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Rachael E. Elrod
The Citadel: The Military College of South Carolina, relrod@citadel.edu

Elise D. Wallace
The Citadel: The Military College of South Carolina, wallacee1@citadel.edu

Cecelia B. Sirigos
The Citadel: The Military College of South Carolina, sirigosc1@citadel.edu

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Rachael E. Elrod, Elise D. Wallace, and Cecilia B. Sirigos

Rachael E. Elrod (relrod@citadel.edu), Elise D. Wallace (wallacee1@citadel.edu), and Cecelia B. Sirigos (sirigosc1@citadel.edu) are Reference and Instruction Librarians at the Daniel Library of The Citadel: The Military College of South Carolina.

Introduction

This study presents an analysis of 100 syllabi of credit-bearing information literacy (IL) courses from colleges and universities across the United States. The objective was to determine how IL courses were being presented and taught in academic settings; how many credits were offered; the duration of the course; platform used to teach - face to face, online, or other methods; how students were graded; what types of assignments were used, and what topics were being taught and how. The authors hypothesized that over the course of six years since the original study, syllabi would show significant changes as technology has continued to dominate and expand the library world.

Finally, the study looks to see how national IL courses address the Association of College and Research Libraries' (ACRL) Information Literacy Competency Standards for Higher Education (the Standards). The importance of this research was to guide our own interest in developing a credit-bearing IL course as well as to provide this information for others in our profession who share an interest in this area.

A previous analysis of syllabi for credit-bearing IL courses was conducted in 2006 by Paul L. Hrycaj. No study like this had ever been performed before, as Hrycaj stated, "there do not appear to be any other analyses of syllabi of information skills courses published in the literature" (2006). An additional search found that his article still appears to be the only one specifically addressing this topic in the literature.

Hrycaj's ground-breaking article used the Standards to analyze syllabi for the purpose of comparing skill sets, especially those which librarian's value in information literate students, to what is being taught within the curriculum of IL courses. As the first published analysis of IL online syllabi, Hrycaj's work identified *access of information* as the emphasis of credit-bearing courses in 2006. (Hrycaj, 2006, p.528) He found that ACRL Standard Two, with a focus on matters of information access, was the standard most taught, according to the syllabi. Standard Four, which deals with using information to put together an end-product, was the least taught of the standards.

Our current study found a significant change in the focus of IL courses from 2006 to 2011. When Hrycaj did his analysis, he found that instructors were focused on helping students learn how to use *periodical databases* and how to *search the web*. According to the 2011 study, the emphasis has changed to address the fact that students are conducting most of their searching online, and not citing those sources properly, if at all. In 2005, Harris said,

> "Clearly, the Internet has had an influence on the ease of cheating. Greater connectivity leads to greater opportunity and requires a greater sense of responsibility. This is true for all Internet users. Anyone surfing the Net has the potential to use or misuse and abuse the intellectual and copyrighted property of others, and students are no exception." (Harris, 2005, p.1).

Thus the emphasis shifted from teaching students how to successfully search the web to properly giving credit, or *citing their sources*.

The intention to analyze syllabi from 2006 or later was to evaluate how information literacy courses have developed in more recent years. Subsequent findings illustrated differences in the required texts as well as curriculum content, and expanded on Hrycaj's work by examining the course format, including how many weeks the courses last, the number of credit hours earned, the platform the course was offered in (face-to-face, online, or blended), the types of assignments, required readings, and methods of grading (pass/fail vs. letter grade).

These supplementary criteria are intended to provide further understanding of the ways that information literacy classes are being taught; both content as well as delivery methods. In addition, it appeared there was no research on this topic in the literature. These findings will be of value to those who are currently, or are in the process of, developing courses in information literacy skills.

Literature Review

The first mention in the literature review belongs to Paul Hrycaj's 2006 article "An Analysis of Online Syllabi for Credit-Bearing Library Skills Courses." This analysis set the foundation for further research on skills emphasized in library instruction courses in relation to the Standards. The decision to follow up and expand Hrycaj's work was made with the purpose of increasing the literature in this area. Currently, Hrycaj's article is the only item in the literature that specifically addresses the syllabus content of credit-bearing IL classes for undergraduate students.

