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Associated Canadian Theological Schools: Creating an Online Graduate Information Literacy Course Without a Roadmap

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Associated Canadian Theological Schools is a graduate seminary consortium affiliated with Trinity Western University. Since its beginning in 1988 it has had a required one credit research course as a prerequisite for all programs. Several factors demanded the creation of an online version of the course, but the literature on graduate level for-credit information literacy courses was sparse, and for online courses of this type was virtually non-existent. A process of trial and error since the online course's inception in 2000 has led to a maturing that now meets the desired criteria for education that is learner-focused and interactive, with a priority on skill development through assignments using student-selected topics. While the instructor workload to maintain and grade the course is onerous, it is achieving its desired ends.

Information literacy, online credit courses, graduate information literacy, Associated Canadian Theological Schools

LITERATURE REVIEW

While there is an extensive literature on undergraduate information literacy, the literature regarding graduate students is much smaller. Fewer still are discussions of graduate information literacy credit courses, and scholarly materials on online versions of such courses are virtually non-existent, The neglect of graduate level instruction in this field was seen as early as 1976 when *College & Research Libraries* produced a series of studies looking at the problem in several academic library settings (Dunlap, 1976; Lipow, 1976; Michalak, 1976; Smith, 1976). Since that time, studies showing both the need for and responses to graduate information literacy have appeared slowly and sporadically.

Simon (Simon, 1995) in a study of 72 graduate students at Wayne State University found that these subjects overestimated their research abilities, were unfamiliar with the library's databases, used inconsistent research strategies, did not see the need for a well-defined problem statement with a narrow focus, used inappropriate search terminology, rarely tried sophisticated searches available to them, and used very few of the wide variety of library resources available to them. User surveys of graduate and professional students at the University of Iowa led to similar results (Washington-Hoagland & Clougherty, 2002). Perrett (Perrett, 2004) found in a study of graduate students at Australian National University that fewer than half understood Boolean searching, the subjects scored an average of 3.3 out of 6 on a test of web-searching skills, and 57% over-estimated their web-searching skills. While Brown (Brown, 1999) in her study of graduate students at University of

Oklahoma found that the subjects "exhibited a high degree of information literacy" (p. 435), the study was flawed by small sample size (N=36) and reliance only on student self-reporting, a risky method when other studies consistently show that students over-estimate their abilities.

It is now recognized that the rise of electronic resources, both search tools and content, have made the graduate research task even more complex, thus demanding information literacy instruction of a much higher order 321 (Jacobs, Rosenfeld, & Haber, 2003). Barry (Barry, 1997) has argued: "The increased complexity of information skills required by the electronic information world means that training can no longer be achieved as a simple one-off event" (p. 228). Yet faculty consistently assume that graduate students learn research skills on their own, despite the growing evidence that they often do not 233, 107 (Barry, 1997; Murry, McKee, & Hammons, 1997)

As programs have emerged to meet the needs of graduate student information literacy, they have taken several forms. Beyond the standard tutorials and seminars, some institutions have injected information literacy instruction through the curriculum (Jacobs et al., 2003; Murry et al., 1997). Other institutions have assigned librarians to graduate student supervision teams (Macauley & Addie, 1999; Robertson, 2003). Credit course offerings are a growing phenomenon (Buchanan, Luck, & Jones, 2002; Lindsay, 2004; Tobin, 2004).

At the graduate level, it has been determined that students taking information literacy instruction prefer integrating their assignment work with their own projects (Turnbull, Frost, & Foxlee, 2003) and that they value face to face interaction with their information literacy instructors (Turnbull et al., 2003; Washington-Hoagland & Clougherty, 2002). Thus, whatever may be done to provide online instruction must keep these needs in mind.

