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Qualitative Findings from Student Interviews as Compiled at the Conclusion of the Research Phase of the Rutgers University Libraries Web Interface Redesign Project

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Introduction

This is the second part of the final report on the ethnographic study at Rutgers University Libraries, which began in January 2009 and continued through the summer of that year. Whereas the first part of the study presented the quantitative aspects of the study as gathered through the use of a survey, this section presents and analyzes the qualitative data, which was acquired through extended interviews with undergraduate and graduate students.

Interviews took place between April 16 and July 2, 2009. Most of the interviews took place in my office on the third floor of the Archibald S. Alexander Library in New Brunswick. Four occurred in the John Cotton Dana Library in Newark, three in the Paul Robeson Library in Camden, and six in the Library of Science and Medicine on the Piscataway campus of Rutgers. I travelled to these other locations in order to diversify the sample of students as much as possible and to include librarians from the different campus locals in the interview process. In most cases, librarians, most of them members of the Ethnographic Research Project Team, filmed the interviews and were encouraged to participate and ask their own questions.

This report is divided into two primary sections. The first provides a brief introduction to each student, as segmented by class standing. The second section discusses the primary research questions listed above.

This is the second final report generated by this study. In the first report, I analyzed the quantitative aspects of the study as gleaned through an online survey that ran prior to the interviews. Those findings will be carried forward into this analysis where appropriate. That first report hinted toward tentative conclusions, which will be further analyzed and elaborated here. The first observation was that there were a few highly underutilized resources on the website, most notably Searchlight and the Subject Research Guides. Students also were not using citation and reference management tools as well as they could, most especially RefWorks, which is provided to them by the university.
Tentative observations indicated that students had a very difficult time navigating the site, especially when it came to finding and accessing journal articles. Very few students had an emotional connection to the site, most often describing it as boring, un-engaging, and overloaded with too much information. This report fleshes out those tentative observation, providing rich detail where needed and including direct quotations and vignettes that I feel are especially pertinent and poignant to the study.

As the lead anthropologist, my role in this site redesign process is to uncover gaps between what the Rutgers University Libraries seek to do in the products, tools, and services they provide and how those are received and utilized by the students. While my primary task was to focus and report on what didn’t work, I also tried to pay attention to what did work.

The reader should enter into this study knowing that the students at Rutgers are grateful to the librarians and appreciate the services that are provided. They know that the librarians seek to be helpful and without exception have had good experiences, overall, with Libraries services. This is sometimes made clear overtly, as when Kevin concluded his interview by telling me how helpful a librarian had been via Meebo chat or when Tara expressed her gratitude for the librarians who had come to her class and taught her how to use the different indexes and databases available. Sometimes, their appreciation was evident in more subtle ways, as how students would hedge their criticisms in indirect ways or else infer that it was their own ineptitude that was the problem and not a problematic design. “Librarians are smart,” one student said, and there was a general consensus of this. But librarians are also busy, and many students did not want to bother them. On the other hand, as Ronald put it, “Why would I want to consult with a librarian? Isn’t that the point? I feel like that’s what you’re supposed to become yourself, like your own personal librarian….Isn’t the point that we’re supposed to become our own librarians, like being able to process knowledge ourselves? Isn’t that the point of college, being able to process information faster, quicker?” In this way, consulting with a librarian was admitting that you were not a sophisticated researcher, that you were unable to find information on your own, that you were not yet a fully developed and independent
scho"lar. Asking for help, for some, was like admitting that they were unskilled and not clever enough to figure it out on their own.

Though I am unable to express my gratitude to each student the way that I would like, I do wish to say that I appreciate the time that they spent with me during the interview process. Many of these students are incredibly busy, and it was very nice of them to take time out of their day to answer my questions. Regina, for instance, has been taking a very heavy load in college. She has to work full-time on the side and still tries to take between 15 and 18 credits per term. She was very fatigued during our interview. I recall how when I met her, as she was studying in the foyer of the Alexander Library, she looked very tired and, while desirous to help us, seemed guarded of her time. At the conclusion of her interview she said that this had been her fourth day in a row on about four hours of sleep each night.

My impression, however, is that most of these students would have participated in this study even if there weren’t a $50 gift card involved for their time. They felt that this was a good opportunity to voice their opinions or to give back to the Libraries in a meaningful and productive way.

**Section One: Biographical Sketches**

Twenty-one undergraduate and eight graduate students were interviewed for this study. This section of the report provides a brief overview and introduction to each student. For purposes of privacy, this report uses pseudonyms to protect the privacy of those involved.

**Undergraduate Students**

**The First-year Students**

**Anne**

Anne is a first-year student who is getting a double major in history and philosophy. Credit-wise, though, she is a sophomore. Though her home is on Long Island, she selected
Camden because of the philosophy department. She desires to pursue a career on museum or archival work, “anything to do with research.”

When launching a research project, Anne goes right to JSTOR and says that she really doesn’t use search engines (meaning Google?) very much. Yet when she illustrated her research, she went straight to IRIS.

Anne had just completed her philosophy honors thesis on Sartre’s novel *Nausea* and the refutation of suicide. Once the article is finished, she is considering sending it to the journal Sartre Studies International for publication.

**Leslie**

Leslie is an undeclared first-year student who is interested in studying communications and, perhaps, sociology. She has not had any real experience in using the Libraries website as her professors tend to provide her with the materials that she needs. For general information, she uses Google, Wikipedia, and online dictionaries such as Webster’s. “I typically use Google and Wikipedia and everything,” she said.

Leslie has not had very much experience using the Libraries main page. In fact, she had no idea how to get there when I asked her. So she went to www.rutgers.edu and found it there. When the main page came up, I asked her what she thought of it, and she was decidedly unimpressed. She did not know quite where to begin, and then when she decided to click on the link for “How do I find articles in my topic...,” she became instantly dismayed by all of the text she was met with, suggesting that she didn’t have the time to read it. “If I didn’t have time to read them, I might just skip all this and hit “Search Website” and see if that made it any easier.”

**Rhonda**

Rhonda is a first-year student studying Criminal Science at Rutgers Newark. She has always wanted to pursue a career in human physiology and hopes to become a surgeon or a forensic scientist.

