

# International Students and the Academic Library: A Case Study

# Les étudiants étrangers et la bibliothèque universitaire : une étude de cas

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**Résumé :** Cet article présente une étude pilote qui a examiné les expériences des étudiants chinois de 3<sup>e</sup> cycle qui utilisent les bibliothèques universitaires de l'Université d'Alberta. Les résultats mettent en relief les défis auxquels les étudiants sont confrontés lors de l'utilisation d'une langue seconde et des technologies offertes par les bibliothèques, et s'attardent sur les compétences en culture de l'information des étudiants.

**Abstract:** This paper presents a pilot study that examined the experiences of Chinese graduate students in using the University of Alberta Libraries. The findings outline the challenges faced by students when working in a second language and navigating library technologies, with a focus on the students' information literacy skills.

## Introduction

Current research indicates that international students, particularly those for whom English is a second language, experience difficulties using academic libraries. Although some research has been done in the American context (e.g., Allen 1993; Kumar and Suresh 2000; Natowitz 1995), few studies focus on Canadian institutions, despite ever-increasing numbers of international students. At the University of Alberta, Chinese international graduate students represent the largest non-Canadian student population on campus and constitute over 11 per cent of all graduate students (University of Alberta 2005a, 2005b). In addition to mastering the English language, Chinese students must also become familiar with educational and academic library systems that are very different from those of their home country. For example, many libraries in China continue to have closed library stacks, so students' experiences with library collections are quite different from those of individuals studying in North America.

As Canadian and American libraries are designed for user-driven searching (e.g., computer databases, open stacks, etc.), the demands on graduate students to master library processes is vital to academic success. For this reason, information literacy programs have seen a revival in the last few decades in both the United States and Canada (see Kilcullen 1998). However, at the University of Alberta (UofA) there are no information literacy programs designed specifically for international students, let alone programs designed to bridge the gaps between the Canadian library experience and those of other countries.

This paper reports the results of a pilot study that examined the experiences of graduate students from China when using the UofA Libraries. This study also focused on students' information literacy skills by examining these students' information behaviours in the context of the Association of College and Research Libraries' (2000) Information Literacy Competency Standards for Higher Education (ACRL's Standards). The paper concludes with recommendations for librarians to connect with Chinese international graduate students and tailor academic library services (including information literacy sessions) to their needs.

### **Review of related literature**

International students represent a small but rapidly growing minority in North American academic institutes. As Curry and Copeman (2005) note, statistics from the National Center for Education Statistics show that 547,867 international students were enrolled in American institutions in the 2000–1 academic year, with another 76,210 enrolled in Canada (409–10). Other studies note that increasing numbers of these students originate “from a wide range of non-Western cultures” (Moeckel and Presnell 1995, 310), with the majority from Asian countries (Curry and Copema; Howard 1995). A large number of studies examine international students' experiences in academic libraries; however, most studies were completed in the 1980s and early 1990s, with few original studies published in recent years. Many published papers review the work of earlier scholars, but do not present new, original findings regarding international students' concerns (see, for example, Baron and Strout-Dapaz 2001; Kumar and Suresh 2000; Natowitz 1995).

Furthermore, there is the issue of transferability from the American setting to Canada. A review of the current research shows two Canadian

studies that examine how academic libraries are meeting international students' needs (Curry and Copeman 2005; Howard 1995). Others explore multiculturalism and immigrants in Canadian public libraries (Kim 2004; Mylopoulos 2004; Nilsen 2004; Nilsen and Yu 2004). More research in this area is needed, especially given the diversity and increasing numbers of international students on Canadian university campuses.

### *Language and cultural barriers*

In the published results from one library project with Chinese students, Lopez (1983) found that international students could read and write English well, but because they were not accustomed to hearing or speaking it, they had difficulty competently conversing in English. These results were confirmed by a later study by Liu (1993). Although most international students must pass the Test of English as a Foreign Language (TOEFL) to attend North American academic institutions, many of these students "still lack adequate English vocabulary, including library terminology" (Liu, 27). Moeckel and Presnell (1995) estimated that international students have only half of the reading comprehension required and less than half of required oral comprehension. This inadequacy was especially prominent in students who learned only written English and had little or no opportunity to converse in English (Hendricks 1991; Liestman 2000). In the United Kingdom, Howze and Moore (2003) conducted a field test of a multilingual glossary of terms related to the use of library-based technology with 153 students for whom English was not their native language. The researchers found that many students lacked the English-language skills required to fully comprehend each term's meaning, and the students felt that such a glossary would be helpful to understanding library terminology.

