

Jun 4th, 12:00 AM

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Margy MacMillan and Allison Mackenzie, "Strategies for Integrating Information Literacy and Academic Literacy: Helping Undergraduate Students Make the Most of Scholarly Articles." *Proceedings of the IATUL Conferences*. Paper 16.
<https://docs.lib.purdue.edu/iatul/2012/papers/16>

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STRATEGIES FOR INTEGRATING INFORMATION LITERACY AND ACADEMIC LITERACY: HELPING UNDERGRADUATE STUDENTS MAKE THE MOST OF SCHOLARLY ARTICLES

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Abstract

University students in a Public Relations program were struggling to connect the scholarly literature with their professional practice. A collaboration between a librarian and an instructor in the program led to the development of a class on reading scholarly articles within a research methods course. To better understand the student experience, and the possible impact of that class, the collaborators conducted a survey of students who had participated in the class a year later in another course that required them to use academic materials. The literature review indicates that our students are not the only ones who face challenges in this area, and provides some background both for the class we developed and for the results from the survey.

Keywords: reading; undergraduate students; knowledge survey; information literacy; public relations

This paper explores the challenges students encounter in reading scholarly articles, describes a class developed to help them overcome the challenges and reports the results of a survey of senior students on their reading practices. The paper is based on a collaboration between the co-authors, Margy MacMillan, an Associate Professor and Librarian at Mount Royal University (MRU), and Allison MacKenzie, an Associate Professor of Public Relations in the Faculty of Communication Studies at MRU. A shared concern about students' ability to integrate scholarly materials into their assignments led us to develop and refine classes focused on reading, and eventually to investigate student behaviours and perceptions in a more formal way.

Experience and the literature suggest several reasons for the challenges students face in engaging with scholarly texts that emerge from characteristics of the students themselves, and of the texts themselves. The students we now see in universities and colleges in the West are less prepared to read advanced, dense text, while no generation in history has had easier access to as much advanced scholarly material.

Literature Review

Access to higher education in Canada has broadened from the elite to the general public through open admission policies and increased public demand for qualifications, and we need to account for that in integrating students into the scholarly conversations of higher education. As Carolyn Kreber (2007), notes, "Higher education 'for all' involves changing traditional practices so that not only 'all' get admitted into our programs, but 'all' also have a fair chance to succeed" (para.2). Concerns about reading in general, and student reading in particular are present throughout the literature of higher education (see for example, Cull, 2011; Joliffe and Harl, 2008).

The difficulties students have in reading academic articles affect their ability to use those articles in assignments. In one study of student work, researchers noted that students often chose material they quoted from the abstracts, tables or opening paragraphs of articles, and suspected they were mining the texts for quotations (Emmons, Martin, Botts & Amundsen, 2010, p. 8). Another noted that in a pool of 18 student papers, none showed evidence of the students summarizing their sources, leading the authors to

question “not only whether the writers understood the source itself, but also whether they even read it” (Howard, Service & Rodrigue, 2010, p.186).

This decline in appetite, aptitude, and ability for reading is in direct opposition to the increase in information available to postsecondary students. A recent study using data from *UlrichsWeb* a leading directory of periodicals, established that the number of active and referred journals increased from 22,835 in 2003, to 28,325 in 2010 (Tenopir, Mays, & Wu, 2011, p.5-6). To get a sense of the number of journals a student might have access to, we asked the acting Collections Librarian at our institution. Our students can now obtain articles from around 81,000 periodicals (personal communication, Katharine Barrette, March 6, 2012). For comparison, a study of collections of the Canadian Association of Research Libraries, gave the average number of serial titles per institution as 12,970 for the 1997/98 academic year (Auster & Taylor, 2004, p.64).

However the sheer volume of periodicals is only part of the challenge. Ellison (2001) makes a convincing and well-supported case that articles in today’s journals are longer and more complex than those of 30 or 40 years ago (p.994). Journals are also becoming much more specialized. As librarians have seen through requests for titles from faculty, new journals are published for increasingly narrow audiences, and the discourse within them is correspondingly elevated; as French (2005) states, “The content of these articles pose many problems for the average community or junior college student. For that matter, it often poses problems for those not already postdoctoral scholars in the field (p.18-19).”