While online information literacy instruction is much more developed at the undergraduate level than the graduate, research in the undergraduate field is still instructive at the graduate level. A universally asserted principle is that web-based information literacy courses need to be different from their classroom counterparts and other kinds of distance education offerings in more traditional formats. Interactivity and skill development are key. Ascough (Ascough, 2002) suggests that a course that major on uploading information "simply will not work online. Indeed, it becomes nothing more than a print-level correspondence course, at best, an expensive one at that." (p. 18. This view is echoed by (N. Dewald, Scholz-Crane, Booth, & Levine, 2000; N. H. Dewald, 1999a; Drew, Abbott, & Orr, ; Hricko, 2001). Turnbull (Turnbull et al., 2003) argues for a "contrucitvist approach (active, independent learning and problem solving) rather than didactic transmission of content that supports surface, rather than deep, learning. Templeton-Kluit (Tempelman-Kluit, 2006) supports the use of Critical Load Theory, which seeks to minimize load on working memory by eliminating all information not crucial to the task at hand and to build long-term memory through well-structured learning tasks.

Graduate students reported that they preferred their information literacy instruction to be relevant to the academic work they were doing (Turnbull et al., 2003). Orr (Orr & Wallin, 2001) and Drew (Drew et al.,) show evidence that relevance-based instruction is a much more effective method than the cheaper generic models.

The literature abounds with calls to make online information literacy more than the teaching of library skills. Tobin (Tobin, 2004) points out that students often view their assignments too narrowly as finding sources to meet course requirements, while the goal of the instruction needs to be the creation of lifelong information skills. Dewald (N. H. Dewald, 1999b) sees instruction as needing to teach "concepts, not merely mechanics" (p. 27). Orr (Orr & Wallin, 2001) argues that information literacy is "a way of thinking and reasoning about aspects of subject matter" (p. 193). The requirement to provide broader conceptual frameworks and theory, while at the same time not being too didactic, is particularly challenging in an online environment.

The effort required to provide online information literacy instruction is intense. Tobin (Tobin, 2004) points out the universal experience of enhanced workload, as opposed to their live counterparts, in creating and running online courses. Manuel (Manuel, 2001) reported that the time spent in "broader support" of students was unexpected and that the expectations of students in an online environment to have 24/7 support put a strain on library services (p.225). This writer can attest to the fact that students generally expect a response time of 24 hours or considerably less when then contact the professor regarding a problem they are experiencing.

It is also clear that not all students are suited to an online environment that requires what Linn refers to as "autonomous stance toward learning." (Linn, 1996) The locus of responsibility for and control of success needs to move from the instructor to the student if success is to be achieved 226 (Manuel, 2001). Walsh (WALSH, 2002) lists several student issues that become barriers to learning, including time management, computer skills, and underestimating the amount of work required to complete assignments. Lindsay (Lindsay, 2004) argues that students who have trouble processing text-based information without the support of audio (as in the live classroom) will not do well in online learning. Taking an online course, even when student interaction and collaboration is fostered, can be a lonely prospect 222 (Manuel, 2001) and, in this writer's experience, students who express a preference for a live class over an online one often cite the desire to be learning along with other people rather than being isolated.

ASSOCIATED CANADIAN THEOLOGICAL SCHOOLS

Associated Canadian Theological Schools (ACTS) is a seminary consortium that began in 1988 and serves about 500 students. It is a graduate division of Trinity Western University, Langley, British Columbia, Canada, a private liberal arts university with a student population of 3500. ACTS provides education at masters level for pastors, counselors, missionaries and Bible translators. Though the educational outcomes may be seen as practice-oriented, the programs are rigorous and demand sophisticated research papers. The literature of disciplines such as biblical studies, theology and church history are both scholarly and sophisticated, with a number of key journals tracing their histories to the Nineteenth Century.

In 1986, concerned about gaps in the research skills of a seminary that was to become a founding member of ACTS, I initiated, with the support of the academic dean, a one-credit course entitled Research Strategies. When ACTS was formed in 1988, the course became a required for credit prerequisite in all programs. It continued only as a live offering until the late 1990s when the widespread use of the Worldwide Web and circumstances in the consortium made it necessary to consider an alternate form of delivery.

