



Article

Image-Seeking Preferences Among Undergraduate Novice Researchers

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Abstract

Objective – This study investigated the image-seeking preferences of university freshmen to gain a better understanding of how they search for pictures for assignments.

Methods – A survey was emailed to a random sample of 1,000 freshmen enrolled at Oregon State University in the fall of 2009. A total of 63 surveys were returned.

Results – The majority of students indicated they would use Google to find a picture. Nineteen respondents said they would use a library, librarians, and/or archives.

Conclusions – The results indicate the majority of students in our study would use Google to find an image for coursework purposes; yet the students who suggested they would use Google did not mention evaluating the images they might find or have concerns about copyright issues. Undergraduate students would benefit from having visual literacy integrated into standard information literacy instruction to help them locate, evaluate, and legally use the images they find online. In addition, libraries,

librarians, archivists, and library computer programmers should work to raise the rankings of library digital photo collections in online search engines like Google.

Introduction

Today's undergraduate students have grown up in a social environment dominated by online interactions and have a seemingly infinite stream of information available on-demand. New undergraduate students enter the university with pre-conceived ideas about how to effectively and successfully conduct research for course assignments, yet university librarians and archivists who provide information literacy instruction often challenge these ideas. The American Library Association defines information literacy as the ability to "recognize when information is needed and [...] the ability to locate, evaluate, and use effectively the needed information" (American Library Association, 1989). One often overlooked form of information students might use in their assignments and papers is images. In general, while most librarians do not routinely address visual literacy skills in their instruction sessions, archivists working with users on an individual basis to find pictures give the archivist a unique understanding of students' visual information needs. In addition, many archivists have made their collections available on the Web using software such as ContentDM or the popular social networking site Flickr. Although students across all disciplines are using images more frequently, little published research exists about how students search for images or if they are aware of online archival collections. Research into the image-seeking preferences of undergraduates is an important first step toward integrating visual literacy into information literacy instruction at the university level.

Literature Review

In the introduction of her 2006 study on information seeking behaviour in digital image collections, Matusiak summarized there had been "very little research on the use of digital image collections, particularly on user

behaviour or the process of seeking images." (p. 479) Her finding still holds true in 2011, but the importance of researching users and their image-searching preferences and behaviours grows more important as the ability to insert images into assignments, projects, and presentations becomes increasingly easier. In our review of the library and archives literature we found no studies that investigated undergraduate behaviour or preferences related to image searching.

Undergraduates and Information Searching

In 2009, Head and Eisenberg published two important reports examining how college students seek information in the digital age. Their first report, *Finding Context: What Today's College Students Say about Conducting Research in the Digital Age*, shows that although students know "finding context" is critical for comprehensive research, they characterize it as laborious and frustrating. In their second report, *Lessons Learned: How College Students Seek Information in the Digital Age*, the authors build on these initial findings, showing that when students conduct "everyday life research, nearly all the respondents used Google, Wikipedia, and friends for finding context" (p. 32). Additionally, all of the students surveyed used a combination of "course readings, library resources, and public Internet sites such as Google and Wikipedia, when conducting course-related research—no matter where they were enrolled, no matter what resources they had at their disposal" (p. 32).

Head and Eisenberg (2009b) also found students want to find information quickly, regardless of its relevance, at times selecting only the pieces of evidence that support their claims. In *Finding Context* Head and Eisenberg (2009a) discovered that when most students began researching, they used strategies that brought them luck in the past; consequently, while students might consult library

resources, if they did not immediately find something that met their needs after entering a term into a library database search box, they turned to an online search engine.

Correspondingly, in their second report Head and Eisenberg (2009b) found that students “have developed sophisticated problem-solving strategies that help them to meet their school and everyday needs as they arise,” but that “many students’ research methods appear to be far from experimental, new, developmental, or innovative” (p. 34).

