

Student Information Skills Assessment Lower Division Report

INTRODUCTION

In Spring Quarter 2010, the Kennedy Library conducted a student information skills assessment at the California Polytechnic State University at San Luis Obispo. Information skills are a foundational component of the University Learning Objective (ULO¹) of Lifelong Learning². This survey was undertaken to gauge student competencies in information skills that have been identified as key to information literacy, and which are viewed as contributing to lifelong learning. Although the survey often focuses on library-related resources available to Cal Poly students, this is fully appropriate to the particular setting, for these library resources are provided to the students, and variously employed in developing written communication and critical thinking. An assumption often made in information literacy literature is that information skills internalized in this environment become transferable to other contexts. This is an assumption with which we concur. But we also feel that the use of library resources is only one component in the development of information skills, and should not be viewed apart from expertise in the wider range of information resources, and, more particularly, should be viewed as working synchronously with collegiate curricular assignments that nurture critical thinking and written communication skills.

The survey was designed to:

1. Assess Cal Poly student competencies in the set of skills identified by the Association of College and Research Libraries (ACRL)³ as characterizing an information literate student. The information literate student can:
 - a. Identify a research question or thesis statement
 - b. Determine the information requirements for a research question
 - c. Identify a search strategy using a variety of resources
 - d. Locate and retrieve relevant information
 - e. Understand the ethical and legal issues surrounding the use of information

¹ University Learning Objectives website, <http://www.ulo.calpoly.edu/>

² Lifelong Learning website, http://www.ulo.calpoly.edu/facultyandstaff/lifelong_learning.html

³ ACRL Information Literacy Competency Standards for Higher Education, <http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm>

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2. Assess whether there is measurable progress in these competencies between lower and upper division students.
3. Assess whether a correlation exist between higher levels of competency and student participation in library instruction sessions.
4. Assess particular weaknesses in student competencies to inform steps for improving library support for student information skills and lifelong learning.

ABOUT THE SURVEY

The scenario-based questions for this survey were designed to identify student competencies by measuring performance as aligned with specific Information Literacy Learning Objectives established by the Kennedy Library in 2009. Two surveys were administered: one for lower division and one for upper division students. The survey was administered from May 10 through June 11, 2010. Invitations to participate were delivered via email to 1,332 lower division and 2,905 upper division students. In addition, an open invitation was posted on the Kennedy Library website, and faculty and instructors who had previously brought students for library instruction were encouraged to announce the surveys to their current students. Approximately 2% of the responses came from these latter invitations, but the majority came from the email invitations. Without adjusting for these 2%, the lower division response rate to the email invite was 27% (357/1332) and the unadjusted upper division response rate was 20% (578/2,905). The high response rate was doubtless encouraged by the promise of cash prizes. After a summary of recommendations, this report presents detailed results and analysis of the lower-division survey.

SUMMARY AND RECOMMENDATIONS

I. (Demographic Question 4) 59% of the lower division respondents attended at least one instruction session. This percentage is 11% higher than upper division attendees, and reflects collaborative efforts of the Cal Poly campus and Kennedy Library to provide instruction to A1 and A3 GE classes. These sessions are critically timed to coincide with assignments (most often papers) requiring research.

Red: Best Answers
Blue: Inaccurate answers that received high number of responses

II. Higher percentages of attendees consistently selected more appropriate responses than non-attendees across a range of questions:

- (Q. 1) Most promising thesis statement: 9% higher (58% vs. 49%)
- (Q. 2) Most appropriate concepts: 9% higher (73% vs. 64%; 70% vs. 61%)
- (Q. 3) Best tools for finding scholarly discussions: 8% higher (75% vs. 68%; 67% vs. 56%)
- (Q. 4) Accessing databases via Portal: 15% higher (77% vs. 62%)
- (Q. 5) Ways to access help from Kennedy Library: Help Desk/11% higher (77% vs. 62%); College Librarian/12% higher (69% vs. 57%); Chat reference/18% higher (46% vs. 28%)
- (Q. 6) Appropriate selection of catalog as place to look for books: PolyCAT/9% higher (73% vs. 64%); Link+/17% higher (54% vs. 37%)
- (Q. 9) Appropriate databases to search for topic: ERIC/7% higher (55% vs. 48%); PsycINFO/ 7% higher (38% vs. 31%)
- (Q. 13) Locating full-text by clicking FIND IT: 11% higher (53% vs. 42%)
- (Q. 14) Requesting article through Interlibrary Services: 7% higher (54% vs. 47%)
- (Q. 15) Credibility: expertise of author/ 14% higher (74% vs. 60%)
- (Q. 17) Reasons for citation: to give credit/12% higher (76% vs. 64%); to avoid plagiarism/10% higher (74% vs. 64%); so other readers can find sources/11% higher (73% vs. 62%)
- (Q. 18) Tools to consult for citation: Owl at Purdue/21% higher (65% vs. 44%); APA Manual/17% higher (60% vs. 43%); Chicago Manual of Style/16% higher (40% vs. 24%)
- (Q. 19) Ethical use of information: 12% higher (73% vs. 61%)

The above comparisons of responses provide a clear correlation between lower division session attendance and greater awareness of how to access and retrieve information, as well as an awareness of how to evaluate and use it. The correlation, however, should by no means be viewed as the sole cause of the better response averages, but rather as a contributing factor. The Cal Poly campus and Kennedy Library effort to provide sessions linked to courses with writing components (GE A1 and A3 tracks) steers students already

*engaged with these same issues into the sessions and so the influence must be attributed to the combination of factors. (It is also **possible** that lower division non-attendees have not yet had to write a paper and so have not yet engaged with these issues at all.) Support for the efficacy of the sessions, however, can be seen in the report comparing upper division survey results with lower division survey results. There, a pattern emerges in which the responses of lower division students who attend sessions are often on a par, or better, than the responses of upper division students who have NOT attended sessions. (Presumably upper division students have at some time in their career HAD to write a paper. For details see Analysis of Upper and Lower Division Results.)*

Recommendations:

- 1) As attendee responses were consistently higher than non-attendees, more efforts should be made to provide sessions to lower division students who are engaged in writing papers.*
- 2) While it is encouraging to see that attendee responses were consistently higher, the overall average in some cases is quite low. In instruction, handouts, and web presence, aim to improve student understanding of resources and issues broached in the questions above.*

III. (Q. 6, Q. 13, Q. 14.) On these questions large percentages of attendees and non-attendees alike selected inappropriate responses bearing on the right utility (PolyCAT, Link+, Academic Search Elite) for retrieving the right type of source or item. An inadequate mental mapping of resources to tools can be inferred from the volume of these inappropriate responses.

Recommendations: *In instruction, handouts, and web presence, strive to create a clear mental mapping of the information landscape, and of resources to tools.*

IV. (Q. 10) When asked about characteristics of peer-reviewed/scholarly journals attendees (66%) and non-attendees (55%) selected the most inappropriate response, i.e., “scholarly/Peer-reviewed journals are written by paid journalists.”

Recommendations: *In instruction, handouts, and web presence, strive to delineate the characteristics of scholarly/peer-reviewed sources.*

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V. (Q. 11, Q. 12) Though attendees scored slightly higher than non-attendees on these two questions relating to the use of AND -- OR in Keyword and Subject search queries, the overall rates for the two questions were very low 43% overall recognized best answer for OR used in a Keyword search and 53% overall recognized best answer for AND used in a Subject search.

Recommendations: *Address this issue directly in instruction, handouts, and web presence.*

VI. (Q. 16) Only 35% of attendees and only 20% of non-attendees correctly identified a particular citation as belonging to an article.

Recommendations: *In instruction, handouts, and web presence, provide more tools/exposure to the components of a citation and citation comprehension.*

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Blue: Inaccurate answers that received high number of responses

DETAILED LOWER DIVISION RESULTS

357 students responded to the survey: 68% freshmen, and 32% sophomores. In the tables that accompany each question below, responses are divided into two categories: students who attended one or more library instruction sessions and students who did not attend any sessions. In the presentation of scenario-based questions an overall percentage-score is also included to reflect combined competence of the two groups. Red highlighting indicates best and preferred answers, while blue highlighting indicates inappropriate answers that were nonetheless selected by a high number of respondents. Analysis is provided after any table that produces notable data or suggests where further interventions are warranted.

