Journal of Information Literacy

ISSN 1750-5968

Volume 10 Issue 1

June 2016

Article

Alcock, E. and Rose, K. 2016. Find the gap: evaluating library instruction reach using syllabi. *Journal of Information Literacy*, 10(1), pp. 86-98.

http://dx.doi.org/10.11645/10.1.2038

Find the gap: evaluating library instruction reach using syllabi

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Abstract

Academic libraries deliver library instruction but how good are practitioners at measuring the effectiveness of their efforts? One medium-sized Canadian university library undertook a new approach to assessing its library instruction programme by collaborating with faculty members and engaging with their course content. Looking initially at recently offered information literacy (IL) sessions, the study challenged commonly held assumptions on the programme, and established a number of broad conclusions. All faculty members from two disciplines were invited to submit syllabi for courses taught in the past few years. In addition to those courses that regularly scheduled sessions in the library, the authors received course content from instructors that had not traditionally booked library instruction, providing a unique opportunity for analysis and to learn about research content in the course requirements of independent use of the library, inclusion of standards on academic integrity, inclusion of a cumulative project, the presence of library instruction, critical thinking, library assignments, general reference to the library and its resources, and whether professors conduct library-type instruction.

The findings point to a number of strengths and weaknesses of the library's instruction programme for these departments, and challenged a number of assumptions. The absence of a library instruction session did not mean the absence of a research requirement or required library usage. The conclusions from the syllabi analysis suggest a need for diversification of services associated with library instruction and increased collaboration between librarians and faculty to support student learning and research. The impact of this study will be seen in both future library instruction programme evaluation and the strengthening of that programme. The results, with the potential to expand to other disciplines, will help inform the development of new methods of delivering library services that support faculty instruction patterns, consultative course planning and collaborative teaching. This project has presented new lines of inquiry for long-term IL programmes across undergraduate curricula within each discipline.

Keywords

information literacy; library instruction; curriculum evaluation; Canada; higher education; academic libraries; faculty; collaboration; LILAC

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1. Introduction

Memorial University is a mid-sized comprehensive institution in eastern Canada (Macleans 2014). The Memorial University Library system has six branches and several other satellite locations serving students all over the province of Newfoundland and Labrador. The largest branch, the Queen Elizabeth II Library**,** covers a wide range of subject areas from the humanities, social sciences, sciences and engineering and employs 26 of the system**'**s 39 librarians. Information literacy (IL) sessions in the QEII Library are carried out by librarians who work full-time for the

information services division, as well as liaison librarians, who also have collection development responsibilities.

The goal of this project was to assess the IL programme in two departments, determine areas of strength and weakness and create a plan for future developments. The study asked how many students are reached in the courses that have a research component. By focusing on the courses, not student learning at this stage, it investigated course and faculty integration and collaboration with the library IL programme. The study asked how well practitioners have done placing themselves and their services within the classes. The authors hope that documenting their approach will be helpful to other IL librarians who seek to initiate a process of evaluation at their institutions.

2. Literature review

In 2013, Katherine Boss and Emily Drabinski won the best presentation award at the International Evidence Based Library and Information Practice Conference (EBLIP) for their session *Looking for InfoLit: using syllabi to map strategic IL instruction*. In the article that followed they outlined the process by which they evaluated 79 syllabi from the School of Business at Long Island University to determine which contained IL learning outcomes and associated library use requirements. (Boss and Drabinski 2013 p. 352). The value of their methodology was their strategy for associating IL outcomes and library requirements within the syllabi. They established questions that "drew from both prior syllabi studies in the literature and from the IL VALUE rubric designed by AAC&U" (2013 p. 353). The Association of American Colleges and Universities (AAC&U) is the national association responsible for the accreditation of liberal undergraduate institutions in the United States (AAC&U 2016). Their IL rubric involves five outcomes: determining extent of information; access the needed information; evaluate information and its sources critically; use it effectively to accomplish a specific purpose; and access and use information effectively and legally (2010). This study provides the initial framework to query syllabi for IL components within courses.

