

Information Literacy for Electronic Resources

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Abstract: Academic libraries have recently positioned themselves in the twenty-first century with online databases that students can remotely access via the Internet. Online courses and electronic resources are a central component of higher education. Effective library instruction can improve academic performance and was traditionally delivered in a classroom environment. The twenty-first century learner requires a dynamic learning environment with emerging technologies, which may include online instructional modules. In order to determine the need for delivering library instruction with online instructional modules, a needs assessment was conducted to identify common themes, gaps, strengths, weaknesses, and preferences pertaining to student usage of online library resources. The subjects, mostly English 100 undergraduate students at the University of Hawai'i Maui College (UHMC), voluntarily participated in an anonymous online survey. The results indicate a primary need for library instruction regarding electronic resources. The data gathered may be used by library staff to improve information literacy in the area of electronic resources.

Introduction

Emerging technologies and digital files have revolutionized library and information services. Academic libraries have positioned themselves in the twenty-first century with online databases where students can remotely access electronic resources via the Internet. Establishing a virtual presence to complement a physical presence has become a necessity for higher educational institutions that include online courses and online resources. Twenty-first century learners include digital natives and digital immigrants with varying demographic and psychographic profiles. Learners also have varying physiological, social, cognitive and affective characteristics. Since emerging technology is a dynamic force, teaching and learning must also be dynamic to meet diverse learner needs including anytime, anywhere access (Johnson, Adams & Cummins, 2012, p. 4) Effective library instruction can improve academic performance amongst students. This may include the implementation of online instructional modules.

University of Hawai‘i, Maui College (UHMC) has experienced a 53% growth in enrollment over the last five years and a significant increase in online courses (“UH-Maui College,” 2011). Consequently, the number of new students who are taking online courses and who have not yet acquired knowledge or skills regarding information literacy has increased. UHMC Library conducts face-to-face (F2F) library instruction and reaches approximately 25% of students enrolled in English 100 (E. Peterson, personal communication, October 25, 2011). Students, however, observe without physically interacting with online databases or electronic resources. An online tutorial allows interaction, is available around the clock, and reaches a greater number of students who may or may not be able to attend F2F sessions. A needs assessment will assist with targeting the context, knowledge, ability, interest, preferences, and needs of UHMC students.

Therefore, the purpose of this needs assessment was to identify behavioral and attitudinal use of online information resources by UHMC students and determine the need to implement online instructional modules for electronic resources.

Background

Information literacy is an essential component of a successful academic career (Oakleaf & Owen, 2010). Students who lack these skills experience delays and frustration when attempting to complete course-related work which requires research. According to the American Library Association (1989), “To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (Presidential Committee on Information Literacy: Final Report, para. 3). Studies indicate a need to improve information literacy skills early, particularly during the first-year where undergraduate students’ computer proficiencies do not correlate with their research knowledge (Freeman & Lynd-Balta, 2010; Oakleaf & Owen, 2010). The ability to locate information is necessary for quality research.

College students use the Internet for a variety of personal, social, professional, and academic reasons (Kirkwood, 2008). Web-based resources can partially fulfill academic purposes of college students due to online information seeking behavior and technology integration in pedagogical design (Kirkwood, 2008). Utilizing online library resources can benefit F2F, hybrid, or online learning environments. A recent series of studies at several Illinois universities, however, revealed students’ research behavior to be at a lower level than even librarians were aware (Kolowich, 2011). In other words, students were exhibiting signs of information illiteracy behavior. Thus, we can identify a gap between frequent use of the Internet and information literacy for students.

One example is the low usage of electronic books because most students are unaware of this easily accessible option (Al, Soydal, & Tonta, 2010). Students who use electronic books prefer the personalized research experience with the convenience of remote access, contextual search capabilities, personal bookshelves, annotation tools, automatic citations, mobile options and over 459,000 titles accessible through ebrary, an online digital library. An instructional module designed specifically for ebrary and aggressively

promoted, would increase students' awareness, teach them relevant skills, encourage proactive research, and bridge distance gaps (Al, Soydal, & Tonta, 2010; "ebrary," 2012). Moreover, online library resources are available to multiple users, eliminating waitlists for checked out books.