Demographic Questions

1. What is your current Cal Poly classification?

Classification	Attended		Did not Attend	
Freshmen	138	57%	106	44%
Sophomore	65	29%	48	42%

2. In which College are you a student?

College	Attended		Did not Attend	
CAED	52	79%	14	21%
CAFES	52	70%	22	30%
CLA	47	61%	30	39%
CENG	22	32%	47	68%
COSAM	20	49%	21	51%
OCOB	15	54%	13	46%

Analysis: CAED (79%), CAFES (70%), and CLA (61%) had the highest percentage of attendees. CENG (68%), COSAM (51%), and OCOB (46%) had the highest percentage of NON-attendees

Red: Best Answers
 Blue: Inaccurate answers that received high number of responses

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3. What is your gender?

Gender	Attended		Did not Attend	
Female	139	61%	87	39%
Male	69	53%	61	47%

4. How many library instruction sessions have you attended since your arrival at Cal Poly?

Attended One or more		Did not Attend	
209	59%	148	42%

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Analysis: 59% of the lower division respondents attended at least one instruction session. This percentage is 11% higher than upper division attendees, and reflects collaborative efforts of the Cal Poly campus and Kennedy Library to provide instruction to A1 and A3 GE classes. These sessions are critically timed to coincide with assignments (usually papers) requiring research.

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Scenario Question

Underage drinking is an issue on college campuses. What are the causes, concerns, and proposed possible solutions to underage drinking among college and university students?

1. Which of the following is the most promising research question for your paper?
(choose one)

<i>Analysis: Students who attended</i>	Statement	Attended		Did not Attend		Overall
	College binge drinking and its psychological causes can be reduced through campus intervention programs	121	58%	73	49%	54%
	High percentage of college students engage in binge drinking because they want to “look cool” or “fit-in”	37	18%	22	15%	17%
	Alcoholism is a big problem	14	7%	14	9%	8%
	Binge drinking in my college has resulted in the expulsion of two students	3	1%	3	2%	2%

Students who attended sessions scored 9% higher than students who did not attend sessions (hereafter, “attendees”) sessions scored 9% higher than students who did not attend sessions (hereafter, “non-attendees”).

2. Which of the below are the most appropriate concepts for this topic? (check all that apply)

<i>Analysis: While the majority of attendees and non-attendees</i>	Appropriate Concepts	Attended		Did not Attend		Overall
	Student Behavior	153	73%	95	64%	69%
	Substance Abuse	146	70%	91	61%	66%
	Drunken Euphoria	53	25%	38	26%	25%
	Party Animals	35	17%	23	16%	16%

selected the two most appropriate responses, attendees did so by a 9% larger margin in both cases (73% vs. 64% and 70% vs. 61%).

3. Which of the following are the best tool(s) to find scholarly discussions on the above topic? (check all that apply)

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Blue: Inaccurate answers that received high number of responses

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Analysis: Attendees and non-attendees alike favored the	Best tool	Attended		Did not Attend		Overall
	Library databases	157	75%	101	68%	72%
	Library catalog	140	67%	83	56%	62%
	Google scholar	96	46%	67	45%	46%
	Wikipedia	15	7%	14	9%	8%
	Google	8	4%	7	4%	4%
	Interview Cal Poly officials, advising center, & students	8	2%	4	2%	2%

three most appropriate responses. 7% more attendees, however, selected databases, and 11% more attendees than non-attendees selected the library catalog.

4. If you want to search the library databases from the comfort of home, you:
(check all that apply)

Analysis: Attendees evidenced more awareness of the	Off-campus access	Attended		Did not Attend		Overall
	Log in to My Cal Poly Portal and click on the library services tab	160	77%	92	62%	71%
	Go to the library homepage and click on article databases	122	58%	77	52%	56%
	Conduct a google search for the database	30	14%	36	24%	18%

varied ways of accessing the databases by selecting the most appropriate answers at margins of 15% and 6% respectively.

