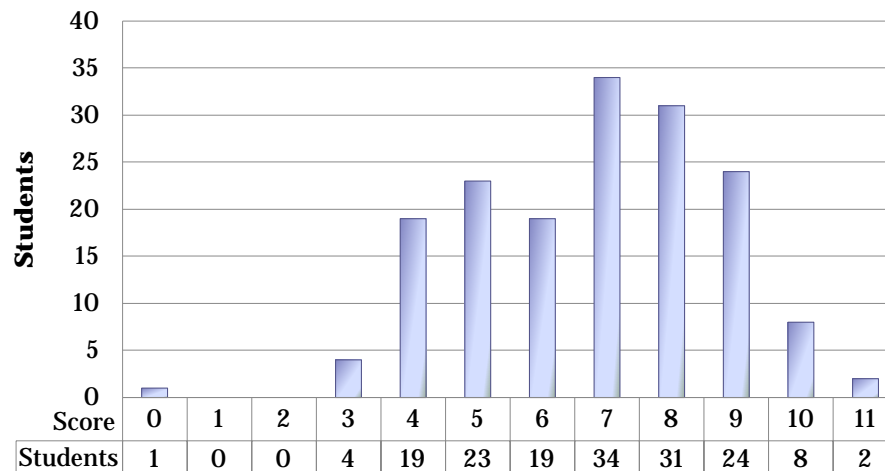Binh Pham

12/15/2010

WPI

Introduction

- **IL test designed by IQP team last year**
  - ▫ Based on ACRL standards
  - ▫ Administered from August 22 to September 7, 2010
- **We have started to analyze the results**
- **Our goals today:**
  - ▫ Discuss preliminary findings
  - ▫ Discuss the next steps

Assessment Overview

- **Invitations were sent to first year students' e-mail**
- **Administered as an online survey**
- **The test contains**
  - 4 demographic background questions
    - Confident about IL
    - Gender
  - 11 multiple-choice IL questions
- **165 students completed the test out of 910**
  - 101 males
  - 64 females

Participants

39% 61%   ■ Males ■ Females

How WPI's First Years Did

Score	0	1	2	3	4	5	6	7	8	9	10	11
Students	1	0	0	4	19	23	19	34	31	24	8	2

Confidence

Is there a relationship between confidence and performance?

- **Yes**
  - Low confidence performed worse
  - High confidence performed better

	Observed	
	High Score	Low Score
Low Confidence	30	44
High Confidence	69	22
P-Value Result	0.0000042	

Is gender related to confidence?

- **Yes**
  - Males more confident
  - Females less confident

	Observed	
	Males	Females
Low Confidence	37	37
High Confidence	64	27
P-Value Result	0.00769	

Is there a relationship between gender and performance?

- **Possibly**

Score Range	Observed	
	Males	Females
[9, 11]	25 (%%)	9
[6, 8]	51	33
[4, 5]	24	18
[0, 3]	1	4
P-Value Result	0.1092	

How did each gender do?
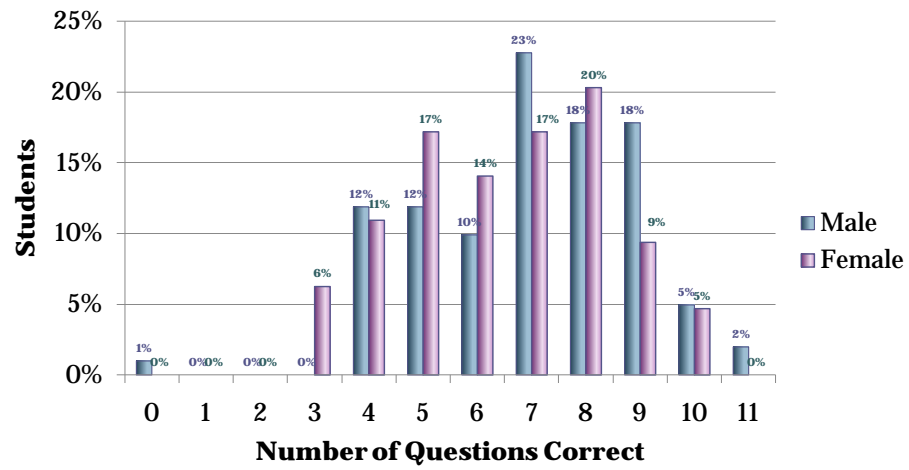
Question Analysis

How did we map the questions?