Head and Eisenberg (2009a, 2009b) do not specifically address image-searching behaviour or preferences in their two studies, but we believe their findings can be generalized to various formats of information, including visual information. This is important to bear in mind as recent studies on image-searching behaviour and preferences reveal the use of images for personal and academic use is increasing (Davison, 2009; Green, 2006; Hartley, 2007; Jansen, 2008; Krause, 2008; Malkmus, 2008; McCay-Peet & Toms, 2009; Shonfeld, 2006; Tally & Goldenberg, 2005).

Students: Libraries and Archival Digital Collections

Regardless of their age or academic level, users want a clear path for accessing digital content; this is a critical concern for many university libraries that are directing dwindling budget resources toward increasing access to online image collections and historic materials. Studies by Krause (2008) and Davison (2009) looked at the variety of ways archives and special collections are working to digitize previously uncatalogued or inaccessible historical materials, putting them online in digital collections and, consequently, dramatically increasing access points for onsite and offsite researchers.

Continuing the analysis of online retrievability and accessibility, Kathleen Fear (2010) investigated the usefulness of metadata from the user perspective. She examined the information needs of non-expert users and

how assigned metadata might compliment those needs, concluding that librarians and archivists ought to look at the larger issues concerning image use. Specifically, she recommends looking at whether “the information is presented in a way that supports exploration of individual images and collections as a whole” (p. 52). She also suggests sharpening our understanding of what users need, saying it is “a necessary foundation for determining what balance of process is needed to allow users to find, access, and use the products made available to them” (p. 52). Clearly, while online collections have successfully matched people with items that may meet their needs, librarians and archivists need to invest time researching the experiences of specific members of their user communities, looking at both successes and failures to ensure digital resources are being used to their fullest research potential.

Silipigni, Connaway, and Dickey (2010) compiled a comprehensive report synthesizing twelve studies commissioned by Online Computer Library Center (OCLC), Research Information Network (RIN), and Joint Information Systems Committee (JISC), which provides an analysis of the information-seeking behaviours and needs of library users. They conclude that libraries need to provide users with coherent and consistent access to information, consider a greater variety of digital formats and content, and function more like search engines such as Google.

Aim

The primary purpose of this study was to investigate undergraduate novice researchers’ image-searching preferences when looking for pictures to use in assignments. Our study originated in a desire to understand the habits and needs of novice researchers in order to determine how librarians and archivists might better meet those needs. Additionally, our professional concerns about library system usability and item retrievability coincided with a flood of new digital content from libraries and archival collections.

The secondary purpose of the study was to discover the specific Web sites or search engines students had used in the past and which Web sites or search engines they were likely to use in the future to find images.

Methods

We developed a pilot survey in spring 2009 and administered it in-person to two lower-division and two upper-division liberal arts classes. The survey questions were revised based on student feedback. After creating a draft survey, we worked closely with the Senior Faculty Research Assistant for Questionnaire Design at the Oregon State University Research Center (OSURC) in the Department of Statistics to further refine our questions and develop a Web-based survey (Appendix A). The OSU Registrar's Office generated a random sample list of 1,000 students out of the 4,376 enrolled freshmen at Oregon State University. The confidential survey was administered by the OSURC in November 2009 and was open for two weeks. All responses were anonymous. The survey was estimated to take 10 minutes to complete.

The survey contained both open-ended and close-ended questions about image-searching practices, along with two questions about demographics (age and academic discipline). The OSURC sent an email to the selected freshmen announcing the survey two days before the survey was distributed; approximately one week after the survey was distributed the OSURC sent a reminder email to the non-respondents.

Our objective was to study the preferences and behaviours of novice researchers, therefore only freshmen were selected to participate in the study. We assumed the majority of freshmen were new to university-level research and had likely received little to no formal instruction from university librarians, archivists, or professors on image searching. Additionally, these freshmen were in the early stages of Oregon State University's Baccalaureate Core curriculum (Bacc Core), which

represents what the OSU faculty believes is the foundation for students' further understanding of the modern world. Informed by natural and social sciences, arts, and humanities, the Bacc Core requires students to think critically and creatively, and to synthesize ideas and information when evaluating major societal issues. Importantly, the Bacc Core promotes understanding of interrelationships among disciplines in order to increase students' capacities as ethical citizens of an ever-changing world. (Oregon State University, 2010)

With the Bacc Core's focus on interdisciplinary studies, it was likely that freshmen would use a variety of sources and material types for their assignments in the future, regardless of their selected major.

