**Journal Club Meeting: March 2011**

Discussion led by: Jessica Lange and Katherine Hanz

*Study being evaluated:*

Cordell, R. M., & Fisher, L. F. (2010). Reference Questions as an Authentic Assessment of Information Literacy. *Reference Services Review,* *38*(3), 474-481.

**Introduction**

* In this study, Rosanne Cordell and Linda Fisher of Indiana University South Bend attempt to use questions asked at their library’s Information Commons Desk as a method of assessing whether or not an IL course changed the “real life” research behaviour of their students.
* Over a four-year period, librarians at the Information Commons Desk were asked to record and collect students’ initial reference questions.  The authors then evaluated the students’ questions for sophistication using their adaption of Bloom’s *Taxonomy of Educational Objectives*.
* We were interested in evaluating this article because we are currently working on research which involves evaluating the students’ questions.   We wanted to see if Cordell and Fisher’s taxonomy would be useful in our own evaluation.

**The ReLIANT instrument**  
  
  
**I.    Study design**

* **Is the objective of the study clearly stated?  Is the reason for the study apparent?**  
    
  Objective: To determine if an IL course actually changes research behavior outside of IL course assignments (i.e.) Is the real-life research behavior of students effected?  “This research project attempted [...] to measure the actual real world behavior of students seeking help with bibliographic research at the Information Commons Desk” (p. 476).
* **Is the population described in detail?  Is the number of study participants clearly stated, and is the sample size sufficient?  Is there a description of participants (gender, age, race, academic level, level of previous library experience, etc)?  Is the loss of any of the participants explained?  Are participants required to participate in the course, or is their participation voluntary?**
  + Questionnaires were completed for every question asked at the desk for the same three weeks each semester (beginning in October 2004 and ending in March 2008)
  + According to Figure 1, a number of “user types” were surveyed: Undergraduate, Grad Student, Faculty, Staff, but we don’t know how many of each.  The results are not categorized by user type.
  + No overview of the university makeup is provided either
  + It was also noted that there was no way to account for repeat participants
* **Are groups of participants that are receiving different educational interventions similar in their size and population characteristics?  Other than the difference of the intervention, are the groups treated equally throughout the research process?**
  + N/A --( if the IL course is the intervention, the authors don’t actually measure this because they don’t give the results of students who took the IL course vs those that didn’t). They do record this in the survey, but the results aren’t shared with the reader.
  + There is no control group—all students are required to take the IL course
  + Perhaps the Reliant instrument is not fair to use in this particular case
* **What research method was used?** 
  + Short questionnaire🡪the librarian filled out the student’s initial reference question; the student filled out their class standing, and whether/when they had taken the Library Research Course
* **Was the research methodology clearly stated?**   
  + Yes, to an extent ( see p. 476)
  + It is unclear how many librarians were involved in collecting the data
  + It was also unclear if the authors collected the data themselves and what was the data coding agreement rate between the two authors
* **Is it appropriate for the question being asked?** 
  + Not necessarily: it might better approach be to chart the students’ research assignments for classes and see if they improve following the course?(although this would get messy and be very subjective)
  + The authors suggest several problems with their own method:
    - “It may be that the original premise of the study is false; that students can gain significant skills in bibliographic research processes without demonstrating those skills verbally outside of the classroom” (p. 480). If this is true, then the questionnaire used won’t reliable measure what the authors are looking for
    - “...we became aware of how often students first questions were tentatively and naively stated [...] when a quick follow-up questions was quite sophisticated” (p.480).  If this is the case, how useful is it to record and analyze the first question a students asks at the reference desk?  Would it be more useful to analyze the entire reference interview?
* **Does the method attempt to avoid bias via randomization, blinding, etc. when possible?**
  + The collected questions were randomized by a research assistant
  + The card numbers were hidden when the researchers coded the sophistication of each question
  + However, if the librarian is still the one recording the students’ questions, how accurate is this recording?
* **When were the learning outcomes measured?  Is this a study looking at short-term, intermediate, or long-term effects?**
  + The questionnaires were given out during the same three weeks each semester (according to p. 476), but the authors don’t state which three weeks. It says they were collected from Oct 11 2004-Mar 10, 2008, but we don’t know why they started in October when the info lit class going on.
  + The amount of time between taking the course and filling out the questionnaire varied for each student (See question in Figure 1)
  + The study is looking for long-term effects (i.e.) real world behaviour
* **Is the research instrument described in detail?**
  + They provide the example of the form the librarians/students had to fill out
* **What questions were asked?**

Usertype (undergrad, grad, faculty, staff, other) ; class (1st year, 2nd, 3rd, 4th, grad) ; sex ; have you taken the library research course? When?