If then, our students are less prepared for reading scholarly articles, and the articles themselves are more abundant, written for more specific (and decidedly non-student) audiences, longer, and more complex than they were in the past, we have a problem. Faculty have noted the effect of this across all disciplines (Horning, 2010; Simpson, Stahl & Anderson, 2004; Saltmarsh & Saltmarsh, 2008; Joliffe, 2007). A number of articles report strategies from various disciplines for bringing students and non-fiction, academic text together (see <http://www2.mtroyal.ca/~mmacmillan/reading.html> for selected works in the field). A useful, general, practical work on the topic is John Bean’s “Helping Students Read Difficult Texts” (2001).

It is interesting to note that while the literature of public relations(PR) has not identified reading as an issue, there are concerns about disconnects between theory and practice, which seem to be connected to reading. Two recent studies diagram the divide between theory and practice from the scholars’ and practitioners’ viewpoints, and in both the language of scholarly communication is seen as a barrier. Cheng and de Gregorio (2008) surveyed 273 academics in the field and most agreed with the statement that publications in the field scored low on readability. The academics also felt that practitioners did not read the academic journals. Respondents in Becker’s 2007 qualitative study of 20 PR practitioners noted “that research becomes unhelpful when it becomes entrenched in what one practitioner called “researchese,” an insular way of explaining ideas that only intellectuals can understand (p. 71).” Further, a number commented that if research was understandable, it would then become useable, and consequently, the industry might take a different perspective on its value (p. 72)”. Cheng and de Gregorio noted that in the literature, both practitioners and academics found deficiencies in the usefulness of academic work (p. 381). If scholars and practitioners find the academic literature challenging, should we be surprised that students encounter difficulties?

This disconnect prompted the PR author to look for ways of addressing the challenges her students faced in using scholarly material. The librarian’s involvement came from her work in other aspects of information literacy instruction. Librarian involvement with reading instruction at the postsecondary level is comparatively underreported in the literature. Budd [2008] developed a one-credit, semester-long course incorporating reading and critical thinking with other aspects of information literacy. Gruber, Knefel and Waelchi (2008) describe a collaborative effort with writing centre personnel to scaffold students as they integrate scholarly materials into their writing, which included an exercise in reading and dissecting a scholarly article. Most recently, Rosenblatt (2010) assessed senior students’ work to investigate how well they were able to integrate scholarly information resources. Her results indicate that many of these upper-division undergraduate students were not using the resources they found in meaningful ways, echoing other studies (Emmons et al. 2010; Howard et al, 2010). Most information literacy (IL) sessions focus on

identifying, locating, evaluating and citing material, but as Rosenblatt notes, “Shouldn’t we, as instructional librarians, be concerned about students’ abilities to use the information they have discovered?” (p. 60). Indeed the Association for College and Research Libraries’ *Information Literacy Competency Standards for Higher Education* includes Standard Three: “The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system” (2000), and several of the outcome measures related to this include aspects of reading. There are other, more practical reasons for library involvement in reading, principally the tremendous amount of library funds that pay for access to scholarly articles, and instruction in that access. There is little point in this investment if our primary users, the students, cannot read the articles we purchase.

Teaching reading at MRU

The librarian collaborates with professors in the Faculty of Communication Studies to develop and deliver IL sessions integrated with courses in all of the programs offered. Increasingly, these sessions have included classes on reading, in both practice and theory courses. The most consistent setting for the ‘how to read a scholarly article’ class has been the third-year Research Methods in PR, where the co-authors developed an activity designed to help students overcome challenges in reading academic material. This is intended to provide support for three major assignments that require the use of journal articles in students’ last two years: the journal article analysis assignment in Research Methods for PR, the literature review in Strategic Communications, and the thesis paper in the capstone Issues in PR course. The PR curriculum is structured this way for three reasons:

- to create opportunities for deep, meaningful learning throughout the students’ undergraduate PR education
- to enable the students to learn the value of grounding PR practice in theoretical underpinnings so they know how they can use the research in PR journals to find solutions, identify practice weaknesses, develop solutions and improve their practice
- to prepare students, should they so choose, for success in graduate school.