The enrollment in ACTS was growing, a number of students expressed the hope that they could take the research course before they arrived on campus for their first semester, and several programs were making use of modular courses which involved students being on campus for only a week or two at a time. Offering an online version of the course became a priority. Thus Research Strategies, the online course, had its first student intake in the summer of 2000 and has since seen just under 400 students complete it successfully.

CHALLENGES

Several issues presented challenges to this form of delivery. First, the institution had no existing online courses, no courseware platform, and few with the expertise to create the web presence needed. I began, in fact, with the assistance of two students who took my ideas and documentation and mounted them on a website that initially was password protected. This was less than ideal, because it took too long to get revisions made, and because I had little control over format and layout. After a year with this arrangement I began writing the web pages for the course myself, still without the use of professional courseware. When courseware did become available it proved to be too restrictive, and thus the course remains on the open Web, visible to all (W. B. Badke,), though students must register and complete assignments in order to receive credit.

Second, our own library databases were not yet freely enough available through the Web to make it practical to have the course be done entirely online. For the first three years, students chose one of two versions of the online course – a preferred hybrid in which reference sources and electronic journal databases had to be accessed within the library building (though the catalog was available online) and a less preferred totally web-based version that used reference tools and journal indexes (such as Ingenta) that were available through the Internet. Once our databases became more accessible, the distinction between the two versions of the course disappeared, though students are still encouraged to use print reference sources, which tend to be deeper and more scholarly than Web-based reference.

Third, the medium of the WWW made it imperative not simply to translate the existing live course directly into online format nor merely push content at the students. It had been the nature of the live course to seek to simulate the construction of a research project, requiring numerous assignments at each stage of the process. Students would generally choose a topic for which they were preparing a research paper in another course, both to build relevance and to avoid a lot of duplication of effort. While much of the flavor of the live course could be reproduced online, the live discussions and particularly the live demonstrations of research question design and database searching could not be replicated. To compensate, there would need to be significant opportunity to link to teaching resources (such as animated tutorials) as well as written guidance to the use of databases. At the same time, providing a lot of flat written content was not desirable, because it does not work well pedagogically in an online environment. The course textbook (W. B. Badke, 2004) provided a print-based information source that did not have to be read online and could thus avoid information overload on the screen.

Fourth, the lack of face to face instruction, which in the live class was done with the benefit of computer projection and numerous demonstration of actual databases, made it important to provide sufficient opportunity for online students to practice their research skills. The number of topics that students needed to deal with was increased from one to two. While the total number of assignments decreased from 10 in the live class to 6 in the online, the assignments were more comprehensive, calling for a great deal of hands on research. Animated tutorials of significant databases were developed. Students who were nearby were encouraged to drop in for personal instruction if they run into problems. Those farther away were instructed by phone or e-mail. As the library moves more deeply into virtual reference, push technology will be available that will enable co-browsing.

Fifth, the nature of grading needed to be revised. Beyond the fact that I had to get used to monitoring e-mails from anxious students at odd hours, and that students needed their assignments graded within a zero to 24 hour timeframe, the actual grading had to be at a higher level than I was accustomed to doing in the live course, because there was limited opportunity to go over common problems with the class as a whole. The course is strongly skills-based, requiring a grading process that troubleshoots research questions, search strategies and bibliographies in such a way that students are led away from simplistic or just wrong approaches toward sophistication. Easier grading methods using multiple choice and short answer were attractive but not practical, because each student was working on his or her own topic areas.

Sixth, there was a concern that students would need to have a forum for interaction with one another. This, however, proved not to be an issue. Early attempts to have students converse with one another were met with indifference or outright resistance, because each student was working in different topic areas, thus limiting their commonality as members of a class. What was much more important to them

was a clear pipeline to the instructor so that problems could be dealt with in a timely fashion and so they could receive both encouragement and feedback as soon as possible after they submitted work.