Hrycaj calculated that the sample size needed to provide an "accurate generalization from the sample" to the target as 406 syllabi. He computed this by determining that "30 percent of colleges and universities" offered a credit-

bearing library skills class and "the number of colleges and universities in the United States for 2002-2004 is 4,168." He concluded, "the size of the sample needed to make a 95 percent accurate generalization from the sample to this target population is 406." (Hrycaj, 2006, p.532)

The initial attempt was to find 406 syllabi for this research, however the authors were fortunate to be able to duplicate the 100 syllabi of the original study, as they were difficult to come by even with seeking out syllabi through listserv requests. It is our hope that this study will further establish a baseline in this area of study.

In "A Rationale for Information Literacy as a Credit-Bearing Discipline," William Badke (2008) examines surveys completed by undergraduate seniors from the University of California-Berkeley during 1994, 1995, and 1999. These surveys do not directly address information literacy courses, however they do illustrate over-estimations in student research capabilities. Since the publication of Badke's article, similar investigations have been conducted, supporting the lack of truly developed research skills and the need for thorough information literacy instruction. Results of these assessments demonstrate that information literacy will only be obtained when it is formally recognized as an academic discipline, and is held to accountable standards with "a confirmed role within the curriculum." (Badke, p.2)

In the year 2000, the ACRL Standards Committee and Board of Directors reviewed and prepared the Standards. These revised Standards were designed to address the "rapid technological changes and proliferation of information resources." (ACRL, 2000, p.4) A mastery of the five categorized Standards would enable an information literate student to "recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information." (p.4) The question is: how are the Standards being implemented into credit-bearing information literacy classes?

Each of the five Standards is followed by a sub-list of further capabilities, called Performance Indicators, that the ideal information literate student should exemplify. In their simplest form, the Standards are as follows:

> Standard One: The ability to determine the extent and characteristics of information needed.
>
> Standard Two: The ability to successfully and proficiently access information
> Standard Three: The ability to evaluate the information and its source and to merge information with the individual's value system and knowledge base.
>
> Standard Four: The ability to use information to accomplish a particular goal.
>
> Standard Five: The ability to understand the socio-economic, legal, and ethical issues that

accompany information use and information technology.

The ACRL Standards and corresponding Performance Indicators can be found at www.ala.org/acrl/standards/informationliteracycompetency.

Methodology

One hundred syllabi were collected through online searches and requests on professional library listservs. Twelve of the 100 syllabi were results of listserv requests, while 88 were found through online searching. The combinaton of Internet searching and listserv requests was different from Hrycaj's study, who only used syllabi found online.

To perform the online search, Google was utilized and the terms searched included, but were not limited to such words/phrases as "information literacy" syllabus, "library syllabus," "library research" syllabus, and "library skills" syllabus. Syllabi included in this study met the following criteria: They were created for undergraduate, credit-bearing, non-major specific information literacy courses. The analysis provided details on course topics taught, type of assignments, required and recommended readings, quizzes and tests, length of the course in weeks, grading format, delivery method, and final projects.

A spreadsheet was created in Excel, with the first column representing the names of universities from which syllabi was obtained. Columns identified each of the Standards and their Performance Indicators. All syllabi were reviewed to identify activities, lectures, readings, or assignments that addressed specific standards. For example, if a syllabus contained this statement, "Students will develop awareness of the legal, economic, social, and public policy aspects of information resources," then a check would be made next to Standard 5, Performance Indicators 1 and 2. The Standard 5, performance indicator 1 states, "the information literate student understands many of the economic, legal, and socio-economic issues surrounding information and information technology," while Standard 5, performance indicator 2 states, "the information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources" (ACRL, 2000).