Last semester, Rhonda wrote 4 or 5 papers, each about 4 pages in length. She enjoys doing research and writing papers. “I like my research papers. They’re fun!” Her last
research report was on the use of tasers and why the state of New Jersey does not allow them.

**Ronald**

Ronald had just completed his first year at Rutgers and is a first-year student with 33 credits. He took advanced courses in high school and is majoring in math. He had already taken calculus 1 and 2, one-year algebra and differential equations at the college level and was interested in continuing in courses in math and humanities through his undergraduate career.

Ronald has had a life-long passion for math but is also fascinated by foreign languages and cultures. He had been studying French, and his research demonstrations in the interview were based on assignments from that course. His ambition is to ether go to graduate school or to law school.

Ronald is the king of cut and paste. He began his research demonstration by opening a blank MS Word document where he kept notes of what he found. At the end of the interview, he mailed the document to himself. “Cut and paste is free, right?” he quipped. He was one of few undergraduate students whom I interviewed who was truly concerned with keeping track of citations.

**Wan-li**

Wan-li was just finishing her first semester at Rutgers when I met her. She had recently been admitted into the business school and is working on a minor in economics. Wan-li is from China, and she is not very familiar with research strategies or the Libraries website. She did take a course on research that was required of transfer students.
**The Sophomores**

**Dev**

Dev is a sophomore who is studying biology and has a strong interest in genetics. He desires to go to medical school to become an MD.

This semester, he was taking general education courses, studying economics and film. He expressed his frustration and disappointment at his current economics professor, whom is said was basically a “one-man Republican convention.” He did not have any courses that required intensive research, but he did have one class that required a lot of writing. That was a biology class on plant growth and development. Even here, the papers were only two pages in length. This professor was upset that the students were using MLA style to cite their references, and he had to re-teach them how to cite in a scientific manner. The professor was also annoyed that so many of the students were basically plagiarizing, which I took it to mean they were quoting verbatim and not paraphrasing or even citing as they should. The teacher had to take time out to show the students how to write papers, whereas he no doubt would have rather spent time on teaching them about biology. “I think it’s a 400-level class so it’s you know I’m…I don’t blame him for having that assumption that we should know how to cite in a scientific paper.”

**Pavan**

Pavan is a sophomore who is double majoring in English and political science with the ambition of going to law school. He was recently writing a research paper on Milton’s work, “Areopagitica: A Speech for the Liberty of Unlicensed Printing to the Parliament of England” (1644), and his thesis was that Milton was more concerned with his own liberty when he wrote the piece than he was for society as a whole.

Pavan was one of the most sophisticated undergraduate researchers that I encountered. He uses the Libraries website a lot and has it bookmarked—the second bookmark on his browser after his work page.
Regina

Regina has an undergraduate major in philosophy and religion. She aspires to go to law school and to study Constitutional rights for minority peoples. She was between her sophomore and junior years when we met for the interview. She had recently completed courses in Hindu philosophy, Chinese classics, and religious thought. She next wanted to study Islam and had studied Christianity previously. She had been an English major at one time but dropped it.

Regina had to write three research papers last semester, two for philosophy and a longer one for Chinese Classics. The long one was 25 pages long, but most were between 10 and 15 pages.

When I met Regina, she was researching the knowledge argument in philosophy. She noted that the language and concepts were difficult, so she found herself using Google a lot.

The Juniors

Drew

Drew, a junior on the Camden campus, is changing his major from management to economics. He had recently written a paper about German car manufacturers for a class on financial business and was currently writing one based on podcasting for a class in communications.

Drew usually starts his research by going to the Camden Libraries page and clicking on the A-Z list of databases, which takes him to the “Indexes and Databases” page. He likes to use Business Source Premier, an EBSCOhost database.

Juan

Juan is a junior who studies philosophy. He has had an interest in philosophy since he was in high school, though his parents wish he would do something different. He tried pre-med for a semester but then decided to return to philosophy and do something that he liked. His most recent research paper was on “The Causal Theory of Names,” by Gareth
Evans. When he started his research, Juan went directly to Google and then to the
Stanford Encyclopedia of Philosophy.

Juan rarely uses the Libraries website. He has used it to find books, but now that
most of his research comes from journal articles he relies increasingly on Google. When I
took him to Searchlight and we tried searching from there, he immediately had good
results: 77 references came up. Even here, he met with confusion and disappointment
when what he thought was an article turned out to be a book review.

Juan relies a lot on the philosophy department website. His professors often link to
PDFs that they want him to read there. He commented as well that the philosophy pages
“look nicer” than the Libraries.

Lisa

Lisa just completed her junior year and is studying sports management. She hopes to find
a good job after she graduates and to eventually get her MBA two or three years later.
She’d eventually like to work as head of a marketing department for a company like Nike
or Adidas.

Lisa had a recent assignment to research what it would take to create a Rutgers
Alumni club in New York City. She found a location that she liked, near Penn Station, that
would rent for about $60,000 per year. I asked how she researched this—how did she find
the location? How did she create her business model? How did she determine a working
budget? Her answers, to me, seemed vague. I didn’t feel that her research was truly as
rigorous as it could have been.

Her answers were often circuitous, as when I asked her straight up if the Libraries
resources had been helpful to her. She replied, “I did a brief search, but then I decided to
use online more to see if they had any like pricing quotes for businesses and on the
research part about the backgrounds of the universities. What I did was I went different
universities that had their alumni clubs and they had like a brief, like some of them had a
brief blurb. I remember Princeton had probably like the most, they had like three; they
had three pages like about their history and how it was built and that kind of gave us more
insight, but I really would have liked if there was an extensive way I could find more
information.” She probably just should have replied, “No. I did not use the Libraries resources very much at all.”

**Paul**

Paul is a junior majoring in economics and minoring in history on the Camden campus. He had recently been conducting research on Malcolm X for his African American history class. During the interview it became clear that he had a very strong passion for his minor, and this colored much of the conversation that follow.