One of the earliest mentions of collecting course syllabi as a means to evaluate a library instruction programme, as a part of becoming a more responsive library, is from Linda K. Rambler (1982). She points to other aspects of academic library practice that can be enhanced by scanning course syllabi, the most obvious being collection development (p. 156). Jeremy Sayles talks about course syllabi as being particularly important for librarians to see, to ensure that students' interpretations of course requirements align with what instructors actually expect (1984 p. 343). Sayles quotes McGrath and Durand (1969) who suggest that the descriptions of courses offered at a university are the more accurate description of the "scholarly interests of the university" when compared with the library catalogue" (Sayles 1984 p. 533) and go so far as to suggest that a university library invests the time to catalogue course descriptions, just as they would books (McGrath and Durand 1969 p. 533).

Much more recently librarians have been discussing ways to achieve increased collaboration with faculty and how the information contained in syllabi can provide library instruction opportunities. Williams et al emphasise the need to keep thinking about the long term when mining existing syllabi, as it can be difficult to implement changes to a course once teaching faculty have defined the details of course content and timelines (2007 p. 270). In the absence of precious in-class time, these authors discuss drop-in workshops aimed at particular classes as a flexible solution that presents beneficial learning opportunities for students (2004 p. 273).

Amy Van Scoy and Megan Oakleaf suggest that most of the work done on building IL into the curriculum of academic departments is anecdote-based (2008 p. 566). Boss and Drabinski suggest that analysis of syllabi can deliver data and provide a clearer understanding of how and where curriculum integration might be possible (2013 p. 352).

Boss and Drabinski are not the first to look at methods that increase metrics on IL and library impact. In Oakleaf's report to the Association of College and Research Libraries (ACRL) she argues for improved metrics and assessment towards defining the value of libraries to our own institutions and stakeholders (2010). There are several recommendations that point to the need for such an evaluation of the IL programme, and that are relevant to this study, including her suggestion to review course content, readings, reserves and assignments to "track the integration of the library resources into the teaching and learning processes of the institution" (2010 p. 7).

Oakleaf encourages librarians to clearly define the outcomes of an IL programme as they are crucial to determining programme success. She also suggests that, in defining library value, librarians should also record and increase library impact on student enrollment: "In the future, libraries can play a more prominent role in reaching key prospective student groups and communicating the ways in which librarians can help students attain academic success." (2010 p. 6). An IL programme is one of the standard ways in which libraries contribute to academic success. Student retention and graduation are concerns for academic institutions, and libraries can link their services with these two areas to illustrate value: "Focus on creating institutional environments that foster retention and eventual graduation. To this end, librarians can integrate library services and resources into high-impact educational practices and embrace proactive early warning and intervention strategies for students with academic deficiencies" (2010 p. 6).

Linking library services to student success has been extensively covered in the literature. In 2012 Soria et al specifically asked whether "students' use of academic libraries in several different areas is associated with success" (2014 p. 84). Massis echoes these authors, stating that: "It has become increasingly clear that, especially for the first-year college student, integration of an overall strategy of IL training and successful access to library resources must be available to all entering freshmen" (2012 p. 91-92). Hagel et al add to the discussion of the role of libraries in student success by highlighting the potential of library/faculty collaboration in the "delivery of academic programmes, catering for diverse student groups, ensuring technologies such as e-books do not disadvantage some groups, anticipating trigger points for withdrawal, and working collaboratively with other support services for integrated support" (2011 p. 218-219).

Other scholars have extended the scope of analyses beyond first year students. Davidson et al (2013) go beyond an analysis of student use of the library based on the year of study by gathering information through EZproxy user logs, grouping students by department and comparing to student GPAs: "The data showed that in every class there was an upward trend, so that the higher percentage of students logging in and the higher number of log ins, the higher the GPAs" (2013 p. 76). Melissa Bowles-Terry attempted to "to establish the value of library instruction at various levels with a scaffolded approach" and to "see where librarians may have the most impact with face-to-face instruction, as well as to find out how the library instruction programme is experienced from a student point of view" (2012 p. 83). Bowles-Terry's research showed a statistically significant relationship between GPA and upper-division library instruction (2012 p. 88). This finding suggests that library instruction programmes should be tiered, with varying objectives for each year.

This study attempts to incorporate these suggestions and provide feedback on the value of the library services to the institution. It seeks to identify gaps in the integration of IL instruction in courses within two departments. The authors hope future projects will help address student learning.