* **What level of learning is the study addressing?**

all Bloom levels? (comparing levels of learning)

* **Was the research instrument validated?**

*-*Yes—ANOVA , although it was commented that this wasn’t an appropriate instrument to use for this data

*Overall comments:*

**II.                Educational context**

* **In what type of learning environment does the instruction take place?  (E.g. university, college, secondary school, public library, special library, hospital, etc.)**

Indiana University (South Bend)

* **What teaching method was used?  Is there a clearly outlined philosophy or theoretical basis behind the instruction?**  
    
  No
* **What mode of delivery was used? (e.g. Lecture, web-based tutorial, hands-on in computer lab, videoconference, etc.)**
  + It was a one-credit introduction to information literacy (required for all undergraduate students)
  + No specifics are given as to how the course was delivered  
      
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* **Is the instructional topic clearly described? What was taught?**
  + No! They don’t provide any specifics
  + We can assume that they had a number of instructional topics, since it wasn’t a one-shot session
* **Are learning objectives stated?**
  + No--at least not specific objectives
  + They claim to be students should be learning “sophisticated research knowledge” (p. 475)
* **How much instructional contact time was involved?**
  + One semester, one credit course (we are not clear on how many hours or how many sessions)
* **What learning outcomes were measured?**
  + They claim that they want to measure the sophistication of research questions in a real-world setting
  + They adapt Bloom’s taxonomy of education objectives to measure this, but it’s unclear whether or not these “objectives” were linked to the IL course being taught
  + They also refer to a post-test regularly used to evaluate the students’ learning immediately following the IL course, but we don’t know actually know what was being evaluated in this test  
      
    *Overall comments:*  
    The authors don’t provide a strong link between the IL course and what they are measuring in their study.  What “real world” research skills were being taught in the class?  What skills should the students have learned?  This is never made explicit.

**III.             Results**

* **Are the results of the study clearly explained?**

“Although analysis of variance (ANOVA) test did not indicate a significant effect, means  
of the taxonomy levels for each semester show a clear trend upward in the levels of  
questions asked in spring semesters over the four yours of the data collection,  
suggesting that our students’ research questions have, indeed, become more  
sophisticated since the library’s information literacy course has been made a  
campus-wide requirement” (p.478)

* + It is not explained why they chose to use ANOVA
  + The authors included a table of results which was good however they have contradictory results.
* **Do the results address the original research question?**

No--they didn’t compare responses of students who took the IL workshop vs those who didn’t, (and any “upticks” aren’t statistically significant). They also looked at the difference between two semesters but that could be due to students being more at ease with the school’s resources.

* **Are the data presented in a clear manner, giving true numbers?**

Yes

* **Were appropriate tests for statistical significance carried out and reported?**

No.

* **Was the reported outcome positive or negative in respect to the intervention?**

Negative according to the ANOVA test but according to their conclusion, it is was positive.

* **Does the reported data support the author’s conclusions?**

They conclude that “Formal course assessment has shown the introduction to information literacy course at IU South Bend to be highly effective in teaching the skills covered in its curriculum. This study was an authentic assessment of research behavior outside the classroom at the Information Commons Desk, and it suggests that the course also has long-terms  
positive effects, but the data are not as strong.”

* **Are potential problems with the research design presented?**

-Lack of consistency in notating library questions.  
-Ethics of obtaining consent to be included in study  
-Lack of pre-test (e.g. did the questions ALWAYS change in the spring even before the IL course was introduced simply because students were more comfortable with the school environment by then?)  
--fall vs spring (is this uptick in question sophistication in the spring due to the intervention or just students increased comfort with the library over time)  
  
-Factors affecting the study according to the authors (p. 479):  
1) Enrollment: stable enrollment for the first two years, followed by a spike in enrollment, which may have skewed results  
2) IL course timing: students who take the IL course in their last semester may not have time to apply the skills on projects outside of the IL class (i.e.) may not come to the library and ask questions at the ref. desk.  
3) Adherence to the research protocol: difficult to ensure that all librarians actually recorded the complete question in the words of the student---many data cards only had partial questions recorded   
  
*Overall comments:*  
  
**IV.             Relevance**

* **Is the study population similar to my own user/teaching population?**

We can’t tell—there’s not enough information provided about the population.

* **What information literacy competencies does this study address?  Are these learning needs the same as those of my students?**
  + The study claims to be interested in students’ IL competencies in  “real” life situations (i.e.) in research assignments undertaken outside of the IL course. Rather than addressing a particular competency/competencies, the authors are interested in assessing ranges of sophistication in the students questions. By doing this, they aren’t looking much beyond the first ACRL Information Literacy standard: 1)  “The information literate student defines and articulates the need for information” (ACRL, 2000, p. 8)  
    2) “The information literate student identifies a variety of types and formats of potential sources for information” (ACRL, 2000, p.8)
* **Are the practice implications of this research reported?**
  + According to the authors: “Making students life-long learners is a worthy goal, but one for which we need effective assessment methods.” (that is, methods of assessing whether or not IL courses led to long-term effects in their information approach)
  + The study implies that an IL course doe have an effect on long-term student information literacies--however, they don’t prove this in their student
* **Can the results of this study be directly transferred to my own situation, or what aspects of this study can I use to inform my practice?**
  + We don’t have an IL course so it’s not immediately relevant. However the concept that IL intervention leads to lifelong learning is useful to consider and assess.  How relevant or useful are the skills we are teaching students?  Will they be able to make use of them outside the context of a particular class?  Outside of their university studies?
  + Cordell/Fisher question sophistication level, might be useful in assessing the questions our own students ask--the authors encourage other professionals to use and/or adapt the taxonomy for their own use
  + *Overall comments:*

Overall, we thought the taxonomy created by Cordell and Bloom was original and potentially very useful to other librarians who are looking for a method of categorizing students’ questions according to a knowledge hierarchy. Otherwise the conclusions of the study weren’t strong enough to make definite links between information literacy efforts and lifelong learning.