Open-Ended Questions

In our survey students were asked to respond to three open-ended questions. We intentionally used language in the first question of the survey to link it to research students might do for an actual course assignment, asking them to discuss a specific assignment-driven task for finding a historic image. The questions included:

- For this question we'd like you to imagine you are doing a project or writing a paper for a class. Your instructor has asked you to include a picture of people logging in Oregon forests in the 1930s or 1940s. Please explain your search process for finding a picture. You might start your explanation with the phrase, 'I would begin my search for the picture by'
- Please list any other sites you have used to search for images and indicate whether you used the site to search for personal images or to search for images for an assignment.
- Is there something librarians can provide that would help you search for online images?

The respondents' answers to the open-ended questions were analyzed using conceptual ordering (Strauss & Corbin, 1998). We began by using an open-coding procedure to identify the information resources students named in their preferences for finding an image (for example, "Google" and "books"). We then used axial coding to map the identified sources into categories that related to the point in the search process the resource would be used (for example, "First step in the research process," "Only step in the search process," and "Last step in the research process").

Closed-Ended Questions

The closed-ended questions in the survey began with this statement: "Now thinking about searching for any image online, please indicate in what ways you have used each of the following websites to search for images." The survey then presented the name of each site, along with the URL for Google, Google Images, Yahoo, Wikipedia, Facebook, OSU Libraries' Digital Collections, and OSU Libraries' Archives. As an example, the first closed-ended question appears in Table 1; the survey in its entirety is found in Appendix A. The results were analyzed via a frequency analysis (Appendix B), which was conducted by the Oregon State University Research Center. The results provide further insight into

the responses of the open ended questions and will be referenced in the Results/Discussion.

Results and Discussion

Overview

Sixty-three freshmen responded to the survey as a whole, a return-rate of 6%, and 61 responded to the first open-ended question. Although this is a limitation of the study, we feel the answers given may be of interest to librarians as a springboard for more research in this area. Because of the low response rate, the closed-ended question results in particular should be viewed with some caution, as this small sample cannot be generalized to all freshmen at Oregon State University. However, the frequency analysis reveals further insight and the results are discussed throughout this section.

Thirty-three of the respondents, comprising 52% of the total, indicated they were females, while the remaining 30 respondents, 48% of the total, indicated they were males. Students also indicated their academic discipline: six in agricultural science, seven in business, seventeen in engineering, one in forestry, one in health and human sciences, one in liberal arts, one in science, two in honors, and three were "undecided."

Table 1

First Closed-ended Question of the Survey

Now thinking about searching for any image online, please indicate in what ways you have used each of the following websites <u>to search for images</u> . (Check all that apply)	
a. Flickr (Flickr.com)	
☐	Heard of this site but have not used to search for images
☐	Have used for an assignment to search for images
☐	Have used for personal/pleasure to search for images
☐	Likely to use in future for assignments if searching for images
☐	Likely to use in future for personal/pleasure if searching for images
☐	Not at all familiar with this site
☐	Don't know

Google

When the freshmen participants were asked to describe how they would find an image of Oregon loggers from the 1930s or 1940s they overwhelmingly responded "Google." Of the 61 students who responded to the question, 41 specifically mentioned Google or Google Images as part of their search strategy. Twenty-one of the respondents listed Google and/or Google Images as their only search strategy, as conveyed in these quotes:

- "I would begin my search for the picture by going to google [sic] image search and searching oregon [sic] forest 1930 1940"
- "I would first go to google [sic] images. Then I would type in 'logging industry 1930'. I would search through those pictures and if I didn't find any good ones I would simply change the words I used. I only ever use Google."
- "I would begin my search for the picture by going to google [sic] and type in loggin [sic] in Oregon Forests in the 1930s to 1940s. Just in case some one [sic] has already written a paper on this topic."
- "I would look for a picture first on the internet. Using Google images, most likely. See what I can find. And I would probably find something there. So my search would end."

