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The Map is Useless Unless You Know Where You Are: Information Literacy Pre-Assessment as a Tool for Understanding and Collaboration

Jason Ertz

"You are here," the map says, and with that statement the map becomes useful as you set off on the path to students' information literacy. Maps are only useful for getting somewhere once you have established where you are on them. The objective of this paper is to provide other librarians with a potential outline for beginning an information literacy assessment strategy, starting with pre-assessment. Librarians unsure about where to start when it comes to assessment will find that developing an electronic pre-test for use by classroom faculty can be a great way to start such a strategy for collaborating with classroom faculty. In fact, the pre-test itself can even be a great tool for initiating collaboration in general if none existed in the first place, because it provides information for the librarians as well as faculty concerning students' abilities in the research process. This can be especially important to Composition and Speech faculty. The results, graded electronically, can be used by the classroom faculty to tailor their own instruction on a per class basis when they see that most students may be lacking in certain information literacy skills.

Pre-assessment also is nonjudgmental pertaining to a faculty member's teaching abilities and students' learning, making it an easier sell for collaboration. If we can't know where students end up after a class, at least we can get a sense of where they start and focus our instruction, likely a one-shot session, on the research skill areas that students may be lacking. But a good relationship with classroom faculty could lead to new methods of post-assessing, like bibliographic analysis, focus groups or research logs. It could also lead to more sessions with the librarian if a faculty member finds that some classes are extensively deficient in information literacy skills.

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This paper will highlight a pilot study conducted by College of DuPage (COD) Library with a select group of English Composition faculty members. It will include study objectives, methodology, and results. Why only a pre-assessment versus both a pre- and a post-test will also be discussed. The argument for using either course management systems or online survey tools will be made due to the need for immediate results and feedback for faculty and students. The case for library-wide information literacy learning outcomes also will be made as well as their use in creating a pre-assessment. Future items will be discussed as the study continues throughout subsequent semesters.

Objectives of the Pilot Study

The purpose of the pilot project was three fold. First, the COD Library sought to develop a pre-assessment instrument that would give both librarians and discipline faculty working knowledge of the knowledge level students had regarding information literacy, research, and library concepts and terminology. Second, the pre-assessment instrument acted a tool for us to work from. We planned to take the results of the assessment and tailor our instruction to the learning outcome areas where students may have tested poorly and leave the areas where they tested better to time when they can be addressed, making the instrument truly diagnostic for a specific class section. Lastly, the pilot could lead us to a larger study group, providing us with evidence on students' information literacy levels for the college at large. The evidence can also be used to justify larger pre- and post-competency tests or an information literacy credit course. Above all, we will be able to act upon the knowledge of where students are on the map to information literacy, both in the library and in the classroom.

INSTRUMENT DEVELOPMENT

Developing a testing instrument can be a labor intensive task, particularly when you have limited experience with it. This is why it is extremely important that we have learning outcomes established before we make any effort to develop an instrument. Learning outcomes help us determine what it is we want to assess and then focus on ways to do so.

Murtha, Stec, and Wilt state in their workshop study on using assessment to improve learning, "a critical point to remember is that all assessment should be linked to learning outcomes. If you create learning outcomes, the assessment should flow from those outcomes" (2006, p. 298). Mapping, or aligning, assessment instruments to outcomes, as well as all other instruction tools in the library, is one for the major positive results we gained from this study.
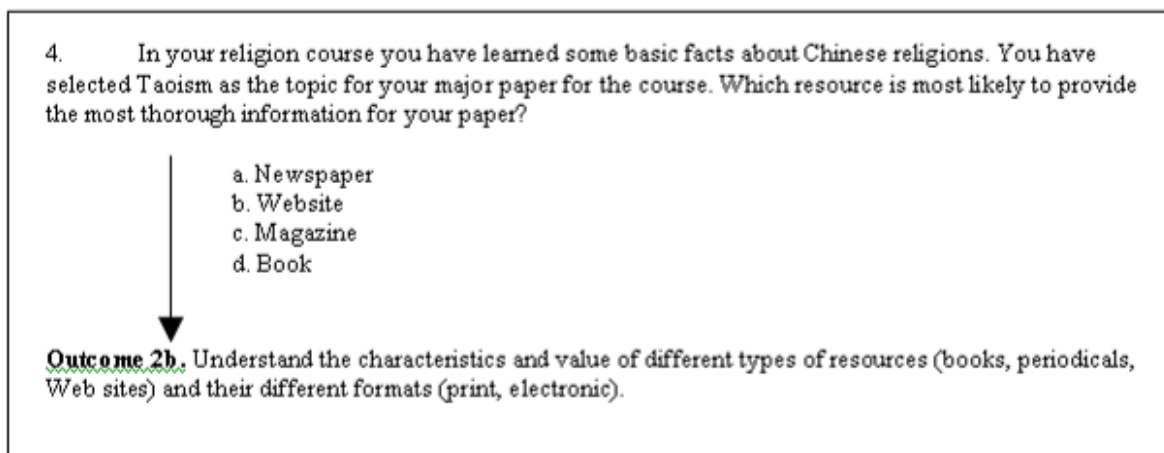
We developed the instrument first by examining the many different testing tools already used by other institutions. We used the Bay Area Community College, Project SAILS, and Network of Illinois Learning Resources in Community Colleges (NILRC) instruments as guides in creating our own shorter test. We created a total of 25 multiple choice and multiple answer questions, all mapped to specific library learning outcomes.