I asked Paul if there were any similarities between his research in his interest in African-American studies and his research in economics, and he said no, that there was not much in common. When Paul talked about his research on Malcolm X, he lit up, showing that was clearly more his real passion. I explored this a bit and found that for Paul research was a means of exploring his history, heritage, and identity. While this should not come as a surprise, it was a different take on the importance of research than I had heard from others. Even Alex, a senior who was staying LGBT issues, seemed to be more concerned with his future job than he was in exploring or shaping a sense of identity.

**Randy**

Randy is a junior studying biology with the ambition of going to medical school and securing his M.D. or Ph.D. His last research paper was eight pages long, for a course on black civilizations, that focused on Eurocentric versus Afrocentric views in the world. When I asked what he learned in this research that surprised him, he responded that he was surprised to learn that Afrocentric perspectives and viewpoints came out of and resulted from Eurocentric ones. “At first, at first, I thought like they came out first, like at the same time, but they didn’t so…that’s the one of the like major things I learned.”

Randy’s family migrated to the US from Nigeria in 1990. He has been here for most of his life.

Randy gets most of his research information from Google. When I asked him to demonstrate a search for me using the Libraries website, he got to the Libraries main page
through a Google search. In his last paper, he found two sources using the Internet—and both were located via Google. He said late in our interview that he did not have to write research papers for his science classes. Much of what he needed to know came right out of the textbooks that he was assigned by the professor.

Robert

Robert is a junior studying accounting. He desires to secure a job in an accounting firm, working in public accounting. He hopes to go to graduate school to study business. His most recent research paper was for a course in management information systems. The topic was on the benefits of a group decision support system, a form of software that helps people come to a decision. The software allows people to contribute and critique ideas anonymously and then vote for the best resolution for a situation.

When Robert demonstrated a search, he began by going straight to Google and doing a search for “group decision support systems.” He had several article come up right away that he recognized and had cited. But then Robert said something that really surprised me. When I commented that it was cool that Google had taken him directly to the PDF, he replied, “Only part of it. You have to purchase it.”

Stephen

Stephen is a junior majoring in engineering. He is interested in pursuing a career in government, governmental policy, advocacy work in environmental policy, or engineering. Rather than developing new uses for energy, Stephen is more interested in behavior and behavioral change. He is very interested in getting people to adapt to and use green technologies. He is going for his degree in engineering so that when he works with scientists who give him technical data, he “might have some idea what they are talking about.”

“What I would like to do is to see the practical side of things and, and then see how that correlates into everyday life. So that’s why I figured engineering. I’ll have an idea how air pollution plans work, and water treatment, and alternative energy, and I’ll see how those things actually work instead of just the theory behind them.”
It has been a very rigorous and demanding degree. “It’s so inclusive of everything. I’m taking you know chemistry, biology, physics, math, and, and on the side I’m able to take some of the policy courses and ah social science courses.”

He definitely plans on going to graduate school, perhaps to secure a Ph.D. in sustainability.

As with other science students, Stephen said that he is not required to write many research papers. In fact, in the prior two years, he has not had to write ANY research papers.

**The Seniors**

**Alex**

Alex is a senior majoring in history and political science. He took the fast track through his undergraduate degree and will be graduating within four years.

Alex said that in the last semester he had written two thirty-page papers. One was on the Loving v. Virginia court case and its implications on judicial activism and how that could relate to the ongoing debate regarding gay marriage.

**Catherine**

Catherine is a senior, majoring in English and music. She has already been admitted into graduate school, at Cornell. Her interest was in medieval and Renaissance literature. Her recent research project was on the use of the word “ræd” in Beowulf, which is the word for help, advice, or counsel. She was also interested in the old English poem, Exodus, where Moses was portrayed very much as a Beowulf type of warrior-king hero.

Catherine always begins her research by going straight to the Libraries website. Her teachers had warned her against using Google or Wikipedia “Teachers always give you the talk that Wikipedia doesn’t matter. I’ve seen how easily you can change it, so it frightens me.”
**Greg**

Greg is a senior, soon to graduate, who has majors in economics and geography and will be getting a certificate in International Geographic Perspectives. He is studying international economic development of developing nations, from a somewhat evolutionary perspective. After he graduates, he plans to get a second bachelor’s degree in computer science so that he can do agent-based modeling and then go on to get a masters’ and eventually a Ph.D. This second degree will take one more year. He aspires to get a job in a national laboratory or research institute, perhaps a university.

**Kevin**

Kevin recently graduated with a degree in Engineering, his emphasis on material science. He is getting ready to head to Northwestern University in Chicago, where he will attend graduate school specializing in developing fuel cells. At Rutgers, he studies material science because “it’s a bridge between the pure sciences, like chemistry and physics and practical engineering. So you kind of get both sides of the coin which is nice.”

Kevin has not had to write many research papers in his degree work. “Umm well our department was a little bit different. It wasn’t too focused on us writing research papers. For the most part, they try to get most of us jobs rather than send us off to graduate school. Umm I mean I wrote several ah I’d call them term papers rather than research papers because there wasn’t anything actually novel in it, like there wasn’t any new research that was done, but it...understanding the structure of how to write a research paper was there. So I probably in the term of me being an, an umm engineer so really with only three, three years in the department because the first year you’re not declared. Umm I’ve probably written somewhere around, well if I include lab, lab papers umm probably two dozen.” The longest paper that he had to write was only about four or five pages, but one had nearly 60 pages of appendices.
Ryan

Ryan is a senior who studies both physics and music. His instruments are voice and euphonium. Having added his second major, in physics, he expects that it will have taken him five years to complete his undergraduate degree, and he then plans to go for a master’s degree in physics. He would love to become a professor, and his dream job would be to teach for MIT. His original aspiration was to become a performer, but the more he leans towards a future in physics, the more he thinks about becoming an instructor.

I was surprised to learn that Ryan has not been required to write many papers as a physics major. Over the entire course of his time as an undergraduate—in four years of undergraduate education—Ryan only recalls having to write a handful of papers, maybe four or five. He wrote one this past semester, for a music class. The topic was how the introduction of the LP format influenced music in the 1960s.