Furthermore, when students described using Google as one part of their overall search strategy, they almost always *started* their search with Google. For example:

- "I would begin my search for the picture by typing into Google, '1930 logging Oregon forests pictures.' I would find a website that matches this and has pictures. I would read the content to confirm it is what I am looking for, then view the images. If I could not find a picture that way, I would click on 'Images' to try to find an accurate depiction. If the internet was not helpful, I would search for nonfiction books that are related to

logging in Oregon, then look specifically for the dates."

- "I would begin my search for the picture by going to google [sic] images and searching for 'loggers in oregon + 1930s +1940s.' If that didn't yield what I needed I would go look for pictures in some books if possible from the library."
- "First, I would think of some keywords that would help me find the type of picture that I'm looking for. In this case, I would pick out 'Oregon' and 'logging' and enter them into Google images to see if I can find any images I want. If I look through a couple pages and don't find anything that I want, then I would try to change my keywords to be more specific if possible and repeat. I would then try another image website in order to try and find the correct image."

Finally, Google was the only search engine directly named by students, other than one mention of Ask.com; however, 12 students mentioned searching the "internet" or a "website" without naming a particular search engine.

In line with the findings of Head and Eisenberg (2009a), participants in our study preferred to conduct their image research for an assignment using a search strategy that had worked for them in the past; in this case, Google. When asked where they would begin their hypothetical search for a historic logging image, 41 of the participants indicated they would use Google or Google Images as part of their research strategy. Moreover, 21 of those 41 students, approximately one-third of the total study participants, stated they would *only* use Google or Google Images. This correlates to the frequency analysis from the closed-ended questions of our survey, which showed 54 respondents had used Google and 55 had used Google Images to search for images for assignments in the past.

Given the preference for using Google and Google Images as a first step in the research

process, are libraries prepared to support students in their use of Google? Librarians and archivists frequently voice their professional concerns at library conferences about undergraduate students' preference for "non-library" resources and reliance on popular search engines for research projects. It is our opinion that dismissing Google, when it has proven successful for patrons in the past, only serves to undermine the librarian's role in the research process.

Further, because our findings showed students turn to search engines first and then look to librarians for assistance afterward, we believe it is imperative that librarians, archivists, and library computer programmers understand how search engines, like Google, index digital image collections and that these professionals work toward improving the collections rank in these search engines. Students will likely focus on the content of sites appearing in the first two or three pages of Google search results (Nichols, Rowlands, Clark, & Williams, 2011). Also, by taking advantage of popular photo sharing sites like Flickr, libraries can markedly improve the ranking of their images in Google.

Books

Sixteen of the 61 open-ended question respondents indicated they would look in books when searching for an image of loggers from the 1930s and 1940s. The majority of these respondents indicated finding books was the last step of a multi-step search strategy, preceded by searching the internet and/or Google.

- "I would begin my search for the picture by first looking up logging in Oregon + 1930s in google *[sic]* images. I would look through the pictures and if they weren't what I expected, I would try another search engine, after trying the internet I would turn to books or another source."
- "googling *[sic]* it on the internet, and if that didn't work look up environmental science books or

logging books that could possibly have that in it."

- "I would begin my search for the picture by looking on the internet. If I didn't find it there I might try and find a picture from a book."

Approximately one-quarter of the respondents said they would look in books for the images. It is possible students were referring to textbooks, although only one of the students actually used the word "textbook" in his/her response.

Library / Librarians / Archives

Nineteen of the 61 open-ended question respondents indicated they would use a librarian and/or the library and archives in their search for images of loggers from the 1930s and 1940s. Similar to the previous discussion of search strategies that included books, the majority of respondents included the library or librarians as part of a multi-step search strategy, usually preceded by searching the internet or Google.