Cultural differences can also adversely affect international students' ability to develop information literacy skills. The North American library itself may be a source of confusion. International students from non-Western cultures are seldom used to open stacks, easily accessible books, and helpful, trained librarians; their home country libraries may resemble North American study halls or book repositories (Helms 1995; Hendricks 1991; Liu 1993; Martin 1994; Moeckel and Presnell 1995). Several scholars also report a lack of knowledge about card catalogues, North American classification systems, abstracts, indexes, journals, subject headings, and other organizational systems (Hendricks; Liu; Macdonald and Sarkodie-Mensah 1988; Roberts 1987). In addition, students may come from educational

systems where they are expected to listen to lectures, memorize information, and be able to recall and restate it coherently (Macdonald and Sarkodie-Mensah; Martin; Roberts). These students may not be accustomed to writing papers by doing independent research and exploring new ideas, and thus may lack the critical thinking and evaluation skills that are integral to information literacy (Feldman 1989; Moeckel and Presnell).

Technology in the library is also daunting for some international students. Recent studies show that international students are less aware of such library resources as databases and more likely to use Google as a primary resource than domestic students (Song 2004). However, studies also show that undergraduate and graduate students in China are accessing the Internet for scholarly information, demonstrating that students who have recently graduated in that country should be comfortable seeking electronic scholarly information (Dong 2003; Liu and Huang 2005).

### *Information literacy*

In 1998, Kilcullen encouraged librarians to learn how to teach effective instructional programs, and her focus was users' needs: "Good library instruction should be patron-oriented, begin with patron needs, and concentrate on the learning process rather than library 'tools.' Library instruction should remain flexible and should be evaluated. Our practice will be determined by an assessment of the users, not by library need" (10). Since the late 1990s, information literacy has seen a resurgence across North America. In Canada, such authors as Whitehead and Quinlan (2003) and Julien and Boon (2003) stress the importance of information literacy and give evidence that it is beneficial to students' academic success. Unfortunately, these articles do not consider the specific information literacy needs of international students. In order to bridge this gap, this project was designed (in part) to explore the five ACRL Standards (2000) with respect to Chinese international students' strategies for completing their academic work. The Information Literacy Standards note that the information-literate student:

1. Determines the nature and extent of the information needed
2. Accesses needed information effectively and efficiently
3. Evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system
4. Uses information effectively to accomplish a specific purpose

5. Understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally

In this paper, the most salient findings across these five standards are discussed, following an exploration of common themes that emerged from the interview data. First, the section that follows provides details on the design of this project.

### **Research design**

In-depth, qualitative interviews were conducted with nine graduate students (in both master's and PhD programs) who were from China, had completed undergraduate work in their home country, and were studying at a Canadian university for the first time. Participants were recruited with posters at campus locations, via email sent to a listserv of Chinese students, and by word of mouth. The interviews were recorded using audio-tapes and digital audio, and lasted between forty-five and seventy minutes. Several questions were prepared in advance about the students' educational backgrounds, English-language training, and library and technology-related experiences in China and in Canada. In addition, a number of questions were designed to address the ACRL's Standards (2000) in the context of these students' information-seeking behaviours and their evaluation of the library's digital systems. A number of visual aids (a library book; a journal; a print copy of an e-journal; and screen shots of the UofA Libraries' main website, the catalogue, and Google) were used to facilitate the discussion of resources and searching strategies that the students discussed. The interviews were fully transcribed and coded using a grounded theory approach designed to identify common themes as they emerged from the data; the Information Literacy Standards were also used as a point of comparison to analyse students' discussions of their information-searching strategies.

### **Findings**

#### *English language skills*

Nearly all participants began English studies in China in Grade 6. Only one participant (Helen)<sup>1</sup> did not learn English until university, but she then studied English for seven years throughout her undergraduate and

graduate degrees. The participants studied English mainly from textbooks, memorizing English words and grammar, and practising reading and writing. Most had to pass an English exam to get into university in China, and two participants also had to pass another test to graduate (although this was only a small part of the test, and one student mentioned selecting multiple choice options at random on this test). Most of the participants had not practised speaking or listening to English in class while in China, and only a few were tested on their English listening comprehension. As part of the admissions process at the UofA, however, all were also required to pass a test of English as a foreign language (e.g., TOEFL).