When he starts his research, Ryan goes right to Wikipedia. He said that he trusts what he reads on Wikipedia because of his experience with it and because he trusts people to “put correct information on there, but...because I feel like people who would be editing articles like this are people who have an interest in it.” However, like Ronald and others, he said that he wouldn’t cite it in a paper, partly because of the professor’s reaction and partly because “like, what exactly are you citing? It’s just a bunch of people who got together and decided to type some information.”

Tara

Tara had recently graduated from Rutgers, as in two weeks prior to the interview, with a masters degree in genetics and a minor in geography. She desires to go to medical school and become an M.D., perhaps with a Ph.D. She wants to go into clinical research in order to conduct clinical trials.

The interview began with an interesting discussion of how those two interests intersect, and she discussed research papers that she had written in race and ethnicity, especially as regards urban living. Her longest and most involved research paper was a
28-page paper on her independent research involving Alzheimer's disease and Drosophila fruit flies.

**Graduate Students**

**Aaron**

Aaron is a Ph.D candidate in history who desires to become a professor at a research institution. For his dissertation, he is writing a social history of high-fidelity sound. Like Melody, much of his research comes from archives, and he makes extensive use of the Edison papers, housed on the Livingston campus. He also uses the RCA documents at the Hagley Library in Delaware. He hopes to be able to turn his dissertation into a book but thinks that the publishing trends of current academic publishers may not make that an inevitable outcome.

Aaron has not accessed the online Edison archives in probably three years. He says that his research starts in the mid 1920s, and they just “don’t have that stuff” online.

More than any other researcher that I spoke to, Aaron prefers to read documents and books online. He loves to have electronic text so that he can easily search, underline, markup, and highlight directly onto the PDF. He likes to cut, copy, and paste text directly into a Word document, too, such that he has his own library of notes. Aaron was the only I student I met who used Zotero to help keep track of and organize citation data.

**Barbara**

Barbara is a Ph.D. candidate in biology who studies the vertical effects of deer browsing in forest understory plants in New Jersey and Pennsylvania. She will be writing three independent studies, one chapter each for the body of her dissertation, that she hopes will also be published in peer reviewed journals such as *Forest Ecology and Management*, *Forest Journal*, *Science*, or *Ecology*. 
**Bernardo**

Bernardo is a student in economics who is wrapping up his dissertation. His dissertation topic is on fluctuations in emerging economies. He hopes to write a dissertation comprised of three publishable articles for the body chapters.

Bernardo was probably one of the best researchers I met. He used the A-Z Journals reference guide extensively and has an advanced familiarity with several of the professional journals in his field. He actively keeps track of 20 to 30 journals. Therefore, he would like the ability to somehow bookmark journals and recalls that one time as he used the Libraries website, he was prompted if he wanted to do so but then was later unable to relocate that option.

Bernardo is a very dedicated student who works very hard and will no doubt succeed in his career doing very important work as an applied economist in a developing nation. But he is not finding all of the materials he needs, however, and he does not feel that he has been getting the one-on-one interaction that he desires to improve his academic work and to locate articles and other resources that could facilitate his research.

**James**

After earning an undergraduate degree in psychology, James is getting his degree in political science. James has already published in peer-reviewed journals and is hoping that the three core chapters of his dissertation will likewise be published. His goal is “to be the first Ph.D. candidate in Rutgers political science to get a three-journal article dissertation.” We had a very stimulating conversation at the start of the interview regarding the role and importance of education in the democratic process. With this experience, Ryan should have been one of our most expert researchers. By the end of our interview, however, he realized that he was not as expert as he had thought.

James stated that the Libraries website was the first place that he would go when conducting research. Most of his information came from journal articles rather than books. He preferred to have hard copies of the journals over PDF copies and referred, perhaps more than any other interviewee except for Jeffrey (in music), to have hard copies of the
journals on hand. For this reason, he had joined several professional organizations, to keep his journal subscriptions active.

James did not trust Google and said that he would only do a Google search “when he had to.” In spite of this, when I asked him to navigate to the latest issue of the *American Political Science Review* he used Google to get there. He said that he uses the main page to get to anything that he does not bookmark. James does not use the A–J list of online journals; however, having discovered and learned how to use JSTOR he now regularly heads directly there to search for journal articles. Like most of the other graduate students interviewed, James does not use TOC alerts or RSS feeds and has no clue what Delicious is. He does not know about RUcore and does not use a citation management system.

**Jeffrey**

Jeffrey is studying music with the ambition of becoming a professor of choral activities in a university. He is currently working on his master’s degree in music. In time, he might want to pursue a Ph.D. and write a dissertation on the history of the a cappella music tradition.

**Maria**

Maria recently graduated with a Master’s degree in Education with an emphasis on social sciences, secondary education. She has a bachelor’s degree in cultural anthropology with a minor in women's' studies.

Maria often uses JSTOR for her research and strongly dislikes Academic Search Premier. One of her favorite journals is called *History Teacher*, which she accesses through JSTOR. Maria accesses JSTOR by going through the Libraries webpage through “Access Indexes and Databases” and going directly to the journal, or else she will do a quick search in IRIS.

Maria has tried other databases, but they have left her flummoxed. She tried Anthrosource but was unable to log in; she also has had a very difficult time with Academic Search Premier. When a resource lets her down, she does not go back to figure it out—she retreats back to JSTOR, where she has had better luck.
Melody

Melody is beginning her dissertation in history. She is studying how sensory perception, smell in particular, has shaped the development of urban culture. She certainly is an expert researcher. She used ProQuest a lot and often uses the American Periodicals Series that she accesses through the Index and Databases page.

As a historian, Melody relies on archival materials more than most graduate students. (See the interview with Aaron, who is also a historian, for a similar situation.) Melody visits archives and takes photographs at a high resolution when she can, especially regarding court proceedings. Melody has created her own database for references using a Filemaker database called Bento. While I admired her creativity in doing so, I also thought it regrettable that she was not using EndNote or RefWorks, ready-made databases that, if used properly, could have saved her a lot of time and effort as she organized her references and wrote her dissertation.

Stephanie

Stephanie is working toward her master’s degree in cell and developmental biology. She is a very advanced researcher who always goes straight to PubMed, bypassing the Libraries website altogether.