	1.2.e	2.1.c	2.2.*	2.3.b	2.5.c	3.1.a	3.2.a	5.1.d
Obtain resources by a variety of methods	6	7		1				
Construct search strategies			3, 5, 9					
Evaluate source type, relevance, and validity	6, 8						2, 6, 7, 8	
Gather bibliographic data and cite resources correctly					4, 10			
Understand and avoid copyright infridgement								11
Understand and avoid plagiarism								10

Clustering

- **Search strategies**
  - Questions 1,3,5,9
- **Ethical use of information**
  - Questions 4,10,11
- **Evaluating sources**
  - Questions 2,6,7,8

Search Strategies

- 56% understand Boolean searches
  (Question 9)
- 53% are able to locate resources in the library
  (Question 1)
- 44% could evaluate keywords for searching
  (Question 3)
- 23% understand truncation searches
  (Question 5)

Only 8 students got all 4 correct

---

5. You are using a research database that uses and asterisk (*) as its truncation symbol. How should you truncate the work "environmental" to get the most relevant results which include variations on the core root of the word?

- Environment*   23.03%
- Enviro*   41.82%
- Env*   5.45%
- Environmentalis* 0.00%
- Don't know   29.70%

Ethical use of information

- 90% understand copyrighted material
    - (Question 11)
- 74% could identify a correct in-text citation
    - (Question 4)
- 67% understand the purpose and content of a bibliographic citation
    - (Question 10)

75 students got all 3 correct

Evaluating Sources

- 95% understand the validity of web-based resources
    - (Question 2)
- 81% could identify the most applicable source type
    - (Question 6)
- 48% understand different general information resources
    - (Question 7)
- 45% could identify a source that has unbiased information
    - (Question 8)

42 students got all 4 correct

6. For a 20th-century history class, you need to find an interview of someone's firsthand account of a riot that happened 20 years ago in Chicago. Which of the following would provide the most appropriate results?

- Newspaper database   80.61%
- A scientific journal   7.27%
- Magazine database   6.67%
- Google search   1.82%
- Don't know   3.64%

7. For your biology class, you must research a species of plant. A place you'd expect to find relevant and reliable information would be:

- A peer-reviewed journal   48.48%
- A Google search   23.64%
- A magazine   12.12%
- A newspaper database   9.70%
- Don't know   6.06%

8. "Gadgets" are widely used but controversial devices. You are researching their environmental impact for a paper. Which of the following seems to be the most likely source for objective information?

• "Gadgets and Regional Pollution" from the Journal of Gadgets	**45.45%**
• "Building a Better Gadget" an editorial in the New York Times	**29.70%**
• "Pollution and Gadgets" by the National Gadget Makers Association	**14.55%**
• "What the government Won't Tell You about Gadgets" from the news blogging site Web Voice	**4.85%**
• Don't know	**5.45%**

Summary

Summary

- **Student performance in each category**
  - ▫ Performed best in ethical use of information
  - ▫ Performed fair in evaluating sources
  - ▫ Performed worst in search strategies
- **Men felt more confident in IL abilities than women did**
- **There is some relationship between gender and performance**
- **Students who felt more confident performed better**

Potential Next Steps

A. Interview Students who took the Test for Feedback
B. Revise the Test
C. Post Test
D. All of the Above
E. I don't know

APPENDIX C.   INVITATIONS TO PARTICIPANTS

First Request to Participate August 23, 2010

Dear Member of the WPI Class of 2014:

We invite you to participate in WPI's Information Literacy Competency Assessment, a pilot test designed to assess the information literacy skill levels of new students at WPI. Information literacy is the ability to locate, evaluate, and effectively use information.

A preliminary version of this test was developed by an Interactive Qualifying Project (IQP) team working with myself and WPI librarians over the past year. The results will allow librarians to develop new programs to target student information literacy needs. This assessment has two sections: a short data collection survey and a section of multiple choice questions. It should take around 12 minutes.