In recent years, library databases have grown, technologies to deliver and view electronic resources have improved, and the diversity for which electronic resources can be accessed across multiple electronic platforms has also improved (Head & Eisenberg, 2010). Cloud based applications have changed the scope of how information is searched, accessed, stored and learned (Johnson, Adams, & Cummins, 2012). Online databases such as ebrary, EBSCOhost and Academic Search Premier provide cloud solutions for students seeking information. As a result, the purposes of library services have shifted in order to meet the changing needs of students.

Methodology

Target Population

The target population included undergraduate students at the UHMC, which consisted of men and women of various ethnic and cultural backgrounds. Most are employed in the tourism, government, retail, and restaurant industries, have resident status, and are between the ages of 18 and 65 years old (UH Institutional Research, 2011). Subjects were current and recent English 100 level students. A target population analysis determined 28 instructors teaching 78 sections. A possible maximum 1,691 students were potential subjects for the study if all sections were full ("University of Hawai'i Maui College," 2011). Study subjects were solicited via course instructors as identified from the target population analysis.

Protocol

This study utilized a communication process to gather data from an anonymous online survey questionnaire. The researcher consulted with a UHMC librarian who provided resources for collecting existing anecdotal data and for subject matter expertise (Witkin & Altschuld, 1995). Reviews of similar surveys provided insight for developing the survey questionnaire (Head & Eisenberg, 2009; Head & Eisenberg, 2010; Katz, 2007). A mixed-method was used to collect and analyze data. A field test of the survey draft was conducted with two students from the target population, four former UHMC students, and one University Of Hawai'i Mānoa graduate student followed by one-on-one interviews. Feedback information was used to make improvements to survey questions and answer choices. The Institutional Review Board at the University of Hawai'i Committee on Human Studies Program approved all materials and procedures.

Survey Questions

The survey consisted of Likert scale, multiple-choice, and open-ended questions. Included were four qualitative questions that measured students' preferences and perceptions and twenty-eight quantitative questions that measured demographics and more specific questions pertaining to usage. The questions focused on educational status and course-related research behavior.

Survey Tool

A Google form was utilized to develop, create and publish the online survey questionnaire. Google forms is a cloud-based free survey tool which collects real-time data displayable in spreadsheet and graph summary formats.

Method of Delivery

The survey was implemented online through the UH e-mail system. Since the researcher did not have access to student emails, an introductory email was sent to instructors requesting their assistance for deployment. Two weeks later, a reminder email was sent with a subsequent email for instructors to distribute to students. A link to the active survey was provided to invited participants. Subjects were asked to complete the survey within a two-week period. Due to low response, the survey was extended for an additional 10 days. The survey was available from January 25 through February 17, 2012.

Results

Forty-five (*n*) respondents completed the survey. The responses to survey questions were analyzed and some presented in tables with frequency (*f*) and percentages (%). The data was analyzed to identify common themes, gaps, strengths, weaknesses and preferences pertaining to student usage of online library resources.

Respondents ranged from 18 to 55 years of age and consisted primarily of students between the ages of 18 to 25 years of age (62%). Eighty-nine percent of the respondents were female, nine percent were male, and two percent declined to state their gender.

The educational status data identified a majority of students as full-time, attended UHMC for more than one semester, taken at least one online course, completed English 100 and received library instruction. More than half of the respondents have attended four or more semesters and more than half of the respondents have taken only one online course, as illustrated in Figure 1.

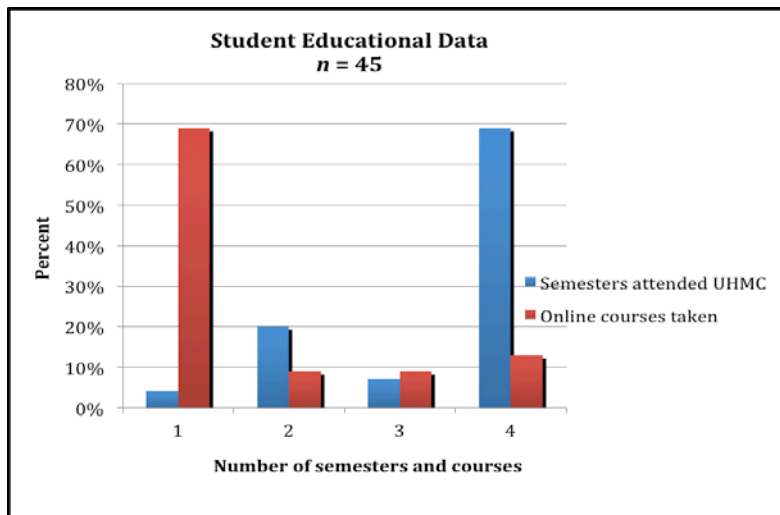


Figure 1. Respondents' semester attendance versus online courses taken.