We developed the test in Blackboard, the COD course management system (CMS), because all classes, online or not, have Blackboard shells created for them whether instructors use them or not. Using Blackboard was very important because it provided immediate results for everyone involved: the students, the faculty and the librarians. Having immediate results made the tests useful, hours after they had been completed; shrinking the elapsed time within the assessment loop.

RECRUITING FACULTY

Recruiting faculty to participate in this study was not as challenging as we first thought. This study could not have happened without the cooperation of classroom faculty and access to their students, so we needed to use the relationships we already had to foster this collaboration. It doesn't matter if we recruit two sections or twenty sections, what matters is that we have some faculty collaboration to support studies of this kind. Some things to think about in recruiting faculty are, first, not to make more work for them, at least initially. We did this by going into each section and administering the test ourselves, explaining to students that the test would help both us and the faculty focus on areas of research with which they might not be comfortable. We also helped with the uploading of the assessment into Blackboard for the faculty and then downloading the results that were to be analyzed. We analyzed the results and sent them to the faculty member as well. The faculty members in this pilot study virtually had to do nothing except allow us the first 30 minutes of their class somewhere in the first three weeks of the semester. The second thing we did when recruiting faculty was to illustrate to them the value that could potentially be added to their classes, and to our one-shot library sessions, from the data we intended to gather. We had meetings with those faculty members interested in looking over the instrument prior to the semester. Generally, we kept them involved in the process and continually emphasized that they could have a broad understanding of each class's information literacy competency levels and possibly adjust instruction according to those results. For example, if the students tested poorly on a question, the faculty member could make sure that s/he addressed the learning outcome associated with that particular question (Figure 1) or make sure that we librarians addressed it in our library sessions.

Figure 1

4. In your religion course you have learned some basic facts about Chinese religions. You have selected Taoism as the topic for your major paper for the course. Which resource is most likely to provide the most thorough information for your paper?

    a. Newspaper
    b. Website
    c. Magazine
    d. Book

Outcome 2b. Understand the characteristics and value of different types of resources (books, periodicals, Web sites) and their different formats (print, electronic).

Recruitment might be the most difficult thing to do for a project like this, but word of mouth can spread if the project goes well with the faculty you have on board, however small the number is.

THE PILOT STUDY

The pilot study had a few goals in addition to our overall objectives for the project. We wanted to test our questions on students to see if they worked. We wanted to get a safe determination of how long it would take students to complete, and we just wanted to experiment with the study process as we had organized it.

We were able to recruit seven faculty members for the pilot study which gave us ten sections of English 1102, which is the students' second semester of Composition, in which they must write a major research paper. Two of those sections were honors classes. This resulted in 204 students taking the test, which for our institution's FTE (which is about 17,000) was a little short on being statistically significant to apply to the entire college, but still worthy of analysis and applicable to English 1102 classes. The demographics of the pilot students were comparable to the overall demographics of the COD student body at large, when looking at gender, age, and total completed college credits. The librarians administered the test in the classroom, and we found that it was taking students about 30 minutes to complete. The process of uploading the test and downloading the results went very smoothly, and the faculty only had to allow us into their course shell to perform these functions. We also asked for student feedback concerning the difficulty and usefulness of the test which took about five minutes. We analyzed the results using Microsoft Excel and reported to the English Department's Composition Committee on the results overall. Of course, we provided individual results to the faculty members who participated.