Connect to http://www.surveymonkey.com//informationliteracy to begin.

Thank you for your participation.

Arthur C. Heinricher
Dean of Undergraduate Studies
Worcester Polytechnic Institute
100 Institute Road
Worcester, MA 01609
(508) 831-5397

Second Request to Participate early September 2010

Subject: Quick Survey for First-Year Students

Dear First-Year Student:

I would like to invite you to participate in WPI's Information Literacy Competency Assessment survey. Information literacy is the ability to locate, evaluate, and effectively use information. This survey is designed to measure the information literacy skills of first-year students. These skills are essential for your success at WPI.

This survey was developed by an Interactive Qualifying Project (IQP) team over the past year. The results will be used by WPI's librarians to improve the library's programs. Information you provide will not be used in any other way. We will ask for your WPI username only so that we can compare your answers with future surveys.

This quick survey will take you less than 15 minutes to finish.

If you have any questions or concerns, please contact me.

Connect to http://www.surveymonkey.com/informationliteracy to begin.

Thank you for your participation!

Green

1. Review this Library Catalog record and respond to the question below.

Solar Architecture in Cool Climates

Title:	Solar Architecture in Cool Climates
Author:	Porteous, Colin
Contributor(s):	MacGregor, Kerr
	Ebrary Academic Complete
Publisher:	London : Earthscan Dec. 2005 Herndon : Stylus Publishing, LLC [Distributor]
ISBN:	9781844072811
	1844072819 (Trade Paper)
Description:	256 p. ill 09.250x08.000 in.
Format:	Book
Subjects:	Solar Houses
	Sustainable Agriculture
	Solar Heating
	Electronic books.
Web Link:	Connect to E-Book.

This item
Record View
- Staff View

Actions
- Make a Request
(e.g. Hold, Founders, Project Report, etc.)
- Print
- Export
- E-mail
- Add to My List

More About This Item From

Google Books:
Limited Preview
"About This Book"

Check Other Local Libraries

Notes:
* "A must-read for practitioners, teachers and others interested in or working with energy use in the built environment, including a delightful set of examples" -- Anne Grete Hestnes, former President of the International Solar Energy Society* Includes case studies from Europe and North America, dealing with new-build, retrofitting, and conceptual projects that outline future potential * Written in a clear, accessible style, approaching the topic in a thematic manner, this will be an invaluable primer for both building professionals and studentsTo implement new techniques in daily practice, architects require palatable information combined with convincing arguments. This book fulfills this requirement, providing inspiration, an understanding of key principles, and technical data on the design of solar buildings in northern latitudes (or the southern equivalent). The authors examine how additional costs can be diluted through different strategies, the tensions between energy efficiency and environmental quality, and the proactive control of energy in building design. Promoting flexibility and opportunity to a diverse audience, including those who use, procure, and finance buildings, the book aims to bring the design of "green" buildings in cool climates from special interest status into the mainstream. The final chapter meshes technical aspects with the aspirations of users, to develop a more sustainable architectural program in which lay players (mainly clients) effectively sponsor responsible environmental innovation.

Holdings Information

Location:	ELECTRONIC BOOK
Call Number:	TH7414.P67 2005

Persistent Link	http://gordonlibrary.wpi.edu/vwebv/holdingsInfo?bibId=608019

What is the best way to find additional books and library materials on solar architecture:

- A. Click on the Subject for *Solar Houses*
- B. Perform another keyword search on *solar buildings*
- C. Click on the Author
- D. Click on the Web link
- E. I do not know

2. Helms, Volkhard. *Principles of Computational Cell Biology from Protein Complexes to Cellular Networks*. **Cambridge University Press, 2008.**

What type of source is cited above?

- A. Newspaper article
- B. Book
- C. Magazine article
- D. Technical report
- E. I do not know

1. Review this Library Catalog record & respond to the question below.

Books as weapons : propaganda, publishing, and the battle for global markets in the era of World War II /

This item
Record View
- Staff View

Actions
- Make a Request
(e.g. Hold, Founders, Project Report, etc.)
- Print
- Export
- E-mail
- Add to My List

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Title:
Books as weapons : propaganda, publishing, and the battle for global markets in the era of World War II / John B. Hench.