3. Process

As a first step to evaluation the authors gathered statistics on the numbers of library instruction sessions scheduled for chemistry and history from 2008 to 2013. These two departments were selected as representatives from different disciplinary areas and fell into the areas of responsibility of the two project investigators. The selection was not driven by comparison but to provide an opportunity to demonstrate differences within disciplines should they exist. History course instructors regularly scheduled library instruction sessions, with 15-20 sessions each year, for a

total of 105 sessions over five years. Chemistry classes visited the library far less frequently with fewer than 10 library instruction sessions between 2008 and 2013.

The information gathered from regular statistics collection provided limited insight to the types of courses involved in the library instruction programme. The authors had limited information about the course itself; they did not always know the types of assignments required, the research required, or if the professor encouraged students to use the library beyond the single library instruction. This information told them nothing about those courses that did not have a scheduled library instruction class. Are there courses that contain a research component and do not have library involvement, let alone library instruction session? How are the IL needs of these students being met? Are there characteristics shared between courses that tended to influence library involvement?

The information presented in course syllabi offered significantly more information than the previous statistics and presented the opportunity to look at those courses that were not scheduling library instruction classes. They first approached the department heads to ensure that there was informal support of the project as a minimum. We then distributed an email request to faculty members to voluntarily submit their course syllabi to help inform an analysis of the library instruction programme. For those that did not respond after the first request two additional reminder emails followed.

3.1 Question development

In their analysis the authors asked a number of questions of course syllabi obtained through a voluntary process. These questions were developed after an overview of the literature. In their methodology, Boss and Drabinski developed five questions for their analysis based on the AAC&U VALUE Rubric for information literacy (2010). As an American institution, the AAC&U VALUE Rubric is a meaningful tool for Boss' and Drabinski's study. Canadian institutions are not required to meet the standards set by AAC&U. However professional practice is guided by the ACRL framework which has similarities to the AAC&U Rubric. The questions asked of the syllabi needed to suit the authors' position, yet remain informed by the literature. Each question had an AAU&C IL component which they were able to map to the ACRL threshold concepts for their use.

Table 1: Questions developed by Boss and Drabinski, 2013

Q1	Does the syllabus require the student to conduct independent research?
Q2	Does the syllabus require the student to independently use library resources?
Q3	Does the syllabus state learning outcomes related to critical thinking?
Q4	Does the syllabus include a cumulative project requiring students to integrate multiple viewpoints or resources from across the course?
Q5	Does the syllabus address academic integrity issues (e.g. plagiarism, intellectual property, the importance of correct citation)?

The first question asks whether or not the syllabi require students to conduct independent research. For their study, this question targets the AAC&U value of determining the extent of the information needed. Independent research requires a student to define information need as well as the scope of the research required. The skills required to conduct independent research are covered in the new ACRL Framework, but most significantly, a student required the dispositions present in searching as exploration, authority as contextual and constructed, and research as inquiry thresholds (ACRL Framework 2016).

In order to determine if students were evaluated on their ability to access the needed information, Boss and Drabinski asked with their second question if students were required to independently use library resources. When reading the syllabi, the authors of this study asked if the course assignments required students to go beyond textbooks and other assignment readings for completion. This type of activity would require student dispositions and skills within the scholarship as conversation threshold (ACRL Framework 2016).

The third question asked by Boss and Drabinski tried to determine whether or not students had to evaluate information and sources critically: "Does the syllabus state learning outcomes related to critical thinking?" Critical thinking skills are often present in course objectives, but are not necessarily specified. According to Boss and Drabinski (2013), this was the most challenging outcome to evaluate. For the purposes of this study, the authors determined that the outcome or learning objective of critical thinking needed to be named explicitly by the course designer. Critical thinking is a desired disposition and outcome of the ACRL thresholds, mostly associated with Authority is contextual and constructed and research as inquiry (ARCL Framework 2016).

The fourth question asked by Boss and Drabinski focused on using information towards a specific purpose. It pointed to a deeper level of analysis; querying whether the syllabi required a cumulative project that involved the integration of multiple viewpoints or resources from across the course. In terms of the ACRL threshold, this question clearly exemplifies the dispositions in scholarship as a conversation (ACRL Framework 2016).

The fifth question targeted whether or not syllabi included information on academic integrity issues such as plagiarism, intellectual property and citations to determine whether or not it satisfied the AAU&C value of accessing and using information ethically and legally. This value is reflected in the dispositions and skills in the ACRL threshold of Information (ARCL Framework 2016).