The results did give us some insight into students' information literacy competency levels, which helped us structure our instructional focus or provide supplemental material for students to review.
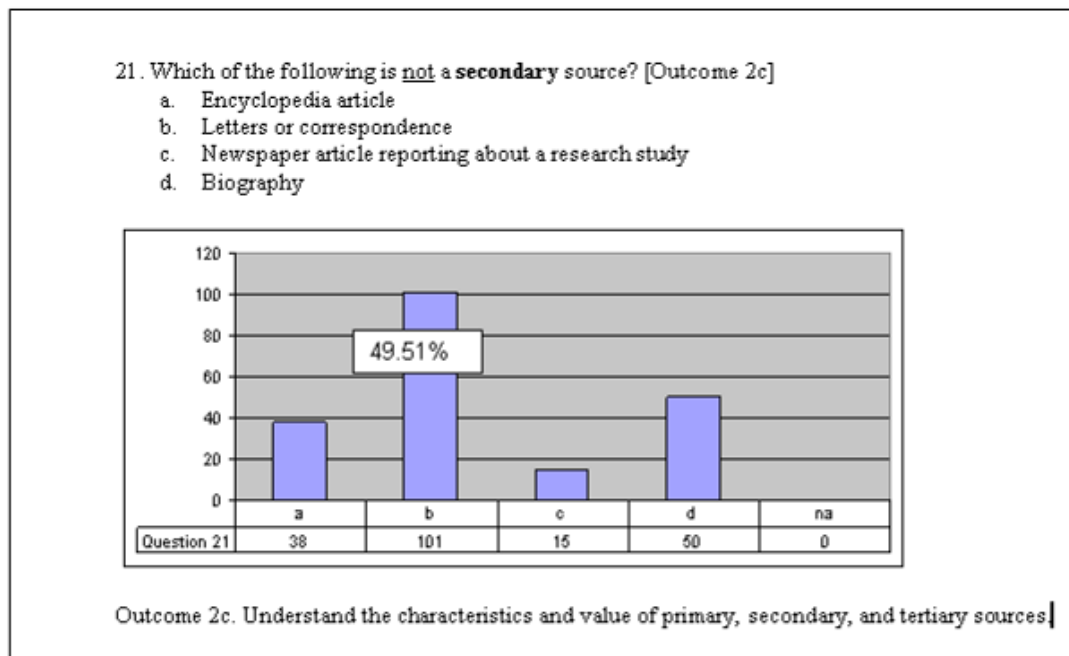
The results also gave us insights into the test questions themselves. Looking at the overall results of the pre-assessment (Figure 2), one can see that multiple-answer questions were by far the most difficult for students. This led us to believe the question type itself was the problem, and not that students didn't understand the content, although both problems probably were occurring. Questions 1, 6, 7, 11, 15, 23 and 25 are all multiple-answer questions. Students either got it correct or wrong; there was no partial credit.

Figure 2
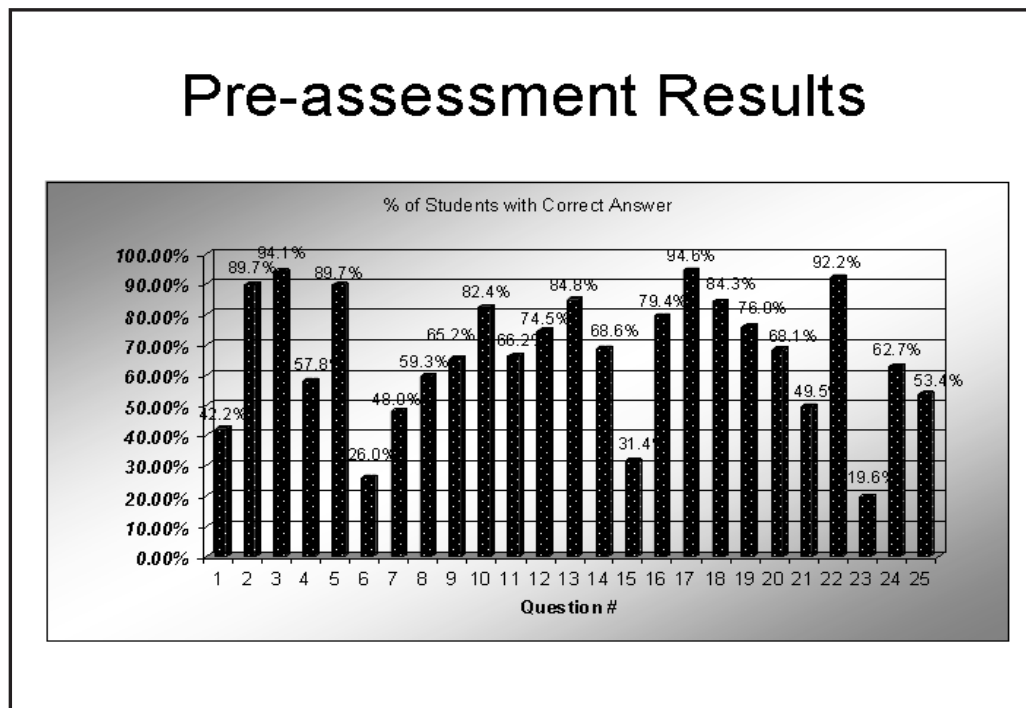
This problem led us to change all multiple-answer questions to multiple choice since it was question type, not content, that was contributing to the results. But we also received good results that helped us determine areas of need. For instance, in Figure 3 we see clearly that students were not aware of the distinctions between primary and secondary sources.