In preparing for the reading class in Research Methods, the authors focussed on addressing students’ understanding of the structure of articles, jargon, and statistics. We also wanted to reduce affect- and authority-related barriers to show students that articles weren’t perfect examples of scholarship that could not be criticised. For the activity, the instructor chose a brief article that included statistics and was open to question on some aspects of sample and conclusions. Students were provided with the citation and the link to the article in advance, and while some read it in advance, we built in time to read the article within the class.

The class started with a brief introduction to academic articles in the discipline of communications, including their intended audience, the basic structure, and the purpose of each part of the article. Students were also given a brief list of tips for more effective reading (available at <http://www2.mtroyal.ca/~mmacmillan/reading.html>). We also discussed different ways of annotating, and showed our heavily-annotated copies of the article which contrasted with the near-inviolable printouts some students brought with them.

Students were asked to read the abstract of the article and develop questions based on it. The librarian wrote the questions on the whiteboard. As a group, we read through the article, summarizing and discussing the roles of different sections. When answers to the students’ questions emerged, we added to them on the board, building the group’s understanding of the article. We discussed the statistics in more detail, including which ones were or were not important to understanding the article, and the drawbacks of the sample and methodology. Essentially, the authors modelled how they, as scholars would read the article, what they would check, inquire into, or let pass. We also modelled discussing the article, and dealing with differing interpretations. (Modelling scholarly reading is well supported in the literature: see for example Hodson, 2009, Elder, 2009, and Spires, 2003.) To encourage students to question authority, we were quite forthright about the impenetrability of scholarly writing in general, and shortcomings of the

article we were using in particular. We concluded with a broader discussion of the article, its aims and successes, and questions we would ask the authors.

Student comments indicated the session was helpful, that they understood the structure of articles better and that the tools might be useful in their future work. While the instructor and the librarian felt confident the exercise was valuable for the students, we had little beyond anecdotal evidence to support any notion of impact of the class. We had also focussed our attention on the areas we identified as being problematic for students based on our intuition, rather than on concrete information. To address these deficiencies, we decided to collaborate on a small research project to gain a better understanding of students' reading and use of academic articles.

Survey of senior students

Sample

The 47 students in the fall 2011 Strategic Communications were in their fourth year of the Bachelor of Communications - PR program and had participated in the session on reading scholarly articles in the Research Methods course during the fall of 2010. There was a high impetus for the students to participate and engage in this activity as the intervention was scheduled in advance of an extensive literature review assignment. This assignment had been problematic for some students in previous years, as many grappled with locating relevant articles, as well as reading, synthesizing and applying the articles to their client projects.

Instruments and Instructional Activity

The pre- and post-reading class instruments are available at <http://www2.mtroyal.ca/~mmacmillan/reading.html>. They use the TooFast platform (<http://toofast.ca>) and include qualitative questions on students' use of scholarly articles and a set of Knowledge Survey questions based on the work of Nuhfer and Kripp [2003], which examine respondents' perceptions of readiness to answer questions. We received approval from MRU's Human Research Ethics Board in spring of 2011.

In the fall of 2011, we ran the surveys and an accompanying activity in both sections of Strategic Communication with a total of 47 fourth-year PR students. Students were given a link to an article and an overview of the activity in advance. Each class began with a pre-activity test, comprised of qualitative questions and a knowledge survey test of how confident they felt in answering questions about specific aspects of the article. Students drew codenames to allow us to match pre- and post-activity responses, while maintaining anonymity. The students then discussed the article in groups, summarized the article in less than 140 characters and posted the summary to a Twitter discussion along with at least two questions they would ask the author. As these tweets were posted, the instructor and the librarian assessed the overall understanding of the article. Based on that, we had a discussion with the whole group around the aspects that prompted the most questions. After the discussion, students responded to the same knowledge survey as in the pre-session test, and two final, optional, open-ended qualitative questions where they could add comments based on the activity.

Results - Qualitative

Below is a summary of student responses to the questions illustrated with quotations from the data in italics.

