April 2013

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Allen McKiel

Western Oregon University, mckiel@wou.edu

Jim Dooley

University of California, Merced, jdooley@ucmerced.edu

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Recommended Citation

McKiel, Allen and Dooley, Jim (2013) "Changing Library Operations: Information Literacy and E-resources: The Credo Student Survey," *Against the Grain*: Vol. 25: Iss. 2, Article 46.

DOI: <https://doi.org/10.7771/2380-176X.6505>

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Changing Library Operations — Information Literacy and E-resources: The Credo Student Survey

Column Editors: **Allen McKiel** (Dean of Library Services, Western Oregon University) <mckiel@wou.edu>

and **Jim Dooley** (Head of Collection Services, University of California, Merced) <jdooley@ucmerced.edu>

Column Editor's Note: *Jim Dooley and I have been presenting at the Charleston Conference on changing library operations for over five years. The sessions have been an evolving exploration of library operational adaptations to the changing technologies of information distribution and usage. We have been presenting glimpses of the changes occurring in library operations as they transition to services without print. The format of the presentations usually begins with a brief presentation of some of the library-relevant informational technology changes of the year followed by an examination of a range of topics including: trends in information resource "acquisition" and usage; developments in open access publishing; changes in consortia; library instruction; and evolving peer review and publication processes. This column is an extension of the subjects into at least six articles annually, which Jim and I will write in turns and occasionally together.*

This first article by me is an analysis of the recent Credo Survey of student values, perceptions, and uses of information resources, which includes how they find out about resources, and where they go for help. The implications are particularly informative for efforts to provide instruction in the use of library and open Web resources in the joint context of higher education and the expanding global information sphere. — AM

The Credo Student Survey

The study surveyed 1,502 higher education students — 83% undergraduate, 11% graduate. About 75% of the students were full time. The survey was not limited to one geographic area but follow-up surveys that focus specifically on certain regions are planned for the upcoming year. The topics covered six general areas: student confidence for performing research; which information resources students most value; which they prefer to use; their knowledge of resources; where they go for assistance; and their use of information-related technologies. The survey was focused on and the results are particularly relevant to the provision of instruction to improve student understanding of and skill in accessing and using information resources.

Summary

Information literacy skills are essential for successfully articulating college assignments and even more critical to effective civic and workforce participation. The key themes from this survey as outlined below will be discussed at a Credo panel during the April 2013 American College and Research Libraries Conference.

Confidence Doing Research

Most students feel reasonably capable of doing the research necessary for assignments. Class materials, e-resources, search engines, and assistance from instructors provided most of the confidence in that order of preference. The lack of time, the overwhelming amount of information, and difficulty finding the needed information were the primary problems encountered during research.

Values

Students most often identified a search engine or electronic resources as their starting point for a paper and most students recognized the primary importance of the reliability of information. The open Web was the most valued resource with library databases following closely behind.

Usage

On average the students reported using about ten resources for a paper. Over two-thirds (70%) reported regularly or almost always using the open Web. Less than half (46%) of the students reported using library resources regularly or almost always.

Information Literacy

Students easily identified plagiarism and understood the need for reliability though they were less certain how to recognize the integrity of information. A significant percentage demonstrated lack of understanding objectivity in information and a majority had difficulty identifying qualities of a scholarly journal.

Instruction

Research guides were selected by over three-quarters of the students as the preferred instructional resource. Instructors and classmates were asked for help with research most often. With respect to library resources, the instructor was the primary source of assistance over library staff. Well over half (61%) of the students had at least one instruction session from a librarian. Just under a third (29%) of the students had enrolled in an information literacy course.

Technology

Nearly two-thirds of the students reported having smart phones. When asked about e-readers, the most popular devices identified were the Kindle and iPad. About 7% had Nooks. Most "other" devices students reported using were Android tablets or PCs.

Doing Research (Questions 10, 12, 20, 11)

The survey presented four questions probing student confidence levels in doing research and asking them about problems they encountered.

Question 10 asked students how prepared they felt when writing a typical research paper. Just over 80% of students feel adequately or somewhat prepared to conduct research for a paper and 16% feel "very prepared." In question 12, 79% of students indicated that the primary enemy of confidence in research is time. Next, and probably closely related to it, are the sense of the "overwhelming amount of information" (61%) and the "difficulty finding resources" (54%).