5. If you want help from the Kennedy Library for this topic, who can you consult?
(check all that apply)

Consult?	Attended		Did not Attend		Overall
Research help desk at	146	70%	88	59%	66%

Red: Best Answers
Blue: Inaccurate answers that received high number of responses

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Analysis: Attendees	the back of the library					
	College Librarian	144	69%	84	57%	64%
	Online Chat Reference	97	46%	41	28%	39%
	LIT	54	26%	32	22%	24%

selected appropriate answers at larger margins than non-attendees (11%, 12%, 18% respectively).

6. Where would you look for books on this topic? (check all that apply)

Analysis: (Nearly ¾ of the attende	Book sources	Attended		Did not Attend		Overall
	PolyCat	153	73%	94	64%	69%
	Link+	113	54%	55	37%	47%
	Academic Search Elite	93	45%	57	39%	42%
	ERIC	37	18%	27	18%	18%

es selected PolyCAT, the online catalog for Kennedy Library. This was 9% higher than non-attendees. In addition, 17% more attendees than non-attendees appropriately identified Link+, a consortial resource that vastly multiplies student access to materials. Though 14% higher, however, the attendee rate was only 54%. Also, large percentages of both attendees and non-attendees inappropriately listed the database Academic Search Elite as a place to look for books on a topic (while this database has some books, it consists mostly of articles and other materials). The prevalence of this inappropriate response indicates that that further work needs to be done to clarify the proper association of document-types (articles, books, etc.) with the appropriate utilities (catalogs, databases, etc.)

7. You have found the following book in PolyCAT: Student Drug Use and Alcohol Abuse. The catalog record reads:

“MAIN COLLECTION. HV5128.U5 T68 NOT CHECKED OUT”

To get the item from the shelf, what do you do? (check all that apply)

Red: Best Answers
Blue: Inaccurate answers that received high number of responses

<i>Analysis: Although attendees and non-attendees alike selected the most</i>	Find a book	Attended		Did not Attend		Overall
	Consult a map of the library	130	62%	85	57%	60%
	Look in the stacks on the third floor	35	17%	10	7%	13%
	Look in the stacks on the second floor	22	11%	13	9%	10%
	Ask a Librarian	16	8%	7	5%	6%

obvious answer (i.e., a map of the library) 10% more attendees than non-attendees identified the floor where the item would currently be found, indicating their ability to navigate the library and retrieve sources Few respondents in both groups selected "Ask a Librarian." This suggests that work needs to be done to encourage students to ask questions of librarians.

8. You have found the following item in PolyCAT:

"Journal of studies on alcohol and drugs. Call Number RC565.Q8 (Per)

Library has BOUND: v.68- ; 2007-

LATEST ISSUES SHELVED BY CALL NUMBER IN CURRENT Periodicals"

Where would you find an issue from 2008? (check all that apply)

<i>Analysis: This question is fatally flawed and</i>	Find an Issue	Attended		Did not Attend		Overall
	On the first floor in current periodicals	104	50%	54	36%	44%
	In the main collection	44	21%	27	18%	20%
	On the second floor	25	12%	15	7%	11%
	On the fifth floor	24	11%	15	7%	11%

intended revision was omitted) and any data is compromised. (Specifically,

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depending on the specific journal and its frequency, issues from 2008 might be found on the first floor or the main collection.)

9. In which databases would you look for scholarly/peer-reviewed articles for this topic? (check all that apply)

Note: [In the survey ERIC was not just given by name, but

Databases	Attended		Did not Attend		Overall
ERIC	114	55%	71	48%	52%
PsycINFO	79	38%	46	31%	35%
Europa World Plus	19	9%	14	9%	9%
GeoRef	13	6%	13	8%	7%

described as an education database, and PsycINFO was also described as a psychology database].

Analysis: 7% more attendees (55%) vs. non-attendees (48%) identified PsycINFO as an appropriate database, and similarly, 7% more attendees (38% versus 31%) identified ERIC. However, only a bare overall majority selected PsycINFO (52%) and only 35% overall selected ERIC. All these numbers are significantly lower than for upper division students and reflect lower division unfamiliarity with identifying appropriate databases. This suggests that more steps should be taken to improve lower division ability to identify and select appropriate databases.