Two of the participants were recent graduates from China. Anna (a PhD student in mathematics) had learned to speak and listen to English in university, and her English was the best of all the participants interviewed. However, Dan (completing a master's) had not been taught to speak and listen to English in China, and he recalled struggling with language in his first months at the UofA. Dan's initial classroom survival strategy was to record lectures, as he could not understand his professors on first hearing the material. Luckily, his department (chemistry) required language classes for their international students so, today, he is comfortable speaking and listening to English.

All but a few of the participants felt overwhelmed when they arrived in Canada, and many had overestimated their English-language skills. They could read and write English without difficulty, and a few had opportunities to converse in English while living in China. However, these experiences did not prepare them well for speaking English in Canada. Helen, a PhD student in mining engineering, noted one significant difference in speaking English in Canada:

In China, even though I work in a foreign company, [English speakers] know you are Chinese, so they usually speak very slowly and very easy to understand. And here, nobody think you are foreigner, they just think, oh, we are all the same. So you should understand what I'm saying.<sup>2</sup>

Ben (a master's student in geotechnical engineering), echoed Dan's concerns with understanding his English-speaking professors. Here, he notes that even understanding basic course information (such as due dates for assignments) can be a challenge:

When people speak English I don't know what they are talking about. Especially for the first two months, ah, I feel fazed. I just cannot understand the words the

professor was talking about. I don't know what date is the due date for my assignment.

Several of the participants took English-as-a-Second-Language (ESL) classes or high school classes in Canada before they started university; however, the first few months of their graduate programs were still a challenge. Those who were struggling with oral comprehension missed a lot of valuable information during their library orientation sessions, which were held the first week of the semester. Anna, Helen, Dan, and Jen went to the general orientation for all students, but only Anna believed that it was a useful session and asked the librarians additional questions. Despite her positive feelings about the lecture, it is unclear just how much she retained from it, since she was one of the interviewees who also reported never using the library's databases or e-journals for her academic work. The other participants who attended orientation but found it to be less than helpful noted that there was too much information presented and they could not understand what the librarian was saying. Although Dan had not yet had English training at the time, Helen and Jen had been living in Canada for two years and had completed ESL and high school classes in English; Jen had obtained her high school diploma in Ontario. Of all these participants, only Jen had taken an additional information literacy session when her professor explained that librarians could help with academic work and arranged for librarians to come to class. For the other three interviewees, the language barrier had a negative impact on their library use, their library-related information literacy skills, or their understanding of the librarian's role.

#### *Previous library experience*

Most participants had received undergraduate or graduate degrees in China between 1994 and 1997; one had graduated in the late 1980s, and two were recent graduates, completing in 2004. The majority, then, were also returning to school after approximately ten years. Three participants had only experienced closed library stacks, and two had used a mix of open and closed stacks. Card catalogues were common; where computer catalogues were used, these were not online. Interviewees would typically find books in the card catalogue, go to a separate room to review abstracts to help them determine if the book was relevant, and then submit a written request for the book from the library staff (who retrieved the item from the closed stacks). The interviewees described the library staff as the "keepers of the books," guarding the materials from the students. Only two

participants described the librarians in China in positive terms, noting that they would help students learn about the library or find books. Jen (a PhD student in educational policy studies), provided this description:

When I was in China I think all librarian is just, you know, the person who guards the book. Or counts the book. So ... I don't think they are professional, they are just somebody who work with book or fix the book.

A few participants also noted that the library staff in China were not helpful because of their lack of education – usually having only a high school diploma or some college training. As Helen noted,

In China, I think they have to know their area, what kind of books they have. And what's the demand, the most of the students need. Actually, they have to improve this area, because the most time, you know, the librarian, in China, they just graduate from high school or from college. They have not that much knowledges about the area they manages.

Carl (also a PhD student in mining engineering) echoed Helen's concerns:

Yeah, [librarians in China] help us, in that work. Yeah you can get kind of [help] from them. Sometimes it not useful there, because normally you're looking for some very technical thing, they don't know much about that. So normally they can't help.