Results

A) Length of Class in Weeks

The majority of courses were found to be eight weeks in length, a typical half-semester. The second most frequent length was 16 weeks, typically a full semester. It was surprising to find such a wide variety of offerings, everything from two weeks to 17.5 weeks. There has been no strong guide in our profession to indicate an appropriate length of information literacy courses, which may lead us to a discussion for determining a standardized curriculum.

B) Credit Hours

Differences in course length can be explained by the number of credit hours offered. One would expect a 3-credit class to last longer than a 1-credit course. Note, while all of the syllabi indicated that they were for credit, not all listed how *many* credits, therefore the total did not add up to 100. However, of the classes that did include this information, the study found that the overwhelming majority (over 40 classes) were for just one hour of college credit. Again, there was a wide variety, from one quarter credit to five credits. Future research may wish to examine whether the fact that the majority of the classes are only for one credit hour indicates that library skills are not taken seriously by academia.


Credit Hours
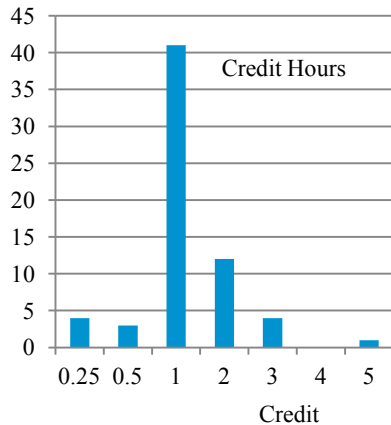
C) Grading

The vast majority of courses offered a letter grade for students completing the course: 71 offered a letter grade of some type (A-F, A-E, A-D, etc.), while fifteen offered a pass/fail option. Not all syllabi listed the grading system. It seems probable that assigning a letter grade for this class would encourage students to take it more seriously. A study conducted by Wise and DeMars examines student efforts in low-stakes assessment situations, indicating that if students perceive an assignment as having no personal benefit, they are less likely to put forth the same level of effort as for a graded assignment.(Wise, 2005)
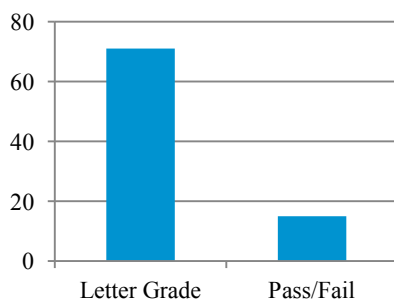
D) Delivery Platform

The graphic for delivery platform illustrates that the greater part of the courses analyzed were delivered in a traditional, face-to-face format, with 71% going this route, with 25% of the courses being taught exclusively online. According to the U.S. Department of Education's National Center for Education Statistics, a little over twenty percent (20.4%) of students participate in some level of distance education courses (NCES, 2012).
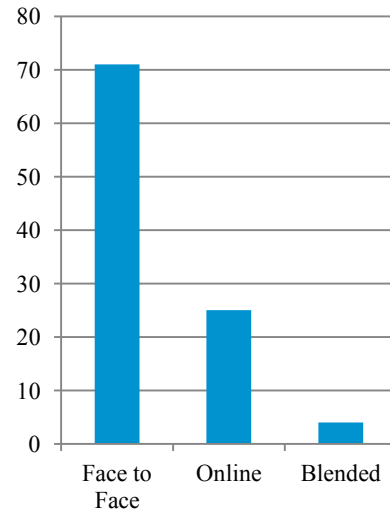
E) Assignments

While there were many assignments given in the syllabi, four of the most commonly found were annotated bibliography, presentations, quizzes, and tests.
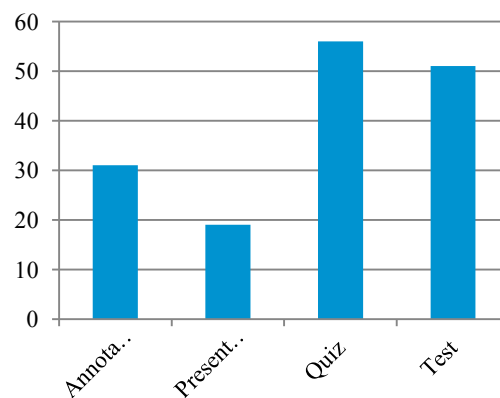
TABLE 1
Topics Covered in Syllabi (The % sign indicates the percent of syllabi covering the specified topic)