Specific data pertaining to educational status is presented in Table 1.

Table 1: Educational status of the participants				
Question	Answer	<i>n</i>	<i>f</i>	%
Are you a part-time or full-time student?				
	Part-time	45	15	33%
	Full-time	45	30	67%
	Not sure	45	0	0%
How many semesters have you attended at UHMC (including current semester)?				
	1	45	2	4%
	2	45	9	20%
	3	45	3	7%
	4	45	6	13%
	5+	45	25	56%
How many online courses have you taken (including current semester)?				
	1	45	31	69%
	2	45	4	9%
	3	45	4	9%
	4+	45	6	13%
Have you completed English 100?				
	Yes	45	36	80%
	No	45	9	20%
	Not sure	45	0	0%
Have you had library instruction before				
	Instruction from a librarian in a classroom	45	21	47%
	One-on-one instruction at a reference desk	45	6	13%
	Instructional videos provided by a librarian	45	3	7%
	None	45	11	24%
	Not sure	45	4	9%
<i>Note: percentages are rounded to whole numbers</i>				

When asked, “Where do you access the Internet most to do your school work?” 76% of respondents reported they access the Internet from home, 24% on campus and none of the participants accessed the Internet from a public area (see Table 3). Students are more likely to use online resources to conduct scholarly research (Head & Eisenberg, 2010). This data indicates a potential need to implement online instructional modules in order to meet the needs of students who do most of their course related work from home.

A review of the responses to opinions and preferences present interesting data on students’ perspectives. All of the respondents reported using Web sites or search engines for research. Most respondents (91%) reported using course readings and materials for assignments. Most respondents reported the importance of research for grade improvement (80%) and think learning about electronic resources would help in the research process (89%). Table 2 presents opinions and preferences data.

Table 2: Opinions and preferences			
Question	Yes	No	Not sure
In your opinion, does research improve your grades?	80%	2%	18%
Do you use Web sites or search engines for research?	100%	0%	0%
Do you use course readings and materials to complete assignments?	91%	2%	7%
Do you use the UHMC library for research?	67%	31%	2%
Do you use article databases available through the library Web site for your research?	62%	31%	7%
Prior to this survey, were you familiar with research resources offered by the library?	77%	16%	7%
Would learning how to use electronic resources help with your research?	89%	9%	2%
<i>Note: percentages are rounded to whole numbers</i>			

When asked, “Which library resources do you use during your research process?” a majority of the respondents reported using EBSCOHost (38%) and ebrary (31%). All of the respondents reported course-related research to be very important or important in their completion of assignments, papers, reports, and projects. More than half (78%) of the respondents reported a familiarity with library resources and used them almost always (13%) or often (38%) during their research process. Interestingly, 51% of respondents reported being very prepared or prepared to seek research information while 62% of respondents reported choosing and writing about a topic as the most difficult part of academic research.

Data pertaining to research behavior is presented in Table 3.

Table 3: Research behavior				
Question	Answer	<i>n</i>	<i>f</i>	%
Where do you access the Internet most to do your schoolwork?				
	At home	45	34	76%
	On campus	45	11	24%
	Public area (Starbuck's, etc.)	45	0	0%
*Which library resources do you use during your research process?				
	Librarian	45	9	20%
	Hawai'i Voyager	45	9	20%
	EBSCOHost	45	17	38%
	ebrary	45	14	31%
	Britannica Online	45	4	9%
	Credo Reference	45	4	9%
	Safari Books Online	45	1	2%
	None	45	8	18%
	Not sure	45	11	24%
*Which Web sites or search engines do you use during your research process?				
	Google	45	44	98%
	Yahoo!	45	8	18%
	Bing	45	2	4%
	Ask.com	45	7	16%
	Wikipedia	45	18	40%
	Other	45	2	4%
<i>*Respondents may select more than one checkbox, so percentages add up to more than 100%</i>				
<i>Note: percentages are rounded to whole numbers</i>				

Almost all of the respondents stated learning about electronic resources (91%), learning how to use electronic resources (89%, see Table 2) and accessing resources (98%) are very important or important for academic success. In response to these survey questions, respondents were asked, “What is your preference for learning how to use electronic resources?” with 67% stating online tutorials or a combination of F2F instruction and online tutorials as the preferred method. See table 4 for more details.