Stephanie was very good at searching PubMed. She often starts broad (in our example she searched for “autophagy,” which yielded 4,277 hits) and then narrows it down (in this case, “Beclin,” a gene related to autophagy, yielded 270 hits. From there, she narrowed it to 15 hits by typing “Beclin knockout autophagy”). She said that through this process she normally starts with 400 hits and can often narrow it down to around 15, which is a much more manageable number.

However, I was surprised to learn that when she could not access a document found in PubMed from home, she did not know that she could log on through the Libraries website or the VPN and so just waits until she could log on from campus, or else she gains access through her undergraduate institution, University of New Haven. As an alumna, she has access to all PubMed articles for free.
When I asked Stephanie to find an article where we knew the exact title, she typed the full title into the Google Scholar search. The article came right up, and the Full Text link was highlighted because she was logged on through a Rutgers computer. She admitted, though, that had she gone through PubMed, she probably would not have had access to the article. It is interesting that, although Stephanie is a very good researcher and scholar, Stephanie does not use the Libraries website at all.

Stephanie was familiar with RUcore and liked having access to it, so that she could “get a taste of what everybody’s been doing.” She discovered RUcore by exploring the items on the roll-over menu on the Libraries main page.

Stephanie occasionally sends papers to her colleagues, and she has also emailed links or PDFs to herself.
Section Two: Themes Of Interest To The Web Redesign Process

This section explores nine themes that the Project Team considered to be most important for purposes of the redesign process. The primary themes tracked in this report pertain to the design and efficacy of the Rutgers University Libraries home page; issues and problems related to general site navigation (with particular attention paid to the A–Z List of Online Journals, Indexes and Databases, and off-site access), vendor issues, and interlibrary loan; federated search habits including (Google, Google Scholar, and Searchlight), librarian interaction, social networking, and the use of citation management systems such as RefWorks, EndNote, and Zotero.

The Interview Evaluation and Summation Process

The interview process generated a great amount of raw data. Interviews ranged from forty to sixty minutes. Each interview was videotaped and recorded onto a digital audio recorder. Video was transferred onto a DVD for further analysis though coviewing sessions within the Rutgers University Libraries system. All interviews were transcribed by Duncan Business Services, Inc., in Loveland, Colorado. This generated 808 pages (single spaced) of interview data, an average of 28 pages per interview.

To process this data, I used HyperRESEARCH to track and to code interview data. I used Scrivener to compile synopses of each interview and to compile this report. These software applications helped to manage non-linear data and to trace and then pull together information pertinent to the core themes of the study as articulated by the Project Team and stated at the beginning of this section.

The purpose of this report is to summarize the interview data and to correlate the findings with the primary themes as set forth by the Project Team. A further analysis would correlate the two reports and to go farther in recommending a specific call for action that the Rutgers University Libraries should take from here as they work to redesign the Libraries Web interface.
The RU Libraries Main Page

As with most students I interviewed, Rhonda also was not at all impressed with the Libraries main page. She tried to be nice about it, but when I asked her to scan the page and tell me what she thought, she said that the first word that came to her mind was “boring.” She said, “Maybe a little more color would be nice… all I see is just brown and beige and eggshell.” And, I added, a lot of white space. She agreed, but at the same time was leery of there being too much information on the website. She is hesitant to explore and try new tools, or click on questionable buttons, for that very reason.

Many if not most undergraduate students did not have very much experience using the Libraries main page, a finding that correlates with the survey findings as reported in the Survey Report (pg. 7–11). Leslie, for instance, had no idea how to even get there when I asked her, so she went to www.rutgers.edu and found it there. When the main page came up, I asked her what she thought of it, and she was decidedly unimpressed. She did not know quite where to begin, and then when she decided to click on the link for “How do I find articles in my topic…,” she became instantly dismayed by all of the text with which she was met, suggesting that she didn’t have the time to read it. “If I didn’t have time to read them, I might just skip all this and hit search website and see if that made it any easier.” Randy tried to cover for the fact that he hardly ever used the Libraries website. While we were looking at the main page and I asked him how he liked it, he replied that it was useful and began reading off the features that were there. “You know, I don’t expect it to be like, ‘Wow! That’s pretty informative.’ It has stuff here on the side that you can do like ‘Ask-a-Librarian,’ ‘Hours and Directions,’ ‘Search Website,’ just all the main basic things that a university library website should have. It’s pretty good to me, so I have no problems with it or anything.”

Then I asked him how often he found himself looking at this page, and he replied in an abashed manner, “To tell the truth only for like if I’m doing like a paper or something or if I need to find like a book or something.”

Leslie often became confused as I asked her to explore the Libraries website during her interview. She wanted to look up articles in psychology but did not know whether she
should look under social sciences or under humanities. Then she was reluctant to explore some links because she did not know if they were going to take her to another website or stay within the Rutgers site. When I asked if she had ever used Google Scholar, she seemed eager to try it so that she could get away from the Rutgers site! “I’ve seen Google before and umm I would feel like it might be an easier search engine for me.”

Looking at the Libraries home page, Leslie said that the terms that she saw there were cryptic and vague. “Maybe [if the] terms were a little more umm encompassing of exactly what you were going to get when you clicked on there, umm [it] would be a little more helpful, like search I-R-I-S and other catalogs. I wouldn’t…I wouldn’t know exactly what that was.” This was echoed by other students, such as Barbara, who noted that many of the terms used for items like Searchlight and IRIS were not self explanatory enough—she could not tell at a glance what the things did. I asked her to find the A-Z list of journals, and her hunch was to go to the Find Articles tool. Or was it indexes and databases?—she really wasn’t sure. “I just found it so difficult, I… I… That’s when I found Google Scholar because I would have to scroll down to what, something that I already knew was effective for me [such as] Ecology Abstracts.” Even when she finally did get to the A-Z Journals list, that page was equally confusing. She expected the A-Z listings at the top to correlate with the headers below. So rather than just click on the letter, which would have taken her to the journals that began with the letter E, she scrolled down, thinking that the list was a comprehensive list of journals offered. Yet at the same time she knew that didn’t make sense—those were not journals that she saw listed (it was actually keywords used in e-journals). Obviously, she began to get frustrated and confused. When I showed her how the page worked, she responded: “This [heading] gives me the impression that these are electronic journals… This kind of search pattern is typically used on the web to just get you to a certain point on the current page.”