Topics	% 2006	% 2011	Rank 2006	Rank 2011	ACRL Standard	Performance Indicator*
Writing citations	76	78	5	1	5	3
Periodical databases	94	74	1	2	2	3
Online catalog	92	64	3	3	2	3
Research strategy	75	61	7	4	2	3
Web searching	93	59	2	5	2	3
Research topics	54	55	11	6	1	1
Plagiarism	40	47	13	7	5	2
Popular vs. Scholarly articles	39	44	14	8	1	2
Copyright	32	37	17	9	5	1
Reference sources	66	31	9	10	1	1,2
Classification systems	57	31	10	11	2	3
Boolean searching	25	31	18	12	2	2
Web site evaluation	79	26	4	13	3	2
How information is produced	6	19	28	14	1	2
Library of Congress subject headings	47	15	12	15	2	2
Print indexes	18	14	21	16	2	3
Government documents	38	13	15	17	1	2
Monograph evaluation	75	11	6	18	3	2
Periodical evaluation	74	8	8	19	3	2
Interlibrary loan	8	8	25	20	2	3
Statistics	19	5	20	21	1	2,2
Concept of information	10	5	23	22	1	2
Censorship	11	4	22	23	5	1
Library tours	32	3	16	24	2	3
Periodical literature	21	0	19	25	1	2,2
Writing a research paper	8	0	24	26	4	1,3
Biographical information	7	0	26	27	1	2
Book reviews	7	0	27	28	1	2

This table indicates the percentage of syllabi covering the various specific topics mentioned in the ACRL Standards and Performance Indicators. For example, the skill of writing citations was covered in 76% of the syllabi researched in the 2006 and in 78% of the syllabi researched in the 2011 study. In the 2006 study, it ranked fifth as the most covered topic, while in the 2011 study it was the most covered topic, giving it a rank of 1. The last two columns indicate where the topic can be found in the Standards. For instance, writing citations can be found in ACRL Standard five, Performance Indicator number three.

TABLE 2

ACRL Standard	# of occurrences 2006	Rank 2006	# of occurrences 2011	Rank 2011
1	267	2	172	2
2	541	1	360	1
3	228	3	45	4
4	8	5	0	5
5	159	4	166	3

In this table, ACRL Standard 1 was mentioned 267 times in the syllabi reviewed in 2006, while it was mentioned 172 times in the syllabi reviewed in 2011, but overall remained the second most mentioned standard. ACRL Standard 2 was mentioned the most in syllabi for both studies; 541 times in 2006 and 360 times in 2011. The least mentioned ACRL Standard for both the 2006 study and the 2011 study was ACRL Standard number 4, only being mentioned 8 times in 2006 and zero times in 2011. The number of times a Standard is mentioned possibly indicates its importance to the librarians teaching credit-bearing IL courses or possibly its

ability to be taught easily in a class setting. This would indicate that Standard 2, "the information literate student accesses needed information effectively and efficiently" is seen as most important while Standard 4, "the information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose" is seen as least important. Another way to view this however is that Standard 2 includes skills that are easily taught in a class environment while Standard 4 does not. Further research may be needed to study the reason why some Standards are taught more than others further.

Table 1 summarizes the results of the analysis and compares the two studies, which reaffirms Hrycaj's findings that ACRL Standard Two (*The information literate student accesses needed information effectively and efficiently*) is the focus of college and university credit-bearing library skills courses. This study also reaffirms that the least utilized standard is Standard Four (*The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose)*.

In the 2011 survey, writing citations was the most taught topic (78%) and covers one of the Performance Indicators of the ACRL Standard Five. This differs from the 2006 survey which found the most taught topic to be *periodical databases* (94%) which is a performance indicator for Standard Two.