10. Which of the following features usually signal that a journal is scholarly/peer-reviewed and NOT a popular magazine? (check all that apply)

Analysis: A majority of

Scholarly/Peer-reviewed	Attended		Did not Attend		Overall
Written by paid journalists	137	66%	81	55%	61%
The presence of footnotes	131	63%	75	51%	58%
The presence of an abstract	19	9%	9	6%	8%
It is published weekly	14	7%	6	4%	6%

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both attendees and non-attendees selected one of the least appropriate answers. Attendees actually inappropriately selected it by a an 11% margin. Attendees cited the presence of footnotes at an 11% higher rate than non-attendees, but very few students in either group (9%, 6%) identified the appropriate response of “abstract”. This is one area in which large improvement is seen between the upper division and lower division scores, and the lower division scores suggest how important it is to highlight the characteristics of a scholarly/peer-reviewed journal.

11. Of the searches listed below, which will get you the MOST total results? (check one)

<i>Analysis:</i> <i>Only 43% overall selected the most appropriate response, with a</i>	Most results	Attended		Did not Attend		Overall
	Keyword Search: College students OR University students	94	45%	61	41%	43%
	Keyword search: College students AND University students	61	29%	34	23%	27%
	Subject search: College students AND University students	71	8%	12	8%	8%

negligible difference between attendees and non-attendees (4%). This suggests that more work should be done with lower division students to help them understand how OR works as an operator.

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12. The same searches are listed again here. Which will get you the FEWEST total results? (check one)

Analysis:
The
overall
score on

Fewest results	Attended		Did not Attend		Overall
Subject search: College students AND University students	118	56%	71	48%	53%
Keyword search: College students OR University students	40	19%	27	18%	19%
Keyword search: College students AND University students	13	6%	9	6%	6%

this question about AND in a subject search was 10% higher than the preceding question regarding OR in a keyword search. Attendees scored 8% higher.

13. You have located an ARTICLE in a library database but the full-text is not available in THAT database. What do you do next? (check all that apply)

Analysis:
11%
more
attend
ees

Full-text not available	Attended		Did not Attend		Overall
Click Find it	110	53%	62	42%	48%
Try google books	90	43%	52	35%	40%
Try link+	76	36%	33	22%	31%
Try google scholar	38	18%	32	22%	20%

(53%) than non-attendees (42%) picked the best answer (Find it). Both groups, however, favored two inappropriate responses (Google Books and Link+) over a more appropriate response (Google Scholar). (Link+ does not deliver articles, and Google Books does so only incidentally.) These responses suggest that further efforts should be focused on resolving student confusion over appropriate places to find books versus articles.

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Blue: Inaccurate answers that received high number of responses

14. You have located an article in a library database but have not found the full-text in ANY of the library databases. What do you do next to get the article? (check all that apply)

Analysis

: 7%

more

attendee

s (54%)

versus

non-

Full-text not available in any database	Attended		Did not Attend		Overall
Request the article through Interlibrary services	113	54%	70	47%	51%
Request the article through Link+	99	47%	36	24%	38%
Search PolyCat for the journal article	52	25%	28	19%	22%

attendees (47%) selected the best response, but a large percentage of both attendees and non-attendees also selected an inappropriate response (Link+). In fact, 23% more attendees than non-attendees selected Link+. This suggests both success and failure in instruction: success in that they know they can get off-campus items from Link+; but failure in that they are unaware that it is not appropriate for article requests. Again, more should be done to create a mental model for students that matches types of resources (articles, books, etc.,) to the proper utility (Link+, databases, etc.) Though this recommendation is ostensibly limited and library-centric, it speaks to the larger information-skills issue of recognizing types of resources and knowing where/how to retrieve them, transferable to different information environments that students will encounter after graduation.