- "I would begin my search for the picture by searching google *[sic]* for it. If that did not turn up any acceptable results, I would go to the library and browse through potential books and then photo copy/scan the desired picture out of the book."
- "I would definitely use the internet to find a picture, if that didn't work obviously I would have to find something at the library. Where which *[sic]* I would ask a librarian to direct me to where I could find a document with pictures to use for the project."
- "I would begin my search for the picture by looking for images online. Failing this I would look in books pertinent to the subject. If that didn't work I would ask friends for help or ask library staff."

The words students use to describe their search process reveals a thinly veiled certainty that, in all likelihood, the image actually would be found online and not in a library. For example, a statement that began, "I would

definitely use the internet” concluded, “if that didn’t work, obviously I would have to find something at the library.” Although most students included the library as a final step, five students indicated they would start their search with the library or archives.

- “I would begin my search for the picture by asking the librarian because I have no idea where to find that.”
- “I would begin my search for the picture by asking someone that works at the library for help. I could also search online for where the picture may be...in the OASIS archives.”
- “I would begin my search for the picture by searching the OSU database and archives for photos of people logging in Oregon forests in the 1930s or 1940s.”
- “I would begin my search for the picture by using the internet to find where books on that subject and time period are located in the library.”
- “I would begin the search for my picture by checking the library catalog for books relating specifically to logging, then within them 1930-1940.”

Because only 19 of the 61 respondents mentioned a library, librarians, or archives, and because the majority of those students described using them as a last resort after searching the internet, we conclude that libraries and archives have two main options for increasing novice-researcher traffic to their online images and repositories. First, they can promote and advertise their services heavily to increase awareness of collections. Secondly, they can work to raise the rankings of their images in search engines such as Google and Google Images. From a financial standpoint, perhaps the most cost-effective method is a subscription for a Flickr professional account, which currently has a \$24.95 annual fee. Despite staff time for scanning and image uploading, the popularity of the Flickr site will help library collections rise to the top of Google searches without major expenditures.

Wikipedia

Interestingly, in the frequency analysis of the closed-ended questions, 32 students, or just over one-half of all respondents to this question, indicated they had used Wikipedia in the past to find images for assignments, yet none mentioned Wikipedia in their search strategy for finding logging images in the open-ended question. Head and Eisenberg (2009a) have suggested that novice researchers are likely to use search strategies that have worked in the past, so it is worth highlighting that none of the participants mentioned Wikipedia in their search strategy. This point is an interesting question for future research. We hypothesize that students did not mention Wikipedia because they were told by high school teachers and librarians they should not use Wikipedia for academic research. Although students might admit having used it in the past, perhaps they are reluctant to say they will use it in the future, especially when addressing an assignment proposed by a librarian or professor. Or, perhaps they simply realize Google Images will provide hundreds of images for the task, while Wikipedia may serve up only one or two.

Copyright

Although we did not ask questions in our survey about copyright, we believe it noteworthy to mention that none of the students mentioned concern for copyright when searching for or finding an image for use in an academic paper. Future research into students’ understanding of copyright should be conducted and librarians may want to consider adding information about copyright as it applies to images to their standard information literacy instruction.

Conclusion

We began our research by exploring questions pertaining to image-seeking and novice historical researchers. However, in the process of reviewing the literature and having anecdotal conversations with colleagues and discipline-specific faculty members, we began

to realize our burgeoning research about image-seeking had broader implications for instruction librarians across all disciplines.

Our study of the image-searching preferences and behaviours of freshmen raised more questions than it answered, yet the questions offer excellent opportunities for future research by librarians. For example, "What do faculty members tell students about finding and citing images?" and "How often are students using images in their assignments?" Although our study raised a lot of questions, it did answer the question "Where do students go to search for images for assignments?" Resoundingly, the answer was "Google." However, since only 6% of the invited participants responded, the results of this study need to be treated with caution until more research is done in the area of searching for images. In the meantime, we recommend that staff responsible for the development of library and archival online image collections work toward raising the rankings of their images in Google. In addition, because the respondents in our survey did not mention evaluating the images they might find or concern for copyright, we suggest librarians begin to consider integrating visual literacy instruction into standard information literacy instruction for undergraduates.