Question 20 explored the problems students encounter during research. None of the problems stood out as the significant difficulty for most students. The students selected on average 2.1 of the six options available. Four of the options — "overwhelmed," "time consuming," "irrelevant information," and "difficulty finding" — were each selected by about 38% of the students. Fewer students found outdated information and general difficulty of using electronic resources a problem — 26% and 24% respectively.

Question 11 asked students what contributed to their feeling prepared. "Class materials" was selected by 74% of the students, "electronic resources" followed closely with 70%. "Search engines" received responses from 67%, "assistance from instructors" received 61%. "Instructional library materials (e.g., videos, research guides)" and "librarian instruction" received responses from 41% and 38% respectively. "Support from classmates/friends" was selected by 40% of students.

Values (Questions 7, 9, 17)

Three questions treated student values associated with research and resources. They asked how students initiated their research, what quality associated with information was most important, and which resources they preferred to use.

In question 7, nearly 40% of students said that they begin their research for a paper with a search engine. For most that means Google is the primary starting place since it is the dominant search engine. "Electronic resources" are the primary starting point according to 30% of survey respondents. Less than 20% begin their search in the library catalog with another 10% mentioning class materials as the starting point.

In question 9, students ranked the importance of features of information resources. Approximately 75% of the students reported "reliability" of sources with the highest importance. Most students recognize the need to use appropriate information resources. Only 36% ranked quantity and another 36% convenience with the highest importance. Format was ranked highest by only 19% and hyperlinks to other sources by 15%.

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In question 17, students were asked to rank the value they placed on particular resources. On a scale of 1 to 5, “open Web sources” received the highest rating at 3.90 and “library databases” ranked right behind with 3.81 in student preferences as valued resources. E-journals have higher value than print journals 3.62 versus 3.09. But print books (3.43) ranked higher than library eBooks (3.14). Open Web eBooks (3.13) have about the same value to students as library eBooks.

Usage (Questions 8, 18, 21, 35)

Four questions examined student usage of resources. How many resources do you use? Which ones do you use most often? What is your single most used information tool? Do you prefer electronic or print for your text book?

In question 8, 64% of students reported using between 5 and 15 sources for the typical research paper. Another 21% use five or less and about 16% use more than 15.

In question 18, almost 70% of students reported that they regularly or almost always used open Web resources and 33% reported usage of open Web eBooks. With respect to library resources, 46% said they regularly or almost always used library databases, 37% library e-journals, 30% the library catalog, and 22% library eBooks.

Search engines and the open Web, along with being the most valuable — 3.90 on a scale of 1 to 5 (question 17), are also perceived by 70% in question 18 as the most commonly used. Library databases (3.81) are a close second as valued resources but a distant second in usage (46%). With respect to eBooks, library and open Web eBooks are valued about equally in question 17 (3.14 and 3.13 respectively) but open Web eBooks are reported in question 18 as being used more — 33% versus 22%.

Question 21 was an open question asking students to report the single most important tool they use when searching for information. The total number of responses was 1,171. When the terms in the responses are grouped into three categories, open Web has the highest number of mentions with 424; library has 279; and other has 83. In the open Web category, Google (363) topped the list and search engines followed behind with 58 mentions. For the library, databases topped the list with 146 mentions with library catalog at 22, **EBSCO** 22, and library 19. For the “other” category, the Internet was mentioned 107 times and computers 73.

In question 35, students prefer print textbooks (60%) over e-textbooks (36%). Textbooks are used for class participation and for tests over the material covered in the textbook. Interactions with textbooks therefore differ

from interactions with books that are used during research for assignments or for personal use. Books used for research or personal use do not need to be intensely studied for tests. Students have established methods of studying print textbooks. The students in this survey who prefer print textbooks have either not found e-textbook presentation formats and study tools as amenable to intensive study or they have not learned how to use the new formats to their advantage or a mixture of both since e-textbook formats are varied.

Information Literacy (Questions 22, 23, 24, 25, 26, 27, 28, 30)

In this group of questions, students’ understandings of concepts concerning information are explored. Topics include information literacy, plagiarism, accuracy, objectivity, and peer review.

Question 22 asked students to describe the term “information literacy.” Of the 1,036 responses, 460 used words related to finding information, 307 referred to evaluating information, and 263 used terms related to using information. Six referred to knowing when you need information.