Despite the participants' positive comments about librarians at the UofA, their actual interactions with librarians showed a lack of understanding about librarians' roles. Many participants came to Canada, for example, expecting that librarians would help them to locate books once they found the call number, as this was their experience in China. Dan had attended a university in China that was comparable to the UofA and he described the staff as doing similar tasks at both institutions. He said that the librarians at the UofA are nice, but his only interaction with a librarian was to email a request for a password. When asked if he would seek help for other information-related activities (such as help using a library database) Dan was visibly surprised that librarians could do this. He noted that he would typically turn to colleagues for this type of help:

I think [librarians] can tell us about this, but I'm not really sure. Umm, for doing research sometimes I will discuss this topic with my colleagues in my labs. So ... maybe next time I will go to ask a librarian.

Carl felt that librarians could not help with his research because the field was too specific. He thought that librarians could probably help with



mathematics or other types of engineering, but only individuals working in his specific field could understand the information he needed.

Ian, a visiting PhD student in chemical and material engineering, had approached librarians for help when first using the library system, as his late arrival in Canada meant that he missed library orientation. He was impressed with how much time the librarians spent with him, and how nice and patient they were. Even so, since that first interaction, he would approach them for help only as a last resort because he didn't want to bother them:

I never go to see the librarian first. Almost like [if] I really have no idea how to figure this out, okay I need to turn to the librarians, yeah. [But] I don't know how can I ask them "okay, I need some orientation, could you show me?" That's my problem, not their problem ... I don't want to use their time to tell me this.

Ian was not the only participant who believed librarians should not be "bothered." When Fred audited a class at a university in Ontario, he said that at first he was following the library rules in China: if he could not find something, that was his problem, not the library's problem. Over time, he learned that Canadian library staff were very nice and helpful, and more than willing to help him with his work, but he was still unsure about interrupting them to ask questions.

Overall, those participants who had completed a library session arranged by their professors or academic supervisors retained much more information than those who completed the general orientation during the first week of classes. These targeted sessions were more in-depth and aimed at the participants' areas of research. A few interviewees said that they met the librarians twice – either for two different sessions, or for a lecture and then a tour; these individuals spoke much more positively about their library experience than those who attended only the general orientation session.

#### *ACRL's information literacy competency standards for higher education*

Participants were also asked questions about their assignments and information search processes, in order to compare their strategies with the current standards on information literacy. They talked about the initial steps they took after receiving an assignment or in selecting a thesis or dissertation topic, how they identified the information they would need,

what resources (including people) they used, and how they gathered information. Not every aspect of each standard was addressed; however, a number of key findings arose in the study, particularly related to standards 1, 2, and 5.

Standard 1: The information-literate student determines the nature and extent of information needed

Participants used the general information given by their professors or supervisors to determine the nature and extent of information needed for their academic work. Many conferred with their supervisors to define their research area and thesis or dissertation plans. Nearly all participants said that assignments in Canada were more demanding. Typically, they said that only general information was offered in class, which required them to go to the library to obtain "a lot of papers" to get a clearer understanding of their research topics. Students used reading lists, a specific paper their professor had mentioned or given them, and textbooks as core sources of information. Also, most of the participants discussed assignments with their classmates and with the other students in their research area. Here, Ben discusses using the library as "a natural thing" in determining the information needed for his work:

From the instructor, you cannot get enough to solve your problem, you have to find some resources. Some professors, they will tell you directly, you should go to the library and get this or that. I remember when I first started my research, Dr. [X], he is very famous and very good, ah, professor, he give me one assignment, "Just go to the library for two weeks and sit there." He give me the name of one journal, it's called *Geo-technical Abstract*, [and he said], "You go there and find debris flow, all the papers related with debris flow, and write down the names. And [then] after that, two weeks later you go back and meet with me." That was my first assignment with my research. So I went to library every day and read all the papers which were debris and another week and classify them. So I have very clear idea of which kind of topic I'm doing.

Carl's experiences echoed Ben's. Here, he discusses the value of receiving a key paper from his supervisor, using a tree metaphor to explain how it served as a starting point for his own investigation of the topic.

Its just like ... you're pulling something out of a hole. And beginning maybe your supervisor give you a paper. You have a reference and you need to look at those references. You need to read those papers. So you look for those papers first. Just like a tree. With those papers we have, we have the references also and you just increase your tree, one single branch, a single trunk to the ... lots of branch.