Table 4: Opinions and preferences				
Question	Answer	<i>n</i>	<i>f</i>	%
Would you say learning about available electronic resources is important for your academic success?				
	Very important	45	26	58%
	Important	45	15	33%
	Somewhat important	45	3	7%
	Not important	45	1	2%
	Not sure	45	0	0%
Would you say accessing electronic resources is important for your academic success?				
	Very important	45	24	53%
	Important	45	20	45%
	Somewhat important	45	1	2%
	Not important	45	0	0%
	Not sure	45	0	0%
*What is your preference for learning how to use electronic resources				
	Face-to-face instruction	45	22	49%
	Online tutorials	45	7	16%
	Face-to-face instruction and online tutorials	45	23	51%
	Other	45	0	0%
<i>*Respondents may select more than one checkbox, so percentages add up to more than 100%</i>				
<i>Note: percentages are rounded to whole numbers</i>				

Open-ended survey questions provided further insight on research behavior, opinions and preferences. The majority of respondents expressed a general consensus for learning about research, how to seek information, citing sources and the expansion of information technology. One respondent commented, “When I do research I like to use the Internet than other materials.” Another respondent explained the following:

In the 8 years of parttime college at MCC, I have had only 1 teacher give me a hand-out and discuss using online resources, and how to tell which ones are legit and which one aren't or are a matter of opinion! We are moving further and further ahead, we need to teach students how to keep up.

Conversely, another respondent commented:

I think UHMC has a very wide variety of research assistance people from the learning center, some teacher are willing to help a student with their other subjects, library help is very convenient.

Students expressed knowledge that learning how to research is key to academic success. In addition, the overall results indicate students' desire to utilize electronic resources more effectively and frequently. Students are adept with Internet usage. All of these components can be considered while designing library instruction.

Discussion and Recommendations

Overall, analysis of the data yields an indication of context, knowledge, ability, interest, preferences, and needs of UHMC students. It is important to note, however, that only 2% ($n = 45$) participated out of the 1,691 (N) total potential subjects. Despite the low response rate, these findings yield a preliminary initiative and rationale for future research in the area of information literacy and electronic resources at the UHMC. It presents an opportunity for designing, developing, and implementing online instructional modules that meet learner needs (Head & Eisenberg, 2010).

Respondents expressed a need and desire to gain skills utilizing online library resources (see Table 3). Additional questions identified as a result of the study associate the need to integrate tutorials that also teach students how to evaluate resources. One respondent commented, “How accurate and reliable are in fact the sources from the information that is in this ever growing pool of data.” This may indicate the need to include resource evaluation as a component of library instruction.

Head and Eisenberg (2010), stated respondents in their study often used a “collaborative process” when seeking and evaluating information. Consideration for social learning is recommended. One respondent stated, “Sometime I need help narrowing down my research. It always helps to have someone help me, listen to me, and see what I am striving for.” This may indicate a need to integrate a social learning aspect when designing library instruction.

The researcher recommends additional studies. Future needs assessment studies must include a more strategic and aggressive social media campaign while working with the library staff. The pre-survey activities should include a focused strategy with incentives aimed at instructors and students. Promotion of the study would benefit significantly if implemented during the semester prior to the survey deployment.

Conclusion

Library instruction and electronic resources are relevant, necessary, and beneficial. Digital access to current information has become a priority for students and educators and libraries endeavor to provide this service (Kaul, 2008). Online library databases support students' academic pursuits. A comprehensive effort which promotes seeking, finding, evaluating, and utilizing information derived from a thorough research process can improve information literacy and thus, improve academic performance. This study addresses one element of a larger initiative.

The survey results, although from a small sample, indicate a common theme. Respondents think library instruction would improve research skills and access to electronic resources via the Internet would fit their distance learning needs. Respondents also report an interest in online instructional modules, which represents the identified gap in the study.

The study examined the behavioral and attitudinal use of online information resources by UHMC students. The purpose was to identify a potential need to implement instructional modules for electronic resources. Therefore, it is recommended that further research be conducted from a larger sample to further justify or nullify the findings of this study.