Some students apparently went to the Web to find an answer. Among the responses, 17 were paraphrased iterations of the quote “... the ability to know when there is a need for

information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.” The quote can be found with a Google search on “information literacy definition.” It is

from the first entry of the search results — a Wikipedia entry which quotes the definition from the National Forum on Information Literacy.

In question 23, students were asked to identify plagiarism from six activity descriptions. They were asked to select all that applied. Almost all (97%) were able to identify the obvious example — “Use of ideas of others without proper citation.” This ground has been fairly well covered throughout most students’ academic lives.

Question 24 treats of the accuracy of information. The large majority of students (85%) indicated that the way “to determine the accuracy of a source” was to “check to see if factual information has been cited.” This is the best answer of those presented. All in all, however, the 46% of students that thought the copyright symbol provides assurance of accuracy and the 23% that thought “print” provides accuracy are evidence of the appropriateness of information literacy instruction.

In question 25, students were asked to select all of the options that were true with respect to *Encyclopedia Britannica*. The most common response, by 33% of the respondents, was “not sure.” Just over 25% indicated that it was a good substitute for Wikipedia. Another 20%

understood that *Britannica* is a peer-reviewed source of information. Further evidence of the need for information literacy instruction was provided in this question by the 30% of responses that identified *Britannica* as a primary source and the 13% that thought it was an electronic journal.

Question 26 asks, “Which of the following resources provides objective information on elections? Select all that apply.” Given the current level of cynicism in the polarized electorate, it is heartening to see that nearly two-thirds of the respondents recognized that an official government election Website would likely have reasonably objective information on elections. Almost half of the students reported skepticism of the debates as a place for objective information. That may be a reflection of the perception that the candidate they did not favor was unreliable. A fair percentage of the population has a low evidential threshold for the integrity of information with 16% selecting “television campaign advertisements” as an objective source of information.

Question 27 probes student understanding about the nature of scholarly journals and the processes of scholarly research. It asks students to select all of the statements that are true of scholarly journals. Less than half (46%) were familiar enough with scholarly journals to know that they report original research. Over a third (38%) was unaware of the disciplinary focus of most research journals. Just over 27% of respondents indicated that they were “not sure” which statements were true.

Question 28 asks students to identify “the most authoritative source for a paper on modern environmental issues” from a selection of six descriptions of sources. Only 44% selected “A peer-reviewed journal, titled *Environment, Development and Sustainability*.” It was the most appropriate statement provided. Nearly a quarter of the students (24%) selected “World Wildlife Fund Chairmain **Russell E. Train**’s book titled *Politics, Pollution, and Pandas: An Environmental Memoir*.” It sounds impressive but its selection demonstrates a lack of understanding of the nature of a memoir as opposed to a peer-reviewed journal article. Another 23% decided on the safer answer “not sure.”

Question 30 asks: “Without looking up the answer, select the materials that you are certain the library provides access to via the library catalog. Select all that apply.” The selection of options included “books,” “electronic articles,” “print articles,” and “eBooks.” There were 3,268 selections, which is an average of just under 3.1 selections for the 1,073 students who answered the question. Books were selected by 85% of the students, electronic articles by 80%, print articles by 72%, and eBooks by 67%. The 85% response rate for books begs an understanding of how 15% define a library catalog. It bespeaks a near total absence of experience with a library catalog or a very different framework for its definition.

Libraries without a discovery platform do not include journal articles in catalog searches. Therefore, the high percentage of students (80%) certain that the library catalog includes

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electronic articles and the 72% that selected “print articles” means their experience of a catalog includes a discovery platform or perhaps they associate anything found through the library Website as part of the catalog.

The lower showing for eBooks (67%) may be a reflection of the lower probability of a search term pulling up an eBook in the catalog. They are, for most libraries, a minority portion of the collection. It may also reflect unfamiliarity with the interface to eBooks through the catalog. For some, it may also mean that their library does not have eBooks.

Instruction (Questions 15, 16, 19, 29)

Four questions examined student perceptions of and experiences with instruction. Which library instructional materials are the most helpful? How did you learn about the library’s electronic resources? Who do you ask for help? What kinds of instruction have you had?

Question 15 asked which instructional library materials might help with research: research guides, handouts, tutorials, videos, interactive activities or other. On average the students selected 2.67 types of instruction. Research guides was selected by 77% of the students. Handouts garnered 61% of the votes. Tutorials, videos and interactive activities each received about 40%.