Eric relied not only on his supervisor and the library for guidance and information, but also explored the Internet for resources relevant to his research work. Here, he notes the importance of gathering relevant materials, reviewing them, and making decisions about his research plans.

Usually my supervisor will give me a high level guide about my thesis. They want to limit your source and also you have to work out, like, what thesis is used for and more valuable for your research work. Yeah. You have to find out a lot of the papers, read papers, and find some ideas from them, and also come out with your own work.

**Standard 2: The information-literate student accesses needed information effectively and efficiently**

In addition to recognizing the need for information, and crafting strategies to locate materials to review, the participants' experiences also reflect a range of abilities to search effectively and efficiently. All of the interviewees, for example, used Google to find information, but with varied results and for different reasons. Helen used Google as a last resort and seemed unhappy with the results she found there. Jen, Dan, Carl, and Anna used Google or Google Scholar, but all preferred to use the library for academic resources. They felt that Google was useful only for general or everyday topics, rather than as a core resource for their academic work. As Carl noted,

[Choosing a resource] depends on the things I want to look for. If it's a kind of general topic, Google much better. I only use library search engine, for the paper, for the journal nothing else. Just for the paper, for journal.

Dan, Ben, and Anna also used Google to check spelling of terms to aid in library searches – a very innovative and efficient way to enhance the quality of their results. Ian used Google to cross reference English words with the Chinese equivalent if he was having trouble conducting library searches. He also regularly used Google to search for Chinese-language resources to increase his understanding of a topic. As he noted,

Well, most I go to Google. Well, sometimes, you know, I can find some materials in Chinese. Yeah, cause I don't have to use the English stuff and because I use some websites before ... sometimes I know there is some website, they have some valuable academic materials in that website.

Five participants used Google to locate authors or institutes cited in papers they had read. In this way, they could see who else was doing similar

research, and could track down papers that were not yet published. Here, Ben described this information-searching strategy:

Every one week or two weeks I will use Google to search my research. It will show you probably in other schools some papers not published yet and also they will show you probably there's some other people doing the same research, they have their own website. I can track which kind of work they are doing.

Interestingly, Ben did not question the lack of peer review in these unpublished papers, or raise other quality-related concerns. He clearly saw this as an effective and efficient use of his time. Eric, however, did say that he trusted the quality of academic databases over Google and Google Scholar, and that it was important to evaluate information, but he still thought very highly of Google's search capabilities. He did not think that Google would "cheat" him and that it would give him everything matching his search terms. As he noted,

[Why] Google? Well, Google, because it's very fast and you can get whatever you want very fastly. It's very famous search engine in the world.

Other participants thought that Google was superior to the academic library, and did not question the materials retrieved using this search engine. Fred, for example, very clearly noted that "the function of Google is much stronger than library ... I always think that if I cannot find something on Google, no one can find it." Ben also noted how much easier it was to search Google than the library's OPAC:

Not often I can get the result [from the OPAC]. But from the Google every time I can get the textbook or something that's very related. But for the library probably because of the classification system sometimes I have to try several times to get what I want.

The interviewees' heavy reliance on Google – often without concern for the quality of materials located with this tool – may speak to the need for more training in the use of library databases and the OPAC, or the redesign of these systems to better suit international students' searching abilities. International students, for example, may need hands-on opportunities to practise searching and explore library resources, rather than listening to a lecture-style overview of the library's resources. The participants in this study clearly varied in their searching skills: some could not describe their search strategies very well, and they had problems refining their searches. The students did not use Boolean operators, or understand how they work.

Most participants described using simple keyword searches, and some had not tried the advanced search options, especially in the OPAC. They were also frustrated by books that were out on loan, and many were unaware of interlibrary loan services. Fred, for example, complained that the books he needed most were “always out of the library.”

I went to library many times and book is always out of library. So if I wanted to borrow ten books out of library, I only can get two, only can get two, because some, the volumes of the same book are not enough here. Yeah, some students got one copy, I mean the copies and there's no more left. So that's ... that's a problem. I could do nothing [when that happens].