I asked Ryan how engaging the Libraries home page was to him, and he had a hard time with the question. I was a bit surprised that a music major would have a hard time articulating his emotions, but when I pushed him for an adjective, he came up with “boring.” Similarly, when I asked Drew how he liked the main page—this was Camden’s page—he replied without a pause, “It’s boring.” He does not go to the page at all if he can
help it. “I don’t know if you can change, of course you can change the lettering, but umm it just doesn’t pop out at you.” I asked if he used any of the tools and he said no. “I don’t use this piece.” He was not impressed with the rollover menu and would prefer that they operated more like tabs, which he used a lot in his browser. When I asked Paul to comment on the Libraries main page, he noted that he preferred the Camden page to the general Libraries main page. He said that the Libraries main page was boring: “It is very plain and it’s not inviting.” At the same time, there seemed to be too much going on—he was looking right at things and yet not seeing them.

Dev also commented that the Libraries main page was boring. He thought there was too much white space. He didn’t like that the photo in the middle of the page lacked a caption. Who were the people depicted? Where were they? Nothing here looked familiar to him. And while he could see the utility of the roll-over menu, he hadn’t really explored much past the first few options. He would pretty much go right to Indexes and Databases, and that was about it. I asked if he had ever used Searchlight, and he said no, that he had not. He gets his journal articles straight from Google. He repeatedly emphasized that he does not use the Libraries website at all.

I had an extensive conversation with Greg regarding the Libraries main page. He responded in very strong language; it is safe to say that he pretty much hated it. He expected the Rutgers University Libraries logo at the top of each page to act like a link back home, and it didn’t. He commented that one of his English professors had experience in Web design, and that person had brought many of the sites’ limitations to his awareness. For instance, the gray rollover menu bar, which Greg called “this black-on-gray thing here.” He noted that it didn’t really “do the trick. It should be like some sort of…it just doesn’t draw your attention to the menu at all.”

Greg wanted the page to have more of a homey feel to it. The center of the page especially lacked a personality. As he put it, “If this is your home, what is this really doing for me? Like, it just doesn’t tell me much about Rutgers library or what it is. It’s just something attached or maybe something on the right panel that would switch like this, or maybe like a top thing or a bottom thing, but there’s nothing central that really ties it together when you go to the website. It just; it says Rutgers University Libraries and that’s
the only way you really know it’s a library. It doesn’t say, ‘This is the Rutgers University
Library found at blah, blah,’ ‘This is why this is important…’ ‘You should check out….,’
‘Here’s our help guide,’ or ‘New user guide’…”

I asked, “So this is the homepage and it sounds like you want it to be kind of
homey?” to which he replied, Yes. “Welcome to the libraries,” I stated, as he nodded his
head. “It should be like almost, almost like ah, ah…ah a foyer…”

“Yeah,” Brain agreed. “I mean, this has no character to it. Right now, it’s just purely a
tool. If anyone’s like interested in, ‘What’s Rutgers Library like?’ and they go to the Rutgers
Library home page, they’re going to be like, ‘Huh? Oh there’s this little news and event
thing, what is this all about.’ And I don’t thing anyone ever clicks on this stuff.”

As Greg was saying this, I noticed how close he had to get to the computer screen in
order to read it. I pointed this out to him. He said that some text was bigger and some text
was smaller, and the smaller text was almost a waste of time. “The fact that the text is
smaller means people aren’t going to read that, this probably like hierarchy people are
going to read this…There’s no like real hierarchy of information, no sections that are
bolded out to say, ‘This is the section for this,’ ‘This is the section for this,’ ‘This is the
introduction,’ or ‘This is how we can help you to use our libraries.’ It’s just like you have
to actually read the whole thing, which no one is going to do.”

Greg also thought that the foreign language box on the Libraries main page was a
joke. Only the welcome page had been translated. “What good was that?” At a glance, it
made it seem that there would be an entire website in Chinese, Arabic, etc. But this was
misleading. “Yeah, but I mean you’re not going to have people navigate the website in
Chinese. It seems kind of pointless to me and a waste of web space.” And anyway, why
not just give a little flag icon for people to click on? That, he felt, would have been
sufficient.

On the main page, Maria had some very good advice. She seemed to think that the
things she needed should be highlighted or made bold and many things that she didn’t
need were in the way. Why did they need a link for “how do I find a book?” Especially
when the journals were so buried and hard to find. “Less is more,” she said, and her
advice would be to simplify. It seems to me that this would be a great opportunity for some true user-design, workshop issues in the future.

Bernardo felt that the main page had too much information, that it could be “fast” and much more user friendly so that he could learn more things. As an example, Bernardo said that it was frustrating that there was no link on the main page where he could log on to his account, that he had to go to the link “borrowing” to get there. When I pointed to the link at the top of the page, he got flustered and admitted he had never seen it before. “Probably this was added not so much time ago,” he said. He said that there was only a small handful of things that he really used or needed: access to the journals, databases, and to his account.

These comments tell us that we should not try to solve the “but they don’t know how to use it” problem by adding more text to the website. Many students said that there is too much information there already. These students are overloaded with words. They want filters, and when those filters don’t work, they filter the filters. When they poke around our website and don’t get the results they expect, they do not come back for more. They go back to what works for them: Google, Wikipedia, or perhaps Blackboard or Sakai. And can we blame them?

**Note on the Rollover Menu**

As documented above, many students were fairly mixed on their opinion of the gray rollover menu. Some found it adequate, and maybe one or two said that they liked it. Ryan probably spoke for the majority when he said outright, “Get rid of it. It’s terrible.” Many, like Kevin, find the Libraries main page to be a little bit frustrating. The design is strange to them. “I mean there’s nothing down here [pointing to a large block of white space]. All the information that you’re going to need is right in front of you, but the one thing that… mildly irritates me is that it changes when you scroll over everything…”

I asked Rhonda how she liked the roll-over feature on the main page. I commented that there was a lot of information breezing by her as she skimmed her mouse over the page, yet there didn’t seem to be anything that said, “Stop! Look here!” I asked, for instance, if she had ever used Searchlight, and she said that she had not—she always went
straight to Indexes and Databases. I asked her to try Searchlight, and when she typed in
the word taser, 70 references came up. She was pretty amazed at this, yet she had never
even tried to use this tool before. The roll-over feature was good for those who knew
where they wanted to go and needed to get there quickly, but it did not encourage
browsing and actually served to hide—in plain sight—some of the more powerful tools
that the Libraries website has to offer.