Seventh, there was a need to ensure that students had actually acquired the knowledge and skills intended in the course. This could be done through evaluation of assignments, but I found it important to establish a minimal benchmark for student work. If a student did not achieve that benchmark in an assignment, the work was returned with comments, and the student would have to re-submit.

COURSE PHILOSOPHY

"Information literacy" has, in many ways, become a term with uncertain meaning despite the many definitions and standards documents that have been created. For a large proportion of information literacy librarians, instruction for credit is simply not an option and the primary activity is the one-shot generic or subject-specific teaching session, usually lasting no more than an hour.

Given that the Research Strategies course is offered for credit, it needs to be more than library skills or even instruction in the proper use of databases. In this regard, standards statements like that of ACRL are not entirely adequate because they are so strongly skills based. Credit instruction requires a larger philosophy related to the understanding of information and information systems within the context of human intellectual activity. The subject matter is information itself, and students taking a credit information course need to be able to locate their research methodology and specific skills within the context of the production, dissemination, evaluation and ethical use of information. This is a tall order in an online research course.

In the case of Research Strategies, I developed a textbook that deals with at least a portion of the broader knowledge base required ((W. B. Badke, 2004). More recently I have added an online introductory chapter that considers the history and current state of the information process (W. B. Badke,). Throughout the course, students are evaluated, not just on their ability to use the tools of research, but on their intelligent use of the information sources available to them. This entails choosing the right tools for the task, determining the relevance and quality of the information they acquire, and being able to identify further information sources that will fill gaps in their research. Thus there is constantly a context in mind that encompasses not only their topics and research questions but the world of information in which they are working.

The course is, however, also built strongly on strategies that follow chronologically on the research process itself. While students may not use all of the taught strategies in any one research project, the intent is to present students with an arsenal of options available to them if needed. The chronology of the research process enables them to comprehend the demands of research from beginning to end, rather than simply having a set of skills without a guiding structure within which those skills can operate. Such a chronology, of course, may not truly mimic the actual research process, in which the progress may be more cyclical or convoluted, but students need to begin with a process they can learn and then adapt it to their own purposes.

STRUCTURE OF THE RESEARCH STRATEGIES COURSE

The course is structured in six modules, each with required reading from the print textbook, a short online backgrounder that summarizes the most significant points of knowledge required, and a detailed

set of procedures to follow. There is as well, for each assignment, an assignment template that enables students to complete their work without missing any steps. Thus the course is simple and straightforward in its navigation, and the assignment questions are relatively self-explanatory, even for the many international students who take the course.

A look at each of the assignments will clarify the nature of the course as a whole:

Assignment #1

The focus of the first assignment is in developing a working knowledge of the two topics, developing several questions related to them, choosing one for each topic as that topic's preliminary research question, and developing a preliminary outline. Students are directed to reference sources (print still preferred) for their working knowledge, and they are asked to summarize the key features of each topic. The concept of "research question" in this course is based on the idea that a research project is a problem-solving/issue-addressing task rather than an exercise in gathering and synthesizing existing information.

The grading process involves helping students to identify good (useful) questions and distinguishing them from questions that merely seek existing information, are easily answered, or, alternatively, are beyond the reach of current evidence (the "How many angels can dance on the head of a pin," type of question).   They are also asked to develop preliminary outlines, not so that they can structure their papers fully before the main research is done, but so that they can set an agenda for what they need to cover in order to answer the question. In this, the grading seeks to ensure that the outline actually matches the research question and is comprehensive enough to address its demands fully.

Assignment #2

The second assignment recognizes the value of the Internet in providing initial information and thus asks students to do search engine search related to their research questions and to evaluate the sites they choose for bias and reliability. At this early stage, evaluation is often weak. A later assignment will address the evaluation issue more fully.