These questions target learning outcomes related to IL. They do not address the library's involvement in the delivery or achievement of these outcomes. Syllabi are the result of individual disciplines as well as the instructors that shape course design. How the syllabi present the library and library services are a valuable indicator of IL programme success. The image of a place to learn IL skills is very different from a building with reading materials. The authors of this study created four additional questions to address the level of library involvement in course offerings.

Table 2: Additional questions

Q6	Is the library mentioned at all?
Q7	Is there a scheduled library instruction session?
Q8	Is there a library assignment?
Q9	Is there evidence that the instructor is taking on library instruction-type instruction?

Question six asked whether or not the syllabi included mention of the library. It intended to see whether the library has a presence in the syllabi on a very basic level. Do professors tell students where to obtain their reserve readings? Is the library website referenced? Is there any indication for students where or how information resources can be obtained in or via the library? Many classes schedule library instruction sessions. Determining whether or not a syllabus mentions one is a relatively easy way of determining course involvement in the library instruction programme; this is the value of question seven.

Question eight asks whether or not instructors have included a method of evaluation for the library instruction session. To encourage student involvement in these sessions, a number of professors have designed assignments for these sessions, and allotted a percentage of their final grade.

The ninth question looks at whether or not there is evidence in the syllabi of professors conducting their own IL instruction. It cannot be assumed that professors are not teaching students the skills required for their assignments during course time, nor that librarians or information professionals are the only ones who can fulfill this task.

3.2 Coding process

The submitted syllabi were analysed textually for the concepts from the Boss and Drabinksi questions (2013) and then a second time as the additional questions were developed. In many cases, the questions were designed to elicit a yes or no response, reducing coder inconsistencies. It was determined that, by selecting specific words that indicated a positive answer such as library, research and critical thinking, as examples, the authors could ensure regularity in the coding process.

Devising an overall response rate for this type of project was challenging. In many cases the authors received multiple syllabi from an individual faculty member. Comparing these numbers against the total courses offered by the department was also problematic, as not all courses are offered each term. Nor is a comparison with courses listed in the calendar ideal, as many courses are listed as inactive, or if they are not inactive, are not regularly offered, and no current syllabi exist. For a figure for overall response rate, the authors therefore relied on the number of syllabi received.

4. Results

4.1 Coding results

Table 3: Coded results and questions

		History		Chemistry	
Q1	Does the syllabus require the student to conduct independent research?	30/35	85%	5/13	39%
Q2	Does the syllabus require the student to independently use library resources?	30/35	85%	6/13	46%
Q3	Does the syllabus state learning outcomes related to critical thinking?	29/35	82%	5/13	39%
Q4	Does the syllabus include a cumulative project requiring students to integrate multiple viewpoints or resources from across the course?	25/35	72%	1/13	8%
Q5	Does the syllabus address academic integrity issues (e.g. plagiarism, intellectual property, the importance of correct citation)?	30/35	85%	7/13	54%
Q6	Is the library mentioned at all?	16/35	45%	6/13	46%
Q7	Is there a scheduled library instruction session?	6/35	17%	1/13	8%

Q8	Is there a library assignment?	3/35	8%	1/13	8%
Q9	Is there evidence that the instructor is taking on LI-type instruction?	12/35	34%	3/13	23%

The initial results from the history syllabi suggest that a strong majority of these syllabi reflect the AAC&U Value Rubric and contain aspects of IL. Of the first five questions, the lowest result was found for question four, with 72% of the 35 syllabi received requiring a cumulative project. Question three, which asked about learning outcomes related to critical thinking, was the second-lowest of the first five questions, with 82%. The other three responses were 85%.

Questions six to nine provided more insight on how the library fares when engaging with these courses to support the IL objectives. 45% of the 35 syllabi, or 16 of the 35, mentioned the library, a very basic measure of library supporting course objectives. The other three questions highlighting more advanced methods of support are considerably lower. Only 17% of the classes had scheduled library instruction session, and only 8% had designed an assignment for these courses.