**General Navigation Issues**

This section of the report discusses various navigation issues encountered by the students
in the interview process. To gauge the efficacy of the website, I tried to ask each student to
find something that they had located for a recent research project or else that they had
never seen before.

A good example of this “mouse-in-a-maze” process was when I asked Robert to try
to find the journal and the article that he had located via Google by going through the
Libraries website. He had never found an article in this way before, though he had found
books using IRIS. So he started with the “Find Articles” link on the Libraries main page,
and then he read the section “How do I get my article?” From there, he decided to do an
IRIS search for the journal.

Robert selected “Periodical title begins with…” under the drop-down menu and
entered the journal title. The second item in the resulting list was the one he wanted. He
clicked on the title and found two items, neither of which seemed to be journals. In
retrospect, this conclusion was probably an error: the second listing was the correct title,
but the year, 1954, suggested to both of as that we were looking at a book reference, one
that had been published in that year (and was therefore probably outdated).

So Robert went back to the search box and this time selected “Periodical Title
keyword.” Now, 30 items came up. The list was confusing and not alphabetic. This
seemed to be going in the wrong direction! Robert said that this was the same problem
that he had when he was searching for books. “I put the exact title and edition and it
wouldn’t be the first choice that came up with all the titles.”
Once Robert found the journal through IRIS, the question then became, where is the article? It looked like there were only hard copies of the journal. The librarian recording the interview confirmed what Robert had noted: “There was no way to search for the article on this screen.” However, following the librarian’s lead, we finally did see the link heading “electronic access” and the link: http://www.jstor.org/journals/00251909.html, via “Access from campus or login via Rutgers account.” There were actually four ways to access the article: one was JSTOR, the other three were through SERSOL.

When Robert finally got to the journal via JSTOR, we knew we were getting close. He easily found volume 33, issue number 5. “Well,” said Robert, “now that I know how to get it, it’s not that difficult.”

Barbara was eager to talk to me because she frequently felt very frustrated by the website. She would go to the Find Articles section and then have a very difficult time from there—she would click on the link and then think, “Okay, I’m here—now where do I go? I have no link that says ‘go here!’ If it does, at least it’s buried.” So then she went back to the main page and clicked to IRIS. In the demonstration, Barbara already knew from Google the journal where her desired article was located. So she typed *American Naturalist*, the name of the journal, into the IRIS search box. Though many links came up, none of them were the one she wanted. This had been a problem for several of the students interviewed.

Randy had never used the Libraries website to try to find journal articles though he had used it to find books. When I asked him to show me how he would locate a book, he briefly hovered the mouse over the “Find Articles” link but then decided to click on Searchlight. He clearly did not know to go to IRIS to find books.

**IRIS**

Even after having found an article that he wanted through Google, Ronald had a very difficult time finding it when he tried through IRIS. First, when he did find a journal that he was interested in (*Social Journal of Preventative Medicine*) IRIS gave him a date: 1977. He did not know that was the date the journal began publishing and thought that it was the
date of the journal in question. Rebecca was on hand to correct him, but she too said that this was confusing.

As Ryan illustrated a search, he went directly to the IRIS advanced search. He looked under title for *From Tinfoil to Stereo*, and the book came up immediately. When I asked him to look for a journal article, though, things didn’t go as smoothly. He changed the format on IRIS to journals and magazines, and nothing came up. He broadened the search to “record industry,” and 19 items came up. None of them, though, appeared to be useful to him.

I probed this a bit, stating that he was probably sure that there was more information than he was finding on the Libraries website. So why wasn’t he exploring it more? “That’s a good question,” he replied. “I think I’m used to being able to go to a search page and just put in what I want and get like hundreds and hundreds of results. And then I look at those results and say, okay…I wasn’t specific enough in my search. And then I would go back and refine the search so that I would find the results. But when I’m using this search [IRIS], I don’t really. I guess I’m not being general enough in my terms, so…”

What he was inferring was that rather than tinker with IRIS, he’d just go back to Google.

I asked Stephen if there were any other problems that he had with using the Libraries website and he said that he sometimes had difficulty with IRIS. In fact, he said that almost every time he had to search for a book he had to consult with a librarian “just to make sure I’ve, I found as many of the possible results as I could have found.” The librarians would help him to find things, but they never offered to teach him better search skills.

Bernardo expressed frustration with IRIS quick search because it did not help him find articles or chapters in edited volumes. Because of this, he often uses Google to browse for economics papers. He tried Google Scholar before but it did not work for him. So now he primarily uses Google to search for articles and Amazon.com to search for books. Bernardo told me about how once he went to Alexander library and asked a librarian to help him find the book. She tried looking on Iris and did not find it in the library. She then looked for it on Amazon.com, and it came right up. The book indeed was not at Rutgers, so they bought the book for him. He was very pleased with this
service, but as a result, now when he wants to find a book he goes directly to Amazon and skips IRIS completely.

When I asked Aaron to find the latest edition of the journal *Technology and Culture*, he used IRIS to get to it right away. However, later in the interview he said that he often will type in IRIS a title such as *New York Times* and, of all those listed, none of them are the one he wanted.

**Indexes and Databases**

Several students use the Indexes and Databases page to begin their research. This may be because when students click on “Find Articles,” “Indexes and Databases” is the first link. This was the case in Regina’s interview, but when she came to the actual page, she was disappointed. She had not been here before so did not know what to expect. “I was actually hoping that there would be a search, a search engine like a search engine, like a…” Was she about to say, “Google?”