Author: Hench, John B.

Publisher: Ithaca, N.Y. : Cornell University Press, 2010.

ISBN: 9780801448911 (cloth : alk. paper)
0801448913 (cloth : alk. paper)

Description: xviii, 333 p. : ill. ; 25 cm.

Format: Book

Contents: Introduction : Books on the Normandy beaches
Modernizing U.S. book publishing
War changes everything, even books
Publishers organize for war and plan for peace
"Books are the most enduring propaganda of all"
Seeking "an inside track to the world's bookshelves"
"Everyone but the janitor" selected the books
Books to pacify and reeducate the enemy
Making the "nice little books"
Liberating Europe with books
The rise and fall of the United States International Book Association
The empire strikes back
Books for occupied Germany and Japan
Epilogue : American books abroad after 1948.

Subjects: World War, 1939-1945--Propaganda.
Propaganda, American--Europe--History--20th century.
Propaganda, American--Japan--History--20th century.
Publishers and publishing--United States--History--20th century.
Book industries and trade--United States--History--20th century.

Notes: Includes bibliographical references and index.

Holdings Information

Location: GENERAL COLLECTION
Call Number: D810 P7 E854 2010
Status: Available

Persistent Link http://gordonlibrary.wpi.edu/vwebv/holdingsInfo?bibId=678767

What is the best way to find additional books and library materials on Nazi propaganda:
   A. Click on the Author
   B. Perform another keyword search on *German propaganda*
   C. Click on the Web link
   D. Click on the Subject for *World War, 1939-1945--Propaganda*
   E. I do not know

2. Walt Disney: Art and Politics in the American Century
Steven Watts, *American History*, Vol. 82, No. 1 (Jun., 1995), pp. 84-110.

What type of source is cited above?
   A. Book Review
   B. Conference paper
   C. Journal article
   D. Pamphlet
   E. I do not know

1. Review this Library Catalog record and respond to the question below.

Sustainable solar housing

Title:	Sustainable solar housing edited by S. Robert Hastings and Maria Wall.
Contributor(s):	Hastings, Robert, 1945- Wall, Maria. International Energy Agency. Solar Heating and Cooling Programme. IEA Energy Conservation in Buildings & Community Systems Programme. Knovel Sustainable Energy & Development Library
Publisher:	London ; Sterling, VA : Earthscan, c2007.
ISBN:	1844073254 (pbk. : v. 1) 9781844073252 (pbk. : v. 1) 1844073262 (pbk. : v. 2) 9781844073269 (hbk. : v. 2) 1844073270 (pbk. : set) 9781844073276 (pbk. : set)
Description:	2 v. : ill. (some col.) ; 26 cm.
Format:	Book
Contents:	v. 1. Strategies and solutions v. 2. Exemplary buildings and technologies.
Subjects:	Solar houses--Design and construction. Dwellings--Energy conservation. Electronic books.
Web Link:	Connect to E-Book.
Notes:	

" Published by Earthscan on behalf of the International Energy Agency (IEA), Solar Heating & Cooling Programme (SHC) and Energy Conservation in Buildings and Community Systems Programme (ECBCS)"--T.p. verso.
Includes bibiliographical references.

Holdings Information

Location:	ELECTRONIC BOOK
Call Number:	TH7414 .S87 2007

What will appear if you click on "Solar houses—Design & Construction"?