The balance of the assignment deals with keywords and controlled vocabularies (in this case subject headings) in the search process. Using the library OPAC, students do searches related to their research questions using title keyword and subject heading functions. Here the role of professor evaluation of assignments is crucial. Most students understand keywords reasonably well (though they use them in inconsistent ways) but few grasp the meaning and importance of controlled vocabularies. Up to one-third of these assignments have been returned for revision of the subject heading searches. The concepts of Boolean searching and controlled vocabularies are crucial in today's technological searching environment, so the second assignment becomes a sort of bellwether for student success in the rest of the course.

Assignment #3

The third assignment introduces journal databases and calls upon students to select appropriate indexes and terminology in order to produce lists of journal articles related to their research questions. This would seem to be a rather mechanical exercise, but students are told to use advanced features of their databases, thus demanding application of the principles of search taught through the second assignment. Students are required to "read" databases that may be unfamiliar to them in order to determine what they can do and how they do it. Animated tutorials to the more common tools are provided so that students have at least an approximation of the demonstrations done in the live version of the course (for example (W. B. Badke,)

Assignment #4

Before the Fall of 2006, the first part of this assignment involved selecting one more journal database for each topic and doing more searches. But with the growing use of open web academic search tools, students are now told to try searches related to their two research questions in both Google Scholar and Windows Live Academic. Hopefully this exercise will build an appreciation for the sophistication of proprietary journal databases, but it will also demonstrate both the strengths and limitations of these resources for research.

The balance of the assignment calls for searches in ERIC, an often neglected resource. Students are told that, if their topics are not relevant to ERIC, they should choose topics that are so that they can get experience with this resource.

Assignment #5

The fifth assignment has always involved evaluation of resources but it has evolved over the years from evaluation of a set article to evaluation of an article chosen from a selection of three to its current form. Now the first part of the assignment involves using a number of "hidden Internet databases" (such as The Association of Religion Data Archives) in a discovery/evaluation exercise. The second part asks students to evaluate a number of websites for reliability or usefulness of information. This part of the assignment has been instructive. One website provided is very sophisticated graphically but supports theological ideas far from positions held by any of our students. Yet students are often more swayed by the graphics than by the content and conclude that the site is congruent with their faith traditions. For this assignment in particular, the feedback of the professor is crucial to the learning process.

Assignment #6

The final assignment consolidates each of research topics that students have been developing through the course. While the live class, in which students have only one topic, asks for a completed research paper at the end, the online environment makes completing a full paper difficult. Thus, for each of the two topics, the student is asked to provide a final research question and an expanded outline with commentary related to the content of each heading, along with extensive bibliographies of the best materials gathered during the course. This assignment helps students to see how the various parts of the research process finally come together, and it provides a good means of assessing student progress.

LESSONS LEARNED

Design is crucial

Students taking online courses are often anxious about their ability (or lack of ability) to understand the instructions in the course and complete the assignments to meet course requirements. Some are not sure they know how to find the course, let alone navigate through it. Through a process of trial and error the following principles were followed to enable students to assimilate the information needed and to navigate with ease around the site:
  · A minimum of instructional information was placed on the site itself. Most information was provided through the print textbook.
  · Each assignment came with a backgrounder that summarized only the information most needed in order to complete the particular assignment. This included links to other helpful websites and

tutorials.
· The assignments themselves were provided in point form, and students are instructed to complete the assignments point by point.
· When it was discovered that students were missing portions of assignments, an online assignment template was created. Students can copy and paste the template into a word processor program and build their submissions around a pre-set outline that works nor matter what topic they are using.
· While not as pretty as might be hoped, all navigation bars were placed at the tops of pages so that students could instantly go from one part of the course website to another. This was one advantage in using a website rather than courseware – navigation paths could be controlled by the professor.
· At all points, clear language was used. If it was determined that students were misunderstanding an assignment, the wording was revised. The principle was to present as few barriers to understanding as possible.