* Performance Indicators define the desired learning outcomes. which "serve as guidelines for faculty, librarians, and others in developing local methods for measuring student learning in the context of an institution's unique mission." (ACRL, 2000).

Required Reading

Of the 100 courses in this analysis, 66 required a textbook. A total of 19 different textbooks were assigned, and of these only four were the same as those listed in the findings by Hrycaj. These four are Badke, Bolner, Quaratiello, and the MLA Handbook. .Badke, William. (2004). *Research strategies: Finding Your Way Through the Information Fog. (2nd ed*.), New York: iUniverse. Bolner, Myrtle and Gayle Poirier. (2006) *The Research Process: Books and Beyond*. (4th ed.), Dubuque: Kendall Hunt. Quaratiello, Arlene. (2003). The *College Student's Research Companion. (3rd ed*.), New York: Neal Schuman. Gibaldi, Joseph. (2009). *MLA Handbook for Writers of Research Papers*. (7th ed), New York: Modern Language Association of America.

Discussion

The value of the results presented are important in order to corroborate the work of Hrycaj and to establish a baseline by which to measure future course analysis. By doing so, we will be better able to compare data as our profession continues to grow. This research has also established the first baseline measurement of the number of credit-bearing courses being taught online.

This research leads us to ask if a standardized curriculum should be created to help guide instructional librarians in teaching credit-bearing IL courses. It is the authors' belief that the ACRL Standards should be revised to address what can and cannot be realistically taught by librarians in the classroom, thus creating a guide for librarians who wish to develop credit-bearing courses at their college or university, with skills that can realistically be taught versus those that cannot.

Future research may wish to examine whether the fact that the majority of the classes are only for one credit hour indicates that library skills are not taken seriously by academia. Research in this area may necessitate us to clearly demonstrate to the rest of academia the importance of information literacy in the college and university environment.

Has there has been a shift in the teaching of information literacy over the past five years towards teaching information gathering ethics, such as plagiarism and citing sources? And might this be a result of the increase in online sources for information? Future researchers may wish to conduct further studies to substantiate this inference.

The objective of the study was to examine the content and make-up of credit-bearing information literacy classes. The authors hypothesized that over the course of six years, since the original study, syllabi would show significant changes to reflect the impact of technology as it continued to dominate and expand information sources within and beyond the library world.

The results showed, that while some minor differences are prevalent, the most significant change in IL education was found to confirm the hypothesis. An increased emphasis on teaching the skills needed to select, evaluate, cite, and avoid plagiarism when using online sources, was commonly found in the syllabi studied.

Appendix A provides a complete list of the required textbooks and articles found in the 100 syllabi reviewed for this article. The list provides teachers of these types of courses with resources their peers are using to teach information literacy skills and may guide them in their own syllabi development.

Appendix A

The following is a list of required textbooks and articles which were included in the syllabi used in this study. The number of classes requiring each title is listed in brackets. This list is intended to provide librarians who teach credit-bearing information literacy skills courses with a bibliography of potential materials to include in their classes.

BOOKS

Badke, W. (2008). *Research strategies: Finding your way through the information fog*. (3rd ed.).   New York: iUniverse. [twelve classes]
Badke, W. (2004). *Research strategies: Finding your way through the information fog*. (2nd ed.). New York: iUniverse. [three classes]
Barker, D., Barker, M., and Pinard, K. (2009). *Internet Research* (5th ed.). Course Technology. [two classes]
George, M. (2008). *The Elements of Library Research*. Princeton: Princeton UP. [two classes]
Hock, R. (2010). *The Extreme Searcher's Internet Handbook: A Guide for the Serious Searcher*(3rd ed.). New Jersey: CyberAge Books. Print. [two classes]
Modern Language Association of America's style manual (2009). *MLA Handbook for Writers of Research Papers. (7th ed.).* New York: MLA. [three classes]
Quaratiello, A. (2003.) *The College Student's Research Companion.* (*3rd ed*.). Neal SchumanPub: New York. [two classes]

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