    A. A description of solar houses and their design
    B. A book titled *Solar Houses Design & Construction*
    C. A list of books about the design solar houses
    D. Web searches results about the design of solar houses
    E. I don't know

2. Below is a list of references within the Solar Cells Wikipedia entry. Which of the following is a scholarly journal?

    A. "Light sensitive device" U.S. Patent 2,402,662 Issue date: June 1946
    B. K. A. Tsokos, Physics for the IB Diploma Fifth edition, Cambridge University Press, Cambridge, 2008 ISBN 0521708206
    C. Perlin, John (2004). "The Silicon Solar Cell Turns 50". National Renewable Energy Laboratory. http://www.nrel.gov/docs/fy04osti/33947.pdf. Retrieved 5 October 2010.
    D. Terry, Mason L.; Straub, Axel; Inns, Daniel; Song, Dengyuan; Aberle, Armin G. (2005). "Large open-circuit voltage improvement by rapid thermal annealing of evaporated solid-phase-crystallized thin-film silicon solar cells on glass". Applied Physics Letters 86: 172108. doi:10.1063/1.1921352.
    E. I don't know

APPENDIX E.   WPI IRB APPLICATION AND APPROVAL

Exemption Request

Assessing Information Literacy at WPI – Proposed Research Methods

This project seeks to develop an assessment instrument for use at Gordon Library to assess the information literacy of first-year students at WPI. (Information literacy, as defined by the Association of College and Research Libraries, refers to "a set of abilities to locate, evaluate, and use effectively the needed information."*) An important facet of test development is the cycle of pilot testing and revision, to ensure that the instrument can accurately measure the desired data. Pending approval by the IRB, small-scale pilot tests will be completed during C term 2011.

Small-Scale Pilot Tests

The primary purpose of this phase is to ensure that the current versions of the test item are, first, comprehensible, and that they address the particular skills they are intended to assess. To that end, we hope to offer a series of pilot sessions, aiming for a subject population of thirty students or more, wherein the student would be given one set of three potential draft items to complete. (In addition, demographic data will be collected from each student [class year, amount of library instruction] but no personally identifying information will be collected.) After completing the items, the subjects will be presented with alternative forms of those items (with the regard to phrasing, answer format, etc.) and will discuss with a facilitator whether any of the alternate form seem more understandable to the subject. The subject' responses in this portion of the study will be recorded anonymously by the facilitator, to be used in the next cycle of the test revision.

* Source: ACRL, "Information Literacy Competency Standards for Higher Education".

Informed Consent Agreement for Participation in a Research Study

Investigator: "Assessing Information Literacy at WPI" IQP Group
Contact Information: libiqp-all@wpi.edu
Title of Research Study: "Assessing Information Literacy at WPI—New Question Pilot"
Sponsor: Gordon Library

Introduction: You are being asked to participate in a research study. Before you agree you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

Purpose of the study: This study seeks to evaluate three sets of question designed to measure students' information literacy [IL] skill level. Information literacy refers to the skill set including research skills, critical thinking, resource evaluation, etc.

Procedures to be followed: You will be asked to read and complete three sets of question relating to IL. Answer each to the best of your ability. After completing the items, a facilitator will discuss them with you, focusing on the clarity and purpose of the items.

Risks to study participants: There are no foreseeable risks or discomforts to subjects participating in this study.

Benefits to research participants and others: There are no known benefits to subjects participating in this study.
Record keeping and confidentiality: Records of your participation in this study will be held confidential so far as permitted by law. However, the study investigators, the sponsor or its designee and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identify you by name. Any publication or presentation of the data will not identify you.

Compensation or treatment in the event of injury: There is no foreseeable possibility of physical injury as a result of participating in this study. Nonetheless, you do not give up any of your legal rights by signing this statement.

For more information about this research or about the rights of research participants, or in case of research-related injury, contact:

> **IQP Team**: libiqp-all@wpi.edu
> **IRB Chair** (Professor Kent Rissmiller):
> > Tel. 508-831-5019
> > Email: kjr@wpi.edu

University Compliance Officer (Michael J. Curley):
   Tel. 508-831-6919
   Email: mjcurley@wpi.edu

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

_____   Date: _____
Study participant signature

_____
Study participant name (please print)

_____   Date: _____
Signature of person who explained this study

WORCESTER POLYTECHNIC INSTITUTE
Institutional Review Board
Application for Exemption from IRB Review for
Survey or Interview Research Involving Minimal or No Risk

Use of this application is recommended for most student project research involving minimal risk. Proposed research meets the definition of "minimal risk" when the risks to research subjects are not greater than those ordinarily encountered in daily life. This application is specifically intended for projects in which students are expected to conduct interviews, surveys or focus groups. Please return a signed hard or electronic copy of this application to the WPI IRB c/o Ruth McKeogh, 2nd floor Project Center or irb@wpi.edu. If you have any questions, please call (508) 831-6699.