References

- Al, U., Soydal, I., & Tonta, Y. (2010). *Analysis of e-book use: The case of ebrary*. Paper presented at the 14th International Conference on Electronic Publishing, Helsinki Finland. <http://yunus.hacettepe.edu.tr/~umutal/publications/elpub-2010.pdf>.
- American Library Association. (1989). *Presidential committee on information literacy: Final report*. Retrieved from <http://www.ala.org/acrl/publications/whitepapers/presidential>
- ebrary*. (2012). Retrieved from <http://www.ebrary.com/corp/tech.jsp>
- Freeman, E., & Lynd-Balta, E. (2010). Developing information literacy skills early in an undergraduate curriculum. *College Teaching*, 58(3), 109-115. doi:10.1080/87567550903521272
- Johnson, L., Adams, S., & Cummins, M. (2012). *The NMC horizon report 2012: Higher education edition*. Austin, TX: New Media Consortium. Retrieved from <http://www.nmc.org/publications/horizon-report-2012-higher-ed-edition>
- Katz, I. R. (2007). Testing information literacy in digital environments: ETS's iSkills assessment. *Information Technology & Libraries*. Retrieved from <http://web.ebscohost.com.eres.library.manoa.hawaii.edu/ehost/detail?vid=3&hid=126&sid=d139f3f8-ce7b-4f01-932e-7e3428cf058e%40sessionmgr111&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d>
- Kaul, A. K. (2008). *E-libraries in 21st century*. Jaipur, IND: Global Media. Retrieved from <http://site.ebrary.com/lib/uhmanoa/docDetail.action?docID=10415191>
- Kirkwood, A. (2008). Getting it from the Web: Why and how online resources are used by independent undergraduate learners. *Journal of Computer Assisted Learning*, 24(5), 372-382. doi: 10.1111/j.1365-2729.2007.00265.x.
- Kolowich, S. (2011). What students don't know. *Inside Higher Ed*. Retrieved from http://www.insidehighered.com/news/2011/08/22/erial_study_of_student_research_habits_at_illinois_university_libraries_reveals_alarmingly_poor_information_literacy_and_skills
- Oakleaf, M., & Owen, P. L. (2010). Closing the 12-13 gap together: School and college librarians supporting 21st century learners. *Teacher Librarian*, 37(4), 52-58. Retrieved from <http://web.ebscohost.com.eres.library.manoa.hawaii.edu/ehost/detail?sid=beeadf8e-488d-4ab2-81ec-ddf1311b8cb2%40sessionmgr115&vid=6&hid=126&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=tfh&AN=50300767>

- Project Information Literacy. (2009). *Lessons learned: How college students evaluate and use information in the digital age*. Head, A. J. & Eisenberg, M.B. Retrieved from http://projectinfolit.org/pdfs/PIL_Fall2010_Survey_NoAppendices.pdf
- Project Information Literacy. (2010). *Truth be told: How college students evaluate and use information in the digital age*. Head, A. J. & Eisenberg, M.B. Retrieved from http://projectinfolit.org/pdfs/PIL_Fall2010_Survey_NoAppendices.pdf
- UH-Maui College enrollment climbs. (2011, January 28). *The Maui News*. Retrieved from <http://www.mauinews.com/page/content.detail/id/545543/UH-Maui-College-enrollment-climbs.html?nav=10>.
- University of Hawai'i, Institutional Research and Analysis Office (March 2011). *Spring enrollment report University of Hawai'i spring 2011 (revised)*. Retrieved from <http://www.hawaii.edu/cgi-bin/iro/maps?seuhs11.pdf>.
- University of Hawai'i Maui College spring 2012 class availability*. (2011, December 30). Retrieved from <http://www.sis.hawaii.edu/uhdad/avail.classes?i=MAU&t=201230&s=ENG>
- Witkin, B. R., & Altschuld, J. (1995). *Planning and conducting needs assessments: A practical guide*. (pp. 4-99). Thousand Oaks, CA: Sage Publishing. Retrieved from [http://books.google.com/books?id=DOADYSz5gqMC&pg=PA3&dq=a three phase model of needs assessment by witkin&hl=en&sa=X&ei=1JIAT62kHajZiAKWg8TRAQ&sqi=2&ved=0CDMQ6AEwAA](http://books.google.com/books?id=DOADYSz5gqMC&pg=PA3&dq=a+three+phase+model+of+needs+assessment+by+witkin&hl=en&sa=X&ei=1JIAT62kHajZiAKWg8TRAQ&sqi=2&ved=0CDMQ6AEwAA)