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Appendix A: OSU Image Search Methods for Undergraduates Survey

Q1. For this question we'd like you to imagine you are doing a project or writing a paper for a class. Your instructor has asked you to include a picture of people logging in Oregon forests in the 1930s or 1940s. Please explain your search process for finding a picture. You might start your explanation with the phrase, 'I would begin my search for the picture by'

Q2. Now thinking about searching for any image online, please indicate in what ways you have used each of the following websites to search for images. (Check all that apply)

a. Flickr (Flickr.com)

- ☐ Heard of this site but not used to search for images
- ☐ Have used for an assignment to search for images
- ☐ Have used for personal/pleasure to search for images
- ☐ Likely to use in future for assignments if searching for images
- ☐ Likely to use in future for personal/pleasure if searching for images
- ☐ Not at all familiar with this site
- ☐ Don't know

b. Google (Google.com)

- ☐ Heard of this site but not used to search for images
- ☐ Have used for an assignment to search for images
- ☐ Have used for personal/pleasure to search for images
- ☐ Likely to use in future for assignments if searching for images
- ☐ Likely to use in future for personal/pleasure if searching for images
- ☐ Not at all familiar with this site
- ☐ Don't know

c. Google images (images.google.com)

- ☐ Heard of this site but not used to search for images
- ☐ Have used for an assignment to search for images
- ☐ Have used for personal/pleasure to search for images
- ☐ Likely to use in future for assignments if searching for images
- ☐ Likely to use in future for personal/pleasure if searching for images
- ☐ Not at all familiar with this site
- ☐ Don't know

d. Yahoo! (yahoo.com)

- ☐ Heard of this site but not used to search for images

- ☐ Have used for an assignment to search for images
- ☐ Have used for personal/pleasure to search for images
- ☐ Likely to use in future for assignments if searching for images
- ☐ Likely to use in future for personal/pleasure if searching for images
- ☐ Not at all familiar with this site
- ☐ Don't know

e. Wikipedia (wikipedia.org)

- ☐ Heard of this site but not used to search for images
- ☐ Have used for an assignment to search for images
- ☐ Have used for personal/pleasure to search for images
- ☐ Likely to use in future for assignments if searching for images
- ☐ Likely to use in future for personal/pleasure if searching for images
- ☐ Not at all familiar with this site
- ☐ Don't know

f. Facebook (facebook.com)

- ☐ Heard of this site but not used to search for images
- ☐ Have used for an assignment to search for images
- ☐ Have used for personal/pleasure to search for images
- ☐ Likely to use in future for assignments if searching for images
- ☐ Likely to use in future for personal/pleasure if searching for images
- ☐ Not at all familiar with this site
- ☐ Don't know

g. OSU Libraries' Digital Collections (osulibrary.oregonstate.edu/digitalcollections)

- ☐ Heard of this site but not used to search for images
- ☐ Have used for an assignment to search for images
- ☐ Have used for personal/pleasure to search for images
- ☐ Likely to use in future for assignments if searching for images
- ☐ Likely to use in future for personal/pleasure if searching for images
- ☐ Not at all familiar with this site
- ☐ Don't know

h. OSU Libraries' University Archives (osulibrary.oregonstate.edu/archives)

- ☐ Heard of this site but not used to search for images
- ☐ Have used for an assignment to search for images

- ☐ Have used for personal/pleasure to search for images
- ☐ Likely to use in future for assignments if searching for images
- ☐ Likely to use in future for personal/pleasure if searching for images
- ☐ Not at all familiar with this site
- ☐ Don't know

Q4. Is there something librarians can provide that would help you search for online images?

Q5. Which college are you primarily associated with?

- Agricultural Science
- Business
- Education
- Engineering
- Forestry
- Health and Human Sciences
- Liberal Arts
- Science
- Honors
- Undecided
- Other
- Don't Know

Q6. Are you male or female?

