Information Literacy Challenges Faced by Chinese Students

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Outline

- Context
- Research Question
- Methods
- Findings
- Conclusions
Context
Lack of research on:

- international engineering students
- international undergraduate students
- information literacy skills and needs of international students throughout the research process
Rising percentage of international students from China

Data from Facts and figures 2012: Immigration overview permanent and temporary residents
International students’ fields of study

Increasing information literacy competency requirements

1. A knowledge base for engineering
2. Problem analysis
3. **Investigation**
4. Design
5. Use of engineering
6. Individual and team work
7. **Communication skills**
8. Professionalism
9. Impact of engineering on society and the environment
10. **Ethics** and equity
11. Economics and project management
12. **Life-long learning**

*Canadian Engineering Accreditation Board Accreditation Criteria and Procedures, from http://www.engineerscanada.ca*
Growing emphasis on undergraduate research

ASAP 2012-2017: Achieving strategic academic priorities: A plan for McGill

Strategy 2.5: McGill will continue to extend opportunities for undergraduate research. (Strengths and Aspirations; TLS Nexus Project)

Action 2.5.1: Mandate all Faculties to Increase or initiative undergraduate research opportunities, including summer research opportunities, and to monitor and report on them regularly.
To identify information literacy challenges faced by Chinese-speaking undergraduate engineering students.

What are their specific challenges in comparison with native English speakers?
Comparison study

Mixed methods
- Based on Seidman’s best interview practice
- Survey
- Interviews

Content analysis
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2. Why did you select the topic you chose for your research paper?

Check any that apply:

- [ ] a. The topic seemed manageable within the given timeline
- [ ] b. I have already done some course work on this topic
- [ ] c. I knew I could find research material on this topic
- [ ] d. I know someone who has expertise in this field
- [ ] e. I received suggestions for potential topics from the instructor or friends
- [ ] f. The topic was interesting to me
- [ ] g. I was curious to explore an unknown topic
- [ ] h. Other: [ ]

2.2 Did you change your research topic at any point?

Check any that apply:

- [ ] a. Yes
- [ ] b. No
- [ ] c. Don't remember
- [ ] d. Other: [ ]
How was your experience...

- **General**: overall in completing your paper?
- **Identify**: in selecting a topic?
- **Scope**: selecting a database to search?
- **Plan**: creating a search strategy?
- **Gather**: locating the full text of journal articles?
- **Evaluate**: determining if information was credible?
- **Manage**: managing your references?
- **Present**: incorporating ideas from your readings into your paper?
Chinese speakers

Searching

“The easiest part of completing the paper was searching and finding articles. Searching was easy. I only spent one hour.” (C03)

Building search strategies

“I searched mainly for journal articles. I used some keywords that I found in full-text articles that I read. Then I used them in searching again.” (C05)

Locating full text

“Locating full text articles was most challenging due to my topic... I gave up on [the articles I couldn’t find] and only looked at results that had full text.” (C04)
Building search strategies / Locating full text

“Brainstorming and synonyms [were] really easy... but actually getting results from that wasn’t that obvious... My biggest challenge in researching and writing the paper was finding the full text of articles, especially for older ones. I would see a reference in Google Scholar but not be able to obtain the full text.” (E01)

“I had difficulty finding the full text for one article but I made use of the chat-with-a-librarian [virtual reference] service and was able to obtain the article.” (E06)
Findings - Evaluating

Chinese speakers

Relevance

“[Having had] difficulty understanding articles made it hard to know if they were relevant; even after reading the abstract, [I] didn’t always understand the data, methods, terminology included in a paper. [I] went to [the] conclusion to get the useful bits and mostly only used the conclusion to get findings.” (C07)

Credibility

“I thought articles from Compendex and IEEE would be peer-reviewed... I didn’t know how to evaluate [if a source was peer reviewed]... I checked over my sources again and if it looked scholarly, I included it.” (C06)
Findings - Evaluating

Native English speakers

Relevance

“I could tell from titles, abstracts and conclusions if articles would be relevant.” (E04)

Credibility

“I liked to look at where the article comes from. Some of the ones that I found were from either government agencies or research councils... to me, that makes something credible... If it was peer reviewed, someone did that work for me... I thought about it but [it was] hard to check [author’s bias]...[I noted] no obvious bias or conflict of interest in what I read.” (E09)
Findings - Reading

Chinese speakers

Reading comprehension

“I had a lot of trouble reading and understanding journal literature, the level [of language], the technical issues, I could not understand what they are trying to say.” (C02)

Note-taking

“It was hard to keep track of notes taken from readings. [While writing]...I recognized that I couldn’t recall from which article I got the idea... I couldn’t remember where I read it.” (C03)
Native English speakers

Reading comprehension

“I never had problems with my comprehension. Reading is easy for me. But there were words that I didn’t understand. So I used Google to search for those words.”

(E03)

Note-taking

“I took notes as I read and then wrote something relevant.”

(E02)
Findings - Writing

Linguistic challenges

- “Writing was the most challenging part of the process. I especially felt challenged in expressing myself in English. Something that could be easily spoken out in Chinese is much harder to form in English.” (C05)

- “I repeated my words and sentences all the time, which I shouldn’t.” (C03)

Chinese speakers

Native English speakers

- “The writing part was relatively easy.” (E01)
Chinese speakers / Native English speakers

**Persuasive writing**

- “The persuasive part was difficult. [It was challenging] to make the whole thing look convincing to your audience” (C07)

**Incorporating ideas**

- “I had to collect points from other papers and cite them in my paper which was very different and challenging.” (C03)

**Developing outlines**

- “The skeleton part was hard. What the paper would look like was tricky.” (E02)
Chinese speakers

When to cite

“I wrote about many points that I got from my readings, but I didn’t realize that I should cite them.” (C01)

How to cite

“I was not very clear when to summarize and when to quote directly. The instructor didn’t like direct quotes longer than 4 lines. So I mainly paraphrased... I really like the original quotes in the text, and I had a difficult time paraphrasing an idea as well as the original one.” (C05)
How to cite

“I consulted the instructor after the class on how to cite the same reference in several places in a paper.” (E07)
Recommendations for future practice

- Strengthen the in-class library instruction
- Create stand-alone workshops and online guides targeted to international students
- Provide suggestions to instructors
- Collaborate with Writing Center and International Student Services
- Further promote existing services across the campus
Limitations

- Participants from only one university and one specific course
- Study examines only student perspectives
Examining instructors’ perspectives
Implement and assess effectiveness of newly developed workshops and programs on international students’ information literacy skills