Helen was upset about the semester-long loan periods given to graduate students and professors. She was not aware that patrons could recall books borrowed by others, and believed that single copies should not be available for loan. She compared the UofA's policies with her experiences in China, and described her search strategy for solving this dilemma:

If, in China, some key book, you can't get out from library. For example if library only hold one book you can't get them off, out of the library. But here I find you can borrow from the library, even only one [copy]. So that's the main problem, cause if ... when people borrow book out of the library, the other people, they couldn't read this book. They couldn't get what they want. So each time when I get the reference list, I go to the library. The most time I couldn't find the book because they all lent out. Cause the probably, at first at the beginning of class, for example if they are in second or third year, they know the next semester they will get some class and they know what kind of textbook they need, then they get, they borrow from the library so others they couldn't get.

Although most of the participants did not talk about evaluating material, they clearly placed a high value on the information given to them in class or by their supervisors (e.g., textbooks, articles, or reading lists) and used it to identify important authors. They would then search for other papers by this author and use citation indexes to track who had cited that author or for items cited in the original paper. They also visited the authors' websites and their institutions to find more material. As Ian noted, trust in an author was often unquestioned: “You need to see the authors [in reviewing materials]. If he is famous, you know, it's valuable. He's knowledge.” Dan noted a similar reverence, but for the academic journals themselves:

So I will see in which journal this article is being published. If it's a very famous journal like *Science* and *Nature*, I will choose to trust them ... and if it's not a very recent paper, not published for more than one year or

two year, I will see who else has cited them. If it has a very high citation, that means it's a very good paper.

Jen also discussed approaching instructors for guidance in locating good materials, and how her strategies had evolved to more effective, independent work:

Before I think my first term and my second term I have trouble to find resource ... a lot of trouble. So the way I solve it is I went to the instructor's office and I talked with her or him, said, "OK, I want to do a project with this topic I have troubles find resource." And usually they are so knowledgeable, they just grab some books from their bookshelf, give it to me ... I solve my problem. But I know it's not so good ... but anyway, I learned those things. And actually [now] I did my personal research. I started to use database last term. And I finish all my term paper, on my own, by my own research so ... it's good. I feel so good about that.

**Standard 5: The information-literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally**

Only a few participants had been taught in China about the legal and ethical aspects of information access. Some students had learned, for example, that it was important to give other authors credit. Eric recalled being taught that "when you try to reference other papers you have to put [authors' names] as a reference." Although some students described using quotation marks when citing others' work, they noted that there was no standard format and they had to learn about citation styles in Canada. Some interviewees learned about copyright and plagiarism in their Canadian university courses or in the general campus (non-library) orientation sessions, but only one (Carl) had learned about this from librarians on campus. As many of the participants had not been introduced to plagiarism and copyright issues in China, this was one area where cultural differences affected their approaches to using information appropriately. Many participants felt that copyright and attribution were unimportant or were intended to be common-sense guidelines, rather than formal rules or laws. They noted that plagiarism and copyright violations were frowned upon in China, but not punished – especially for class assignments. Helen described the different expectations in China and Canada:

I think [Chinese students] have a different impression about copyright. In China if you copy, only for your own class, it's not that big deal. But here I hear someone say that's still a big deal. If I can't afford the book, I lend it and copy what I need. If it's only for your own use, not commercial, that's OK.

Carl echoed Helen's thoughts on this issue:

As students we know that something should be put in copyright. But yeah, Chinese saying ... guys, the guys ... stealing the book is not accepted, it's kind of cultural, so if you steal a book it's not accept. So kind of problem and kind of good. Not 100 per cent wrong. I know it's not good, it's not right, but not 100 per cent wrong.

Fortunately, nearly all of participants understood that copyright was an important issue in Canada and that they needed to pay attention to it. As Fred noted, "Copyright is very important here, but not in China. So yeah, that's a ... totally different thing [in Canada]. Copyright is very, very important here." Ian noted that when coming to a new country he felt that it was important to familiarize himself with the rules:

I came to a new country and new system, which I am not very familiar with their rules so ... the thing is to check everything, make you safe. I mean, sometimes you have got common sense. Maybe you have in China ... but maybe the situation's quite different in Canada. So I don't want to get myself into trouble.

When it came to accessing materials, very few participants understood the importance of database licensing and the implications for appropriate use of scholarly resources. Dan, for example, was very excited about using the UofA library system because he could access many more full-text articles than he could in China. However, he was also excited at the prospect of sending materials to his former classmates in China, who often asked him to locate papers to send to them. Interestingly, Dan understood copyright implications related to copying books, and did follow appropriate citation methods in using materials – but database licensing did not make sense to him. In his opinion, "If I can access the paper, I think it should be legal [to send it to anyone]." This comment was made with full recognition that the UofA had paid for access to these materials, and that this was the reason many materials were unavailable in China. And yet he continued to believe that because he could access the paper it was now "his" to distribute, and was very impressed with the range of materials available through this university.