Use: There were two strong undercurrents in the responses to two questions on usage; requirement and authority. Students used articles because to meet assignment requirements, confirming work in the literature (Robinson and Schlegl, 2004; Hampton-Reeves, Mashiter, Westaway, Lumsden, Hewertson and Hart, 2009; Tenopir, Wu, Zhou, McClanahan, Steele & Clewell, 2006). Regarding authority, students used articles to back up ideas because they were credible or authoritative.

1) How have you used scholarly articles in your academic practice?

Predominant reasons given were for assignments; also for backup of ideas, more in-depth information, and different points of view.

- *I have used many case studies and articles to aid my research papers and assignment. I also use them to support my ideas.*

2) **How would you use or have you used scholarly articles in your professional communications practice?**

Predominant responses included reinforcing ideas, for best practices and benchmarks, to add legitimacy, or as part of contributions to plans and projects.

- *I have used scholarly articles as a base for best practices and to know industry trends.*
- *I used to them to validate ideas that ran contradictory to my organization's.*

Changes: These two questions explored whether students saw their use of scholarly materials changing. A number of responses here indicated the benefits of the class on reading in the students' previous Research Methods course.

3) **Has your use of scholarly articles changed during your academic career? If so, how?**

Most students (35) indicated their skills had improved – using terms such as better, faster, more efficient. There were also some responses relating to affective dimensions.

- *I am not as intimidated by scholarly articles as I used to be... Also, I am able to scan articles faster to see if they will provide me with the information I need.*
- *I used to have a hard time understanding scholarly articles, so I often chose not to use them. After learning reading/highlighting techniques in Research Methods last year, I started using scholarly articles as secondary research more often.*

4) **What has prompted the changes?**

Responses here related to practice, familiarity, expectations, value, confidence, and assistance or instruction. Students develop skills through instruction but also on their own, in response to various demands.

- *Practice and desperation :) Also the librarian lectures in the first two years were very helpful.*
- *I realize they are a great source of information and give you as a practitioner more credibility.*
- *Increased confidence in using resources*

Aspects of articles: These two questions drilled down into more specific aspects of students' use of articles. Again, there were underlying threads around value and authority of articles.

5) **What aspects of reading and using scholarly articles do you find easy?**

There was a broad range of responses from finding to citing articles; many students commented on aspects of article structure as key to making articles more user-friendly.

- *Typically the articles have defined headings (intro, results etc.) which allow the reader to gain the knowledge they're looking for rather quickly. When the articles have a synopsis about the content that is also very helpful to determine the usability.*

6) **What aspects of reading and using scholarly articles do you find difficult?**

The researchers' instincts about jargon and statistics being the chief barriers to learning were confirmed here. There were also many comments about length and interest level. These difficulties have also been discussed by other studies [Budd, 2008; Hampton-Reeves, et al, 2009].

- *Understanding the academic language, as well the length of scholarly articles. I lose interest if the article is over 6 or 7 pages long.*
- *Articles with a lot of statistics or numbers are confusing because most of the "math" doesn't make sense to me.*

Aspects of reading: These questions were designed to uncover what students felt were the most important things to know about reading. The concept of authority showed up here too, but in different ways, as some students indicated they had begun to challenge the authority of articles. The strategies often matched those described in the literature (Bean, 2001; Hilden & Pressley, 2011; Mokhtari and Reichard, 2002; Hodson, 2009).

7) What do you know about reading and using scholarly articles now that you wish you'd known earlier?

Responses here included tips for reading and determinations of value and authority.

- *How to compartmentalize the facts, and how to read paragraph to paragraph and stop and paraphrase in your own words to prevent confusion and ensure that you are on the right track.*
- *That methodology is often flawed.*
- *How much more credible it makes your research.*

8) What tips about reading and using scholarly articles would you give students in earlier stages of their academic careers?

The responses here tended to focus on more technical aspects of reading, and there were also responses that noted the prior classes. Nine responses included the notion of reading articles more than once.