15. What questions should you consider when determining if a source is credible? (check all that apply)

Credible sources	Attended		Did not Attend		Overall
Is the author an expert?	115	74%	89	60%	57%
Is it biased?	136	65%	84	57%	62%
When was it	130	62%	79	53%	59%

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*Analysis:
Attendees
consistently selected
more appropriate*

published?					
Are the statements supported by sound reasoning	121	58%	85	57%	58%
Are the facts correct?	120	57%	73	49%	54%
Why is the author writing it?	103	49%	57	39%	45%

responses in higher ratios, 14%, 8%, 9%, 1%, 8% and 10% higher. This suggests a clear value in instruction sessions for compassing the criteria for evaluation. Again, however, one would still like to higher totals for both groups, and this suggests where more emphasis might be placed.

16. Examine this citation: Nicolai Rubenstein, "The beginning of Niccolo Machiavelli's Career in the Florentine Chancery," *Italian Studies* 9 (1956): pp 72-91. Is this citation for? (check one)

*Analysis:
Although
15% more*

Citation is for?	Attended		Did not Attend		Overall
An article in a journal	73	35%	30	20%	26%
A chapter in a book	66	32%	53	36%	33%
A book	23	11%	9	6%	9%
An encyclopedia entry	7	3%	7	5%	4%

attendees than non-attendees selected the one appropriate response, only 35% of the attendees did so. It is not surprising that lower division students are unclear about this, but this indicates a place where early intervention is much warranted.

17. Which of the following are valid reasons for placing citations in your paper? (check all that apply)

Why citing?	Attended	Did not Attend	Overall
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Red: Best Answers
Blue: Inaccurate answers that received high number of responses

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Analysis is:

To give credit to the work of others	159	76%	95	64%	71%
To avoid plagiarism	154	74%	94	64%	69%
To identify works so readers can also find them	152	73%	92	62%	68%
To fill out the word count	7	3%	6	4%	4%

Attendees consistently identified appropriate responses at higher rates than non-attendees. (76% vs 64%, or 12%; 74% vs. 64% or 10% and 73% vs. 62% or 11%).

18. As you are writing your paper, when you need help with a specific citation style you can consult (check all that apply)

Analysis of the answers supplied for this question

Citation style	Attended		Did not Attend		Overall
The Owl at Purdue	135	65%	65	44%	56%
APA Manual	125	60%	64	43%	53%
The Chicago Manual of Style	84	40%	36	24%	34%
Call Research Desk at the Library	56	27%	31	21%	24%
Roget's Thesaurus	14	6%	6	4%	5%
MLA handbook	7	3%	5	3%	3%
Easybib.com	3	1%	4	2%	1%
Online citation generator	4	2%	2	1%	1%

were appropriate, and attendees consistently selected appropriate resources at higher rates than non-attendees, with differences as high 21% and 17%. This clearly suggests a positive value of instruction.

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19. When is it ethical to use the ideas of another person in a research paper? (check one)

<i>Analysis:</i> <i>Nearly ¾ of the attendees</i>	Ethical?	Attended		Did not Attend		Overall
	Only when you give them credit	153	73%	90	61%	68%
	It is never ethical to use someone else's ideas	10	5%	7	5%	5%
	Only when you receive their permission	4	2%	3	2%	2%
	Only if you do not use their exact words	1	.04%	1	.04%	.04%

selected the appropriate response and this rate was 12% higher than non-attendees.

20. In your time as a Cal Poly student, when you have needed information for your research, which of the following have you done? (check all that apply)

<i>Analysis:</i> <i>Both attendees and non-</i>	Need information?	Attended		Did not Attend		Overall
	Go to google	115	55%	76	51%	54%
	Ask a friend	80	38%	46	31%	35%
	Consult my college librarian	52	25%	17	11%	19%
	Go to the Library	52	25%	25	17%	19%
	Go to "online chat" widget on the library web site	36	17%	12	8%	13%

attendees have consulted Google and friends more frequently than the Library and at similar ratios (55% vs. 51%, and 38% vs. 31%). However, attendees more frequently consulted their College Librarian (25% vs. 11%) than non-attendees, and also went to the library (25% vs. 17%). This suggests that students who attend instruction are more likely to use these resources.