## Conclusions

Overall, these students' experiences reflected the full range of levels of achievement in the information literacy skills reflected in the ACRL Standards. Although some students were adept at locating scholarly

materials, others struggled or could locate information only ineffectively and inefficiently. In addition, plagiarism, copyright, and appropriate citation strategies are areas where international students need targeted advice and support. Although these students appear to have formed successful strategies for identifying the information they needed to pursue (e.g., through discussions with thesis supervisors), additional research on how well international students are meeting the Standards is needed.

The findings presented here also point to challenges and issues that influence these international students' successes in a Canadian university. These graduate students were often unprepared to speak and understand spoken English at the level required by the UofA. Even participants who took additional English-language classes struggled to understand conversational English during their first few months on campus, including information presented at library orientation. As these sessions are typically held in the early weeks of the first semester, the timing of orientation may not be ideal for students who are adapting to a new language and culture. General orientation does not seem to be an effective method for teaching Chinese international students about the library; participants found that too much information was presented, and too quickly, and that the sessions were not designed with the needs of ESL students in mind. In-class library sessions offered by a librarian (and supported by the course professor) were more successful in reaching the participants. Hands-on sessions would also be ideal, as these would allow students to practise using the library's resources, with a librarian on hand to provide advice and support.

Targeted, hands-on library training may also aid in educating Chinese international students about the role of the librarian. Certainly, misperceptions about librarians' roles and the skills they bring to the job are not restricted to this student group; however, the findings of this study reinforce the importance that librarians must place on ensuring that their users understand the range of services that they can provide. This was made particularly clear by Jen's experience at the UofA Libraries; she had participated in the general library orientation and had completed an in-class session, but still did not realize that librarians could help her with research-related questions. Jen was lucky, as her professor explained this to her, but she wished that she had learned this from the librarians themselves.

There are also implications here for the development of information literacy strategies to suit international students' needs. In addition to the



aforementioned recommendations to consider in-class (preferably hands-on) sessions, held later in the academic year, there are other changes that librarians can implement to enhance their information literacy programs. First, it is vital that librarians recognize international students' particular needs and design programs that are targeted to them. By evaluating the make-up of the local student body, and researching the needs of students from particular countries, librarians will be able to better meet students' information needs – and make great strides in outreach to these individual student groups. Second, librarians should contact professors to arrange instructional sessions that will support course objectives, and that take the needs of each particular class into account. Professors can provide substantial information about the skill levels of their students (including the particular needs of their international students), as well as content and assignment-related needs; librarians need to continue to build connections with faculty in order to best meet students' needs. Third, librarians should integrate Google and Google Scholar in their instructional sessions; as more and more students rely on Google for academic materials, guidance on effective search techniques, evaluation of Web resources, and the transfer of Web search skills to library databases are key areas of development that can support international students' use of digital information.

In addition to these findings and conclusions, this exploratory study also points to a number of areas for further research. Studies of students' information retrieval strategies (e.g., using a talk-aloud protocol during task-based searching) would provide additional insights into the ways that students' located digital materials and the challenges involved in completing effective search tasks with retrieval tools designed for use in English. A more complete examination of students' experiences in the context of the ACRL's Standards for Information Literacy would also be useful, particularly with other international student groups. However, in considering new research projects (and in designing instructional programs or other library services to meet international students' needs), it is also important to balance international students' particular needs with their desire to be treated as "regular" students. Although the findings of this study point to some of the unique characteristics and needs of graduate students from China (e.g., language and cultural barriers), many of their experiences reflect the ongoing challenges that *all* students face – from locating relevant materials, to succeeding in their academic work. By understanding and meeting international students' information needs, and by evaluating existing library programs and services, librarians and

information scholars may identify innovative and effective strategies that can benefit all university students.

### Notes

1. All interviewees are identified by pseudonyms to protect participants' anonymity.
2. All quotes appearing in this paper are verbatim; they have not been edited, in order to preserve the integrity of the participants' thoughts and perceptions.

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