Male

Female

Appendix B: Frequency Analysis

Question: Now thinking about searching for an image online, please indicate in what ways you have used each of the following websites to search for images. *(Check all that apply)*

Frequency Analysis for Flickr**Flickr (Flickr.com)**

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Heard of this site but not used to search for images	23	28.05	23	28.05
Have used for an assignment to search for images	9	10.98	32	39.02
Have used for personal/pleasure to search for images	10	12.20	42	51.22
Likely to use in future for assignments if searching for images	7	8.54	49	59.76
Likely to use in future for personal/pleasure if searching for images	8	9.76	57	69.51
Not at all familiar with this site	23	28.05	80	97.56
Don't know	2	2.44	82	100.00
Heard of this site but not used to search for images	23	28.05	23	28.05
Have used for an assignment to search for images	2	2.44	32	39.02

Frequency Analysis for Google**Google (Google.com)**

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Heard of this site but not used to search for images	2	1.08	2	1.08
Have used for an assignment to search for images	54	29.19	56	30.27
Have used for personal/pleasure to search for images	47	25.41	103	55.68
Likely to use in future for assignments if searching for images	43	23.24	146	78.92
Likely to use in future for personal/pleasure if searching for images	39	21.08	185	100.00

Frequency Analysis for Google Images**Google Images (images.google.com)**

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Have used for an assignment to search for images	55	28.80	55	28.80
Have used for personal/pleasure to search for images	51	26.70	106	55.50
Likely to use in future for assignments if searching for images	44	23.04	150	78.53
Likely to use in future for personal/pleasure if searching for images	41	21.47	191	100.00

Frequency Analysis for Yahoo!**Yahoo! (yahoo.com)**

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Heard of this site but not used to search for images	45	54.88	45	54.88
Have used for an assignment to search for images	10	12.20	55	67.07
Have used for personal/pleasure to search for images	8	9.76	63	76.83
Likely to use in future for assignments if searching for images	8	9.76	71	86.59
Likely to use in future for personal/pleasure if searching for images	6	7.32	77	93.90
Not at all familiar with this site	2	2.44	79	96.34
Don't know	3	3.66	82	100.00

Frequency Analysis for Wikipedia
Wikipedia (wikipedia.org)

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Heard of this site but not used to search for images	27	21.26	27	21.26
Have used for an assignment to search for images	32	25.20	59	46.46
Have used for personal/pleasure to search for images	25	19.69	84	66.14
Likely to use in future for assignments if searching for images	23	18.11	107	84.25
Likely to use in future for personal/pleasure if searching for images	19	14.96	126	99.21
Not at all familiar with this site	1	0.79	127	100.00

Frequency Analysis for Facebook
Facebook (facebook.com)

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Heard of this site but not used to search for images	41	49.40	41	49.40
Have used for an assignment to search for images	3	3.61	44	53.01
Have used for personal/pleasure to search for images	21	25.30	65	78.31
Likely to use in future for assignments if searching for images	2	2.41	67	80.72
Likely to use in future for personal/pleasure if searching for images	13	15.66	80	96.39
Don't know	3	3.61	83	100.00

Frequency Analysis of OSU Libraries' Digital Collection**OSU Libraries' Digital Collections (osulibrary.oregonstate.edu/digitalcollections)**

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Heard of this site but not used to search for images	9	12.16	9	12.16
Have used for an assignment to search for images	1	1.35	10	13.51
Likely to use in future for assignments if searching for images	10	13.51	20	27.03
Likely to use in future for personal/pleasure if searching for images	3	4.05	23	31.08
Not at all familiar with this site	49	66.22	72	97.30
Don't know	2	2.70	74	100.00

Frequency Analysis of OSU Libraries' University Archives**OSU Libraries' University Archives (osulibrary.oregonstate.edu/archives)**

	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Heard of this site but not used to search for images	17	22.37	17	22.37
Have used for an assignment to search for images	2	2.63	19	25.00
Likely to use in future for assignments if searching for images	11	14.47	30	39.47
Likely to use in future for personal/pleasure if searching for images	5	6.58	35	46.05
Not at all familiar with this site	39	51.32	74	97.37
Don't know	2	2.63	76	100.00