Figure 3

21. Which of the following is not a **secondary** source? [Outcome 2c]
   a. Encyclopedia article
   b. Letters or correspondence
   c. Newspaper article reporting about a research study
   d. Biography

49.51%

Question 21	a	b	c	d	na
	38	101	15	50	0

Outcome 2c. Understand the characteristics and value of primary, secondary, and tertiary sources.

Overall the results were very useful, both for making the instrument better, but also for providing us with some knowledge as to students' information literacy competency levels. We provided the information to faculty members and used the knowledge ourselves in our library one-shot sessions. In some instances we also provided supplemental material for study, such as online tutorials, worksheets, and other activity type tools. Along with the results of the pilot, student feedback on the pre-assessment was also useful in our efforts to revise the instrument and make it even more useful for students. From this point, we began implementing changes to the instrument for the next semester.

PRE-ASSESSMENT CHANGES

Along with removing multiple-answer questions, the librarians took some time to develop feedback responses and resources for each question in the instrument. This feedback was intended to be used by the students as they reviewed their answers to the pre-assessment. Not only were we interested in gaining some understanding of student competency levels, we also wanted the instrument to be used as a teaching tool, which the feedback and resources helped us do. Figure 4 is an example of a test question with feedback.

Other changes were implemented for this study as well, but they were more on the procedural and analysis side. We developed a test question and learning outcome key for faculty to use when they received their results. This key illustrated which learning outcome each question in the pre-assessment set out to "test." Also, in the next semester we tried to implement classroom faculty test administration, but some preliminary lack of results seem to be telling us that this was premature.

EVERYONE BENEFITS

Numerous studies acknowledge that pre-tests are useful for student learning, providing evidence using similar post-tests and control groups. Some are used to determine students' competency levels in various disciplines (Caspers & Bernhisel, 2007). Some pre-tests are used to demand class preparation and homework completion by students and, on the whole, end up benefiting the student's learning and understanding (Narloch, 2006). Also, pre-tests can be used as motivators for students, making them aware of what it is they need to know regarding a specific subject before they actually get to the instruction itself, and providing them with feedback and information to get them started (Ivanitskaya et al., 2008). Since it has been shown that pre-tests can be particularly useful, we did not see the need to repeat these experiments, but rather, used that knowledge for our library instruction program.

Figure 4

> **Question** You are asked to write a three-page research paper on the following question: Should colleges be allowed to restrict student speech? You have decided to enter two keywords into a Web search engine. Which **two keywords** will get the best results?
> **Answer**
> a. Colleges and censorship
> b. Colleges and students
> c. Colleges and speech
> d. Colleges and restriction
>
> **Correct & Incorrect Feedback:** The words "colleges" and "censorship" are the central ideas of this research topic and therefore are the best choices for using in a keyword search. Sometimes there is a single word that is a synonym of a phrase or sentence like "censorship" is a synonym of the phrase "restriction of speech." The search term you are looking for is not always staring you in the face.
> Take a look at this resource from Penn State for more information:
> http://www.libraries.psu.edu/instruction/infolit/andyou/mod4/mod4main.htm
> Focus on the section "Strategies for online databases"

The post-test in this multiple-choice form is not the most desirable, because the skills and processes necessary for becoming information literate do not lend themselves well to this format. This was the main reason for only having a pre-test. Caspers and Bernbisel state that "although this type of assessment may not give a complete picture of students' abilities in practice, the resulting data does have some utility when used to survey a large group of students to gain a broad view of their skills" (2007, p. 465).

Our study also was trying to gain an understanding of student motivation and awareness, using the pre-test with feedback and resources for each question. Ivanitskaya et al. concluded in their study that pre-tests that provide immediate results and feedback served as sufficient student motivators, and their study provided evidence that the librarian's library instruction session can be enhanced by pre-tests (2008, p. 523). In our study, faculty and librarians benefited from this motivation and the collaboration with each other when it came to enhancing students' information literacy skills. Since this evidence exists, it would be a better use of our time to develop more authentic post-assessments like bibliographic analysis, focus-group interviews, and/or research logs.