In the absence of library instruction, 34% of the course suggested that the professors were taking on a type of library instruction to ensure that students had the skills to successfully complete course requirements. While the initial calculations provide some interesting conclusions, comparisons between questions also offer insight to the evaluation of the library instruction programme. The chemistry syllabi do not contain as many obvious links to IL. Only about half of the syllabi make mention of the library or have the students independently making use of library resources. 23% of the chemistry syllabi suggest that there is some evidence that the course instructors are covering some of the topics typical to library instruction.

4.2 Looking closer: history

Comparing across questions offers some additional insight into library involvement and course objectives. Setting the number of syllabi that have skills related to IL against library involvement offers greater evaluative potential than rates of library instruction sessions booked on their own. When the authors looked at those syllabi requiring independent research (Q2), and at library mentions in the syllabi (Q6), they found that only 16, or 53%, of those courses that require independent research (30), mentioned the library. For those courses that required independent research and scheduled a library instruction session (Q7), the percentage drops to 20%, or 6 of the 30. For those courses that had a cumulative course project (25 of the 35 syllabi collected), 13, or 25%, mentioned the library, and 20% scheduled a library instruction session. Of those syllabi that addressed academic integrity (30), 15 of these, or 50% mentioned the library as well.

The study found that 36% of those syllabi that required independent research (Q2) also contained indicators that the professor was conducting library-type instruction (Q9). This compares to the 20% of syllabi that contained independent research and scheduled library instruction sessions. When the authors looked at those syllabi that include learning outcomes related to critical thinking (Q3) similar patterns emerged. Of the 29 syllabi, 15, or 51% included a mention of the library (Q6). Of the same 29 syllabi that included critical thinking only 34% suggested the professor was taking on library-type instruction. There is a strong emphasis on research, cumulative projects and independent research skills, but not a corresponding emphasis on the library and its tools.

Three of the 35 syllabi contained library assignments based on the library sessions. These courses have a strong library presence in the syllabi, and include a percentage of grades towards learning how to locate materials in the library. Each of these are first-year courses, contain independent research and require critical thinking skills. The assumption had been that library instruction for history was strong, as September-October and January-February are busy months. The initial

statistics gathered for 2008-2013 support this suggestion. However, the questions asked of the syllabi suggest that the library does not have a strong presence in these course syllabi, despite the requirements of IL skills in the majority of the syllabi collected.

4.3 Looking closer: chemistry

It is difficult to make too strong a claim on any of the comparisons for chemistry with so few responses. However some trends emerge nevertheless. There was only one course with a cumulative project, (Q4) and this did require independent library research (Q2). It did not have a library instruction session but the library was mentioned in the syllabus. The four courses requiring independent library research mention the library in the syllabus (Q6), but two did not. In other words, half of the courses that suggest the students complete library research do not mention the actual library.

The one course requiring independent library research (Q2) does not make any mention of academic integrity in the syllabus (Q5). In two out of five courses where independent library research is required, there is no evidence in the syllabus of library instruction being provided by the instructor (Q9) or the librarian. Three of the five courses that mention some component of critical thinking (Q3) in the course syllabus make no mention of the library, that is they have no obvious source of IL instruction. There is however a strong link between a requirement for independent library research and critical thinking, as illustrated in 80% of the syllabi.

These comparisons offer more information when we look at the responses based on the level of the course.

Table 4: Course-level breakdown for history and chemistry

	1000 Level	1000 level	2000 Level	2000 Level	3000 Level	3000 Level	4000+ Level	4000+ Level
	History	Chemistry	History	Chemistry	History	Chemistry	History	Chemistry
Q1	100%	0%	70%	0%	100%	50%	85%	75%
Q2	100%	0%	70%	25%	100%	50%	85%	75%
Q3	100%	100%	70%	25%	80%	0%	100%	50%
Q4	85%	0%	60%	0%	80%	0%	71%	0%
Q5	85%	0%	100%	0%	80%	100%	85%	100%
Q6	85%	0%	10%	25%	50%	100%	57%	50%
Q7	85%	0%	0%	25%	0%	0%	0%	0%
Q8	42%	0%	0%	1%	0%	0%	0%	0%
Q9	28%	0%	40%	0%	40%	0%	2%	50%

*Percentages are based on the number of syllabi collected, not of all courses.

The division of responses by year of the course presents some very valuable information for the history syllabi. While 85% of first-year history courses mention the library, only 10% of second-year courses do. In the third year, 50% of the history syllabi mention the library and in the fourth and upper year courses, 57% of the syllabi do.