Question 16 asked students to rank how often they use particular individuals for help with a research paper. Instructors at 68% garnered the most responses (tally of sometimes, regularly, or almost always). Family members and classmates were second and third respectively with 62% and 61%. Friend was fourth at 57% and library staff was last with 42%.

Question 19 addressed to whom students turn for information about library resources. Instructors had the highest percentage of selections with 74%. Librarians were next with 54%. The library Website followed with 47% and word of mouth with 34%.

In question 29 concerning instruction in library resources, 61% of students reported visiting the library as part of a course one or more times and 53% had a visit by a librarian in a course one or more times. Nearly a third of students (29%) reported enrolling in a class that primarily taught research skills. Another 18% reported having a specific librarian “serve as a resource” for a class and 8% made an appointment with a librarian.

Technology Use (Questions 5, 6, 31, 32, 33, 34)

Six of the survey questions gathered information about student use of hardware and software — smart phones, e-readers, apps, citation management software, and digital badges.

In questions 5 nearly two-thirds of the students reported having smart phones. In question 6, when asked about having an e-reader, Kindle (17%) and iPad (15%) were the most popular. About 7% had Nooks. Most “other” devices students reported using were Android tablets, PCs, or smart phones for e-reading.

Question 31 asked students about the desirability of borrowing an e-reader from the library. Nearly two-thirds of the students were interested but only about a third (35%) was very interested; 27% said somewhat interested. About a third (35%) of students was undecided or not much or not at all interested.

Smart phones are growing larger to accommodate more Internet use including as e-reading devices. An improved and common software format for all e-reading would be the optimal e-reading improvement for publishers, libraries, and readers. Standards more than particular platforms and rather than monopolies are the hope for improved e-reading all around.

Question 32 asked students about their app usage. It was an open question that required a written response. Only about a third (311) of the 951 respondents named an app that they used. The two types of apps that were most often listed were Flashcards with 141 mentions and Evernote with 95. These two apps were the only examples given in the question. That likely skewed reporting since it is harder to recall than to recognize. A smattering of other brands or types of apps were mentioned — i.e., Dictionaries (26), Google Docs (11) and DropBox (10). About a third of the student responses were items mentioned in responses only once; or were not apps (e.g., pencil, paper, the Internet); or were software packages or services like Moodle, Blackboard, Word, PPT, Google, Wikipedia, Chrome, and Safari.

Question 33 asked which citation management software the students used: EasyBib, EndNote, Refworks, NoodleTools, Zotero, or Other. EasyBib was used by nearly half of the students (46%), EndNote by 12%, Refworks 11%, NoodleTools 8%, and Zotero 2%. Of the 395 responses that selected “Other,” 27% were some variation of “none” and 3% were Citation Machine or Son of Citation Machine.

Question 34 asked students to rank, on a scale of 1 to 5, the impact a digital badge would have on participation in a library session about research topics. Only 8% gave it a rank of 5 and 16% a rank of 4. Not much interest there.

Concluding Thoughts

Given the growing complexity of the information sphere and increased reliance on individual independence for understanding, navigating, and evaluating the sea of information, the amount of instruction generally received by students just scratches the surface of the information sphere and is not likely to improve research skill or knowledge levels by much for most students. A general course in research skills may provide students valuable

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general skills and concepts, which this survey demonstrates are needed. However, the survey also indicates that research is highly contextual. Skill and knowledge develop most effectively at point of need and accumulates with experience.

Three pieces of information from this survey point to research guides (e.g., LibGuides) integrated into course materials, particularly assignments, as the most effective means for moving toward comprehensive instruction of students throughout their educational experience. First, research guides were most often selected as the preferred means of assistance with research. Second, when asking for help with research, instructors and classmates were reported as the most regularly used source rather than library staff. And third, when asked about where they received their information about library resources, instructors were more often reported over librarians.

Students go to the most available source of assistance at the point they need it. Assistance integrated into assignment resources are the most available and instructors and classmate are the most often asked about resources. Research guides designed in conjunction with the instructor and integrated into assignments provides the most accessible point-of-need assistance. Assignment-based research guides would also support peer-learning. As students gain research skills through their assignments, they become more effective research assistants for their friends and classmates. 🐾