The professor is the student's lifeline

The online environment creates its own distance between professor and student, even if they are not separated by many miles geographically. Students must understand that they can easily approach the professor with and get a friendly response in a timely manner. Most interaction with students in the history of the Research Strategies course has been by e-mail, which has demanded that e-mail be monitored every day, through the day and into the evening. The "quick" nature of online instruction means that students should never have to wait for more than 24 hours for a response to a problem and that assignments should be graded within 48 hours.

This, of course, places new pressures on the online professor, but the alternative is a high drop-out rate. The student depends on the professor to be an enabler. Often, when a problem is encountered, the student has to stop work until an answer comes. To make that student wait a week is virtually to guarantee difficulty in completing the course. Being friendly, utterly accessible, and very helpful is the key to online instruction success. In my experience, few students abuse the opportunity.

Practice and interactivity make perfect (or nearly so)

Early in the development of the live class, it became clear that students only appropriate good information literacy understanding and skills by doing a lot of real research. Relevance was provided in the course by allowing students to choose topics for papers they were doing in other courses, but relevance was not enough. There had to be a significant number of assignments to enable students to perfect their skills. While there are some complaints about the workload in this course (especially those who lack initial skills and thus must work even harder), but most who take it agree in the end that learning by doing is the only method that can hope to bring them success.

The online environment, in fact, is ideal for this kind of learning. Instead of loading students with "flat" information, we can guide them through links to the actual research environment in which they will be doing their work. The course site can thus be highly interactive, fostering the "learning by doing" ethos that is foundational to information literacy instruction.

Online does not have to mean impersonal.

By choice, students in Research Strategies have not sought to develop communities through forums,

chat, and so on. Each is working on a different set of topics and is intent on getting through the course with as little blood-letting as possible. But there is still a personal element. Some students drop in for a visit or telephone. Even those who only work through the medium of e-mail seek to personalize their interactions with me. In my own responses to their work, I try to provide encouragement and inject enough of my personality that they feel a conversation is going on. While not easy, the avoidance of impersonality is a key element in online instruction success.

Not everyone should take an online class.

Most students who take the online research class complete it successfully. The dropout/failure rate is on the order of 5%. But there are some students who will do much better in a live class. Their characteristics are:
· A moderate to severe problem with procrastination
· Struggles with processing information when it is only in print form and not linked to input from another sense (e.g. hearing)
· A tendency to need a lot of personal guidance in every step of the course process (lack of autonomy in learning)
· Tendencies to discouragement and loneliness that lead to delay in finishing assignments or even to dropout
· Very limited initial research and/or computing skills
· Lack of experience with Western education models and libraries (i.e. many international students)

Just when you think all is well, you have to re-educate your administration and faculty.

The information literacy course has been a required prerequisite in this institution since 1988, and the online version of it since 2000. Faculty have expressed their appreciation of its results and have even set their own prerequisites – "Don't enroll in my course until your have take or are currently taking Research Strategies."

Yet, in the spring of 2006, in a well-meaning attempt to provide a backup professor for the growing number of offerings of this course, academic administration appointed a non-librarian, non-professor to teach a section of the live version of the course. This raised doubts about adminstration's (and faculty's) understanding of the nature of Research Strategies, both live and online. An opportunity to present the course at a faculty meeting has led to a deepened appreciation of it and of the qualifications required to teach it.

CONCLUSIONS

Overall RES 500 OL (Research Strategies) continues to be a success, praised by students once they have completed it, and still respected by the rest of faculty. It would have been useful to have built upon the work of others in constructing the course, but trial and error has produced a similar result. More assessment of outcomes is needed, though the assignments themselves measure student progress quite well. Students attest to the value of the course in opening their eyes to the world of information, developing research skills, learning how to use databases in a sophisticated way, and helping their progress through their programs not to be the challenge that it might have been.

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