Despite the strong presence of an IL component to the syllabi, there is little involvement of the library beyond first year. Questions seven and eight show no increase, as none of the second courses scheduled a library instruction session or had a library assignment. However, 40% of the syllabi suggested that the professors were providing IL instruction.

After the second year, the syllabi for both third- and fourth-year classes did not schedule library instruction or have a library assignment. In third-year courses, 40% of the syllabi noted library type instruction, but in the fourth year, the syllabi did not indicate that this type of support was offered.

For chemistry there is a strong indication of support for critical thinking across all years. As one might expect, with the emphasis on lab work, there is no mention of the library in the syllabi of those courses from the first year, but this increases as we move through the degree programme, whether through inclusion of actual library research or through like links to resources on academic integrity.

5. Reflections

5.1 Observations on the process

Course syllabi are the property of individual faculty members, who have spent a great deal of time and effort creating them. They have crafted learning objectives for their students and created a set of assignments that work towards those objectives. The absence of the library from a syllabus is not a mistake or oversight by faculty. There are several possible explanations. The content of the course might not lend itself to library instruction or involvement; the faculty might not know the services the library can provide; the faculty might not want to bother the librarian for a 10-minute session when he/she intends to address concepts of IL throughout the course (Alcock and Gibson 2011); the professor might not realise that the library can do more than the 50-minute instruction session; the faculty member might have tried to increase library involvement in their course, but did not have a positive experience.

What the faculty member includes in the syllabus is ultimately up to that faculty member. However, this does not necessarily detract from the potential of syllabi as a tool in research. This study uses syllabi as an indicator of the IL components of a course, and the involvement of the library in the delivery of those skills. The submission of syllabi was voluntary, thus the collection is not exhaustive. Syllabi are also often updated before each course. In many cases, the authors recall having conducted a library instruction session, or assisted with a library assignment for a particular professor of a given course, but it is not noted in the syllabus. So, there is a margin of error in the findings, but the authors believe that the themes that have emerged are telling, and provide a guideline for future projects and progress.

The information needs of the history and chemistry disciplines are very distinct. Gathering information on these two departments was not done to offer a direct comparison, but to provide examples of how different disciplines will have different needs based on course design and goals. The modes of instruction for chemistry and history differ, and have IL needs at different points during the undergraduate career due to the course content. Research and scholarly literature is introduced immediately in first year courses in history. Chemistry, which involves a great deal of lab work and content coverage, may not require similar types of instruction until the third or fourth year. The inclusion of the two disciplines highlight the need for discipline specific IL programmes, or accommodation of these differences with a diverse and flexible set of services.

It should also be noted that different disciplines have different standards and language, which shape how the information in the syllabi is presented. Research components in chemistry and history mean different things, and while it can be assumed that history students will use the library, the same cannot be said of chemistry students; research in chemistry may mean experimentation rather than digging through the primary literature. The question devoted to critical thinking also presented some issues. Many of the history syllabi specifically state learning objectives related to critical thinking and critical reading. For chemistry, the descriptions were not as stated as directly in the syllabi.

There were a few other questions that did not target the best information for the study. The question of library mentions speaks to this point. While it is possible to determine if the library is mentioned at all in the outline, this question does not provide the opportunity to determine where the library was mentioned. Knowing this provides a framework for how the library is being presented - a building full of materials, or a building that offers skill development, services and resources? Determining whether or not professors were providing IL-type instruction was also challenging. It could not be assumed that just because a syllabus lacked a mention of this type of support, it does not mean that the professor did not offer it during class time. In some cases, in the sections on plagiarism, professors encouraged students to visit them during office hours to discuss citation. This was taken as IL-type instruction.

5.2 Findings

Numerous library instruction sessions being held does not necessarily mean a successful IL programme. While instructors may see undergraduates for a single 50-minute session, these sessions are often designed to introduce students to the tools they will need for a particular assignment, and do not get into the wider themes and discussions of scholarly communication and evaluation. For history, a strong majority of the syllabi contained elements that supported the questions designed by Boss and Drabinski (2013) that related to the AAC&U VALUE Rubric for IL. While slightly less than half of the syllabi did mention the library, the history syllabi generally did not score as highly on questions that queried library involvement in the course. So, while successful in delivering single sessions at the first-year level, there is a gap in library involvement in the supporting the teaching of IL skills in the second, third and fourth years. For history, it would seem as though the library is more a building, rather a location for resources and skill development.