Conclusions and Future Endeavors

Diagnostic assessment, or pre-assessment, is generally held to be useful for engaging students and student learning. Student motivation and knowledge of what is to come as well as classroom faculty and librarians' awareness of where their students stand concerning information literacy skills are both products of these types of assessments.

This pilot study at the COD Library illustrates how one would go about shortening the assessment loop by using the results to address areas of need immediately for the classroom sections being tested. It has provided us a potential outline for starting an assessment strategy with other disciplines by starting small and by starting at the beginning of the assessment loop (See Appendix A). In the future, we plan on mapping our learning outcomes to all our instruction tools, from online tutorials to single-assignment-specific instruction sessions, making our learning outcomes the heart of our instruction program. We also plan on shifting the pre-assessment to first semester composition and speech students where we might gain some broad data concerning new students' information literacy skills. We will also be adding questions to our question bank and developing better post-assessment tools. As we draw the information literacy map based on learning outcomes, it is always important to be able to fix that big red arrow on the map, letting all of us know where we are when we start.

REFERENCES

Caspers, J. & Bernhisel, S. M. (2005). What do freshmen really know about research? Assess before you teach. *Research Strategies, 20*(4), 458-468.

College of DuPage Library. (2008). Student Learning Outcomes for the Information Literacy Instruction Program. *Cod.edu/library.* Retrieved January 15, 2009, from http://www.cod.edu/library/services/faculty/infolit/learningoutcomes.htm

Gratch-Lindauer, B., Lym, B., Brown, A., Kivel, A., Gray, M., Smalley, T., & Baker, P. (2004). Bay Area Community Colleges Information Competency Assessment Project. *Topsy.org.* Retrieved March 14, 2009, from http://www.topsy.org/ICAP/ICAProject.html

Ivanitskaya, L., Duford, S., Craig, M., & Casey, A. M. (2008). How does a pre-assessment of off-campus students' information literacy affect the effectiveness of library instruction? *Journal of Library Administration, 48*(3/4), 509-525.

Kent State University. (2009). Project SAILS (Standardized Assessment of Information Literacy Skills). *Projectsails.org.* Retrieved March 1st, 2009, from https://www.projectsails.org/

Murtha, L., Stec, E., Wilt, M. (2006). Using assessment as a tool to improve learning: An IFLA workshop. *IFLA Journal, 32*(4), 294-309.

Narloch, R., Garbin, C.P., & Turnage, K.D. (2006). Benefits of prelecture quizzes. *Teaching of Psychology, 33*(2), 109-112.

Network of Illinois Learning Resources in Community Colleges. (2009). Information Literacy Toolkit - Needs assessment instrument. *NILRC.org.* Retrieved March 15, 2009, from http://www.nilrc.org/IMLS/assessment_instrument.asp

Outline for Beginning an Assessment Strategy

A. Learning Outcomes

    a. If none exist, writing them would be the first place to start even if they are only for your single instruction sessions. They don't have to be library wide, but that would be nice.

B. Diagnostic assessment instrument development in course management system or survey tool.

    a. Immediate feedback is crucial.

    b. Electronic grading is very helpful.

    c. Use current public assessment instruments as guides.

    d. Continually tweak the instrument.

    e. Create analysis tool for result data.

        i. We could download result data from Blackboard into Excel so we used Excel to analyze data – Question # - Correct responses per sample group.

C. Recruitment of classroom faculty

    a. Build upon current relationships. 2 class sections are plenty to start.

    b. Administer the pre-test yourself. Faculty will have good intentions but…

    c. Don't give them any more work to do.

    d. Illustrate the immediate value for learning.

D. Test Question/Learning Outcome Map.

    a. Great tool for the faculty to know where students are with information literacy skills.

    b. Makes faculty aware of the library learning outcomes in case they were interested in implementing some of them into their own classrooms.

E. Have post-assessment options ready

    a. Make sure you have authentic assessment options available if the faculty would like to use them (Research logs, Bibliographic Analysis).

    b. You might get requests for a similar multiple choice post-assessment which you can either provide or talk about alternative post-assessments depending on your relationship with faculty.

F. Keep at it.

    a. Try to add 2 sections a term to your study.

    b. Don't be discouraged by initial response if it is small.

    c. Consistently offer it each semester so as to "institutionalize" it regardless of the number of participants.