- *Read the article at least 3 times. Highlight key terms. Write all over the margins.*

Strategies: Students were asked to check which of several strategies they used in reading the article for the activity. The strategies listed were based on the content of the third-year session on reading articles. Interestingly, there was little correlation between the strategies they thought were important in other questions like #7 and #8, and the strategies they said they used. Of the options provided, printing the article (rather than reading online), skimming the article, highlighting, and reading actively were reported most (24-29 times). Annotating (12), marking terms to check later (9) and discussing the articles with others (14), were in the middle of the pack. Few students (1-3) reported developing questions based on the abstract, summarizing each paragraph, or conducting an imaginary discussion with the author.

The rest of the qualitative questions in both the pre- and post-class surveys elicited a range of tips and comments that in most cases amplified or echoed responses that had come up in other categories.

There were two very interesting themes in the post-class responses. Of the 15 students who provided comments, 10 noted the benefits of discussion. There was also a stronger note of questioning authority. The class activities were based around both small and large group discussion and a good part of the latter was focussed on questioning the article authors' choices of sample, and discussing the limitations of the article. Gillen (2006) offers some useful insights on what students need in order to question scholarly discourse (p.35).

- *Discussing it in a group was really helpful.*
- *Just because it's a published article doesn't mean the information cannot be further questioned by someone like myself.*

Results – Knowledge Survey

The questions in the Knowledge Survey asked the students to answer A= I don't know the answer, B= I know more than 50% of the answer or could find it easily, or C= I know the answer, to the following questions:

- Describe the author's central research question.
- List the main themes in the literature review.
- Describe the methods used to obtain data.
- Describe the sample population.
- Discuss the benefits and limitations of that sample in answering the researcher's questions.
- Describe the analysis of the results.
- Discuss whether the conclusion is or is not convincing, based on the analysis.
- Discuss the application of the information in the article to practice.

Students tended to rate their confidence in answering the 'describe' questions more highly than the 'discuss' questions, indicating perhaps that they were more sure of what the article said than what it meant, and less comfortable critiquing aspects of the research. Overall, student confidence levels increased from the pre- to the post-class survey. When the percentage of 'c' answers was matched to the strategies students claimed to have used, there were some interesting patterns. Those who annotated or discussed the article tend to have much higher percentages of 'c' responses in a number of categories, suggesting perhaps that these strategies have some impact on students' confidence in their understanding of the reading. Interpreting the Knowledge Survey data is somewhat problematic. In some cases, respondent's scores actually decreased after the activity, but whether that represents an actual decrease in confidence, or a more realistic view of competence we cannot know. Riegelman (1986) encountered similar issues [p.459]. Future iterations of this study will instead ask "did your understanding of x increase, decrease or stay the same."

Discussion and Conclusions

The impact of the session was also evident in the students' work. Following the 2011 intervention, the students appeared to have less difficulty with the literature review aspects of the assignment. Both authors received fewer inquiries about the assignment in advance of the due date; none of the assignments were returned to the students for additional research on the literature review, a frequent occurrence in previous years. The synthesis of information was more sophisticated, and the articles used by the students were more relevant to the PR practice related issues and opportunities.

The student responses to the survey confirmed many of our thoughts on the barriers to use (jargon, statistics, and length) and on reading strategies students thought were helpful, particularly printing, highlighting, annotating, and discussing articles. The number of responses related to the structure of articles affirmed our focus on teaching students more about how articles are put together. Overall, the study provided some reinforcement of the notions that a) students had difficulty reading and using academic articles, b) they acknowledge the need to use them for both academic and professional requirements, and c) their confidence and abilities seem to improve after instruction and practice in strategies to read more intentionally and effectively. Many student responses recalled information from the reading class a year previously, and a number of students explicitly noted the value of the session. This has led the librarian to work with other faculty in Communications to integrate classes in reading into more courses. In 2007, Joliffe noted "the talk about student reading is like the weather: Everybody complains about it, but nobody does anything about it" (p.470). Surely it's past time to change that. Collaborations between discipline faculty and librarians might be a place to start.

Acknowledgements

The authors would like to acknowledge the enthusiastic participation of students in the PR program, and the support of colleagues at Mount Royal University, particularly Becky Willson, Sally Haney and Michelle Sinotte who provided valuable feedback.

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