Reset Form

Project Faculty Advisor(s):

Name: Christine Drew   Tel No: x6163   E-Mail Address: cdrew@wpi.edu

Department: Library

Name: Art Heinricher   Tel No: x5197   E-Mail Address: heinrich@wpi.edu

Department: Provost's Office

Student Investigator(s):

Name: Gary Katzoff   Tel No: E-Mail Address: gkatzoff@wpi.edu

Name: Kien Dao   Tel No: E-Mail Address: keindao@wpi.edu

Name: Ben Lipson   Tel No: E-Mail Address: blipson@wpi.edu

Name: Binh Pham   Tel No: E-Mail Address: thanhbinh271@wpi.edu

Project Title: Assessing Information Literacy at WPI

Project Location and Time Frame: WPI Campus, C TERM 2011

Expected Research Subjects: (e.g. museum visitors under the age of 12)
WPI Undergraduates

NOTE: This application must be accompanied by written research methods and a reasonably complete set of survey or interview questions.

1. Is the proposed research sponsored or supported by a US federal agency or by US government funding?   No ● Yes ○

2. Is the proposed research funded by a corporation or foundation? If so, please identify sources.   No ● Yes ○

3. Does the proposed research involve vulnerable research subjects? (e.g. children, prisoners, students, persons with mental or physical disabilities, pregnant women)   No ●   Yes ○

4. Is the research confined to obtaining verbal or written information from subjects and/or publicly available documentary information?   No ○   Yes ●

5. Could the disclosure of a human subject's identity and responses place the subject at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation?   No ●   Yes ○

6. Will the researchers collect information that can be used to identify the subjects?   No ●   Yes ○

7. If the researchers do know the subjects' identity, will individual responses be kept confidential? (e.g. only summaries of all data will be published)   No ○   Yes ●

8. Will researchers be interviewing people chosen because of their expertise or experience? (See 4, below.)   No ●   Yes ○

Please Print Form before signing below

By signing below, all participants in this research project are agreeing to follow the following instructions:

1. You agree to inform subjects orally or in writing that:
   - Participation in the research is voluntary.
   - Participants may end their participation at any time.
   - Participants need not answer every question in an interview or survey.

2. If your research is **anonymous**, you also inform subjects that you are not collecting names or any identifying information from them.

3. If your research is **confidential**, you inform subjects that no identifying information will be disclosed with individual responses.

4. If your research subjects are chosen and interviewed for their expertise or experience, you seek and obtain each subject's permission to identify him or her in your report, and obtain each subject's permission to disclose his or her views and statements in your report. The subject must be offered the opportunity to pre-approve the publication of any quoted material. If a subject does not wish to appear in your report, you respect his or her wishes for confidentiality.

Signature of Faculty Advisor _____ Date 01/28/11

Print Full Name and Title   **Christine M Drew**

     Revised 11/12/2009

Worcester Polytechnic Institute IRB #1
IRB 00007374

8 February 2011
File:11-015

Worcester Polytechnic Institute
100 Institute Road
Worcester, MA 01609

Re: IRB Application for Exemption 11-015 "Assessing Information Literacy at WPI"

Dear Ms. Drew,

The WPI Institutional Review Committee (IRB) has reviewed the materials submitted in regards to the above mentioned study and has determined that this research is exempt from further IRB review and supervision under 45 CFR 46.101(b)(1): **"Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods."**

This exemption covers any research and data collected under your protocol from 8 February 2011 to 7 February 2012, unless terminated sooner (in writing) by yourself or the WPI IRB. Amendments or changes to the research that might alter this specific exemption must be submitted to the WPI IRB for review and may require a full IRB application in order for the research to continue.

Please contact the undersigned if you have any questions about the terms of this exemption.

Thank you for your cooperation with the WPI IRB.

Sincerely,

Kent Rissmiller
WPI IRB Chair