For chemistry, the syllabi confirmed, that fewer instructors in the department consider traditional IL, either as delivered by the library, or by themselves. Contact with the students at its current level may be meeting their needs as defined in the curriculum, i.e. the programme as directed toward this group may be no less successful. The collection of syllabi also presents the opportunity to determine when students have potential IL needs by tracking when students have assignments due. Exams were not included in this calculation. The data includes assignments that involved a broad range of IL elements, such as citation, plagiarism. Knowing when students are approaching any type of assessment would be useful for the IL programme but also reference desk staff, and groups like a writing support centre.

5.3 Limitations of the study

As mentioned, there are some limitations of the analysis presented in this study due to the lower response rate from the chemistry department; there cannot be any strong claims made based upon disciplinary differences. Value remains in the approach taken.

The coding process, as considered here, leaves room for others who might choose to follow this method with some room for interpretation. The authors believe that coding for words and themes related to IL might evoke different ideas amongst those studying their own instruction programmes; it is the link back to the questions, and hence the ACRL Framework, that can provide consistency.

Questions six and nine, as mentioned in Section 5.1, proved difficult to analyse; i.e. the word ‘library’ appearing in the syllabus can mean something unrelated to IL. Identifying whether faculty are covering IL-related topics in class may not be obvious in the context of a short syllabus. These questions certainly provide for conversation starters when consulting with faculty in the future.

5.4 Suggestions for future IL evaluations

The results gathered clearly point to the different approaches amongst the disciplines to research objectives. As such, library instruction programmes should have different measures of success depending on the discipline. The content requirements of a course shape, to some degree, the level of library involvement. The questions asked allowed for two very distinct patterns to emerge, and it is possible that they can be used as a framework in other disciplines to evaluate the library instruction programme. The two types of questions - the presence of IL objectives in the course, and the place of the library in the support of such learning objectives are valuable measures and offer meaningful feedback. What is also apparent is that faculty seem to be helping students develop their IL skills. IL skill development is not held solely by the library.

Knowing that faculty are teaching these skills and dispositions is an opportunity to pursue partnerships and collaborations, to expand on the library's involvement within a specific context and stated need. Librarians can ask faculty how the library and IL programme can better serve or support their instruction and efforts. This study has highlighted some specific opportunities where these conversations may be welcome and help faculty deliver some of their stated learning objectives.

The questions also provide information that help guide the long-term design of the library instruction programme. In the case of the history syllabi, arranging syllabi and the responses to questions according to course year show a striking gap within the second year courses. While the presence of the library increased in the third and fourth year, the involvement of the library in these years does not pick up. While there are several possible reasons for this, it does suggest the need for improved marketing. This is also needed in the chemistry department where the library has involvement in a core second-year course, but little in the third and fourth years, aside from sessions for a single faculty member. By devising questions that help identify the ACRL thresholds in the syllabi, and the role of the library supporting these objectives, valuable resources emerge for the design of an improved IL programme.

6. Conclusion

The coding of the syllabi offer a number of conclusions about library instruction in the history courses at the Memorial University of Newfoundland. There is a strong library presence in the syllabi of the first-year courses. The second-, third- and fourth-year courses do not have significantly less research or cumulative assignments, but there are fewer mentions of the library, and far fewer, if any, library instruction sessions. The syllabi collected suggest that the professors are conducting IL instruction to ensure the students develop the necessary skills to be successful. Courses in history seem to be using the library for materials, and instruction on how to find the materials, not a source of IL skills development.

Library instruction sessions assist students with the view of the library as a source of services and access, rather than a building of bricks and books. This syllabus analysis suggests that there are disciplinary differences when students are more likely to engage with the concepts of IL. The history faculty bestows upon students a definition of research that is much more library-inclusive than their chemistry colleagues, whose research tends to be more laboratory focused. Chemistry students are less likely to receive exposure to the library until their upper year courses. Future discussions with faculty in the departments will be better-informed of how the exposure to library

services and access could be best timed to increase student engagement and enhance the ways faculty implement their pedagogical objectives.

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