I asked Regina if she was familiar with any of the sources that she was seeing on the Indexes and Databases page, and she said no, that she had not seen them before, though she acknowledged that some could be very helpful. But then, as she began to scan the whole list, she grew intimidated and said, “I don’t understand why its put in sections for, unless I had something specific, but if I did I wouldn’t go through the library to get it.” For instance, she saw the link to JSTOR and said that if she wanted JSTOR, she would just go to JSTOR directly. She did so and started with a test search for “Hamlet.” There were 27,941 hits. She then typed in the word “qualia” and there were 1,590 hits. Regina said that the JSTOR “site must have changed since ah my freshman or my sophomore year. I thought it was on here, well then again I was…It was a pretty abstract class, but I could not find anything.” To narrow her search, Regina often would next enter in a phrase rather than a single term. Here, she tried “Jackson,” ”qualia,” and “knowledge argument.” This brought the results to 37 hits—a very manageable number.

Regina’s confidence was, however, not yet improved. “How many pages can I get on this?” she asked with suspicion as she spied an article that was interesting to her. “JSTOR didn’t help me out the last time I was on it.” I asked why she thought she was
getting different results, and she said it must have been because she had not gone through the Libraries link. At this point, the librarian recording the interview chimed in: “It knows where you are.”

Catherine demonstrated her search for how the word “ræd” was used in Beowulf, which is a word for help, advice, or counsel. She went from the Libraries main page to the Indexes and Databases section, and from there she went to Medieval Studies via the Arts and Humanities link. She then selected the International Medieval Bibliography, through BREPOLiS. She first did a general search for “ræd,” and nothing came up. So she tried “counsel,” and there were three pages of articles, with 73 hits. This was a comfortable amount that she could comb through easily and fairly rapidly.

Catherine, who was one of the most sophisticated undergraduate researchers that I interviewed, frequently uses the MLA database as well. She accesses this through “Indexes and Databases”—>”Arts and Humanities”—>”Literature in General.” She prefers MLA because she spoke with a librarian once who told her that “MLA pretty much has everything.” She also uses Literature Online sometimes (LION) and says that there is one other, but she could not recall what it was named.

In the MLA database, she did find an article by searching under the work “ræd.” She immediately knew that it was not available to her electronically and that she would have to go through interlibrary loan.

In Rhonda’s case, she had learned about Academic Search Premier in high school, when her English class took her to the libraries. She remembers the lessons that she learned during that session, and that is why she now starts with the Indexes and Databases page when she starts writing her papers. “I already know how to go to Research Resources [on the main page], so I’m not going to click on anything else.”

In demonstrating a search, Rhonda went to the Indexes and Databases page and scrolled down to the Criminal Justice Abstracts. She did a search in SCA Illumina for “taser” and came up with 15 results. When I commented that I had expected more to come up, she replied, “Well it is quality not quantity, you know.” I replied, “And that is why you like this database?” to which she agreed. I asked if she ever used Google and she said no, that “it would be all over the place and resources that were made by some guy in
his basement, you know.” Perhaps here she was actually referring to Wikipedia; later in the interview, she admitted that she does indeed use Google a lot: “for everything, all the time.”

One of the articles that Rhonda found via the SCA Illumina site was titled “Ethical Constraints on taser Use by Police,” by J. Klenig. It was published in *Policing: A Journal of Policy and Practice, 1:3, 284-292* (2007). When I asked her to retrieve the article, she clicked on the title. This did not take her directly to the article but to another page, which gave her the complete abstract but not the article. (It should be noted that Rhonda did not click on the “Search for Article” icon that was clearly posted by the article.)

She was surprised that clicking on the title of the article in Illumina did not take her directly to the article. At this point, her confidence was shaken a bit. This new page, in Serials Solutions, seemed to have most of the information that was on the prior page. There was a link that said “Article” in large type on the first page, but she was afraid to click on that because there were so many other options. Which was the right path to take? “I don’t know. Is it going to take me to the article or is it going just show me another page like this?” She did go back and click on that link, and it took her straight to the article. But she said that even still, the road signs should have been more clear: “I think maybe something like this, it should be like big like click here for article or something like that because I know a lot of people at least a lot of people that I know and I as well, you don’t really have much time to figure things out you want to just get your sources, get your information and get writing.”

In his research demonstration, Greg began at Google and typed in Rutgers libraries. This took him to the Libraries main page, and from there he clicked on “Find Articles,” then “Indexes and Databases.” And here, he had his first complaint. “One of the things I never liked was there’s so many things here and I don’t know what to really go through.” He added that he often had to ask a librarian for help.

As Greg scanned the list of Indexes and Databases, I asked which ones he had used before, and he has used many of them, especially EconLit, Access World News, Academic Search Premier, Searchlight, Google Scholar, CountryWatch, EIU online, EBSCOhost,
JSTOR, PAIS, and Springer. When I asked what he thought of Searchlight, though, he said that it was not all that helpful. For him, after using the other indexes, it was redundant.

When we asked Pavan what feature the website lacks that he could really use, he directed us to the Libraries main page and proceeded to Indexes and Databases. And here, he became overwhelmed. “You have to go through each one to find the kind of article you’re looking for. I mean, I know Literature Online is basically literature; I would find a lot of stuff about John Milton, but I wouldn’t know if there’s any John Milton in anything else, and if he was in any humanities or of any politics, I wouldn’t know so because…I don’t know which ones to look into.” Pavan knew that there was probably a lot of information in these databases that he was missing, but he didn’t know how to tap into it.

Drew also uses Academic Search Premier and EconLit. He found these databases through browsing the Indexes and Databases page.

Stephen is another heavy user of Academic Search Premier. Most of Stephen’s experience from using the Libraries website came from his work with a professor for whom he was “collecting data on water table observations in South America. There’s no central database for that, so she was hoping to lift information from other individual research papers” in order to construct and publish a map. This was very arduous and tedious work, but it did give him good experience in finding data that was embedded in articles. Because of his research, Stephen kept an eye on specific hydrology journals. He demonstrated a search for Hydrology in the Electronic Journals List, and two journals came up. (After the interview, I learned that this small result was because he had kept the “Title begins with” feature on. Had he used the drop-down menu to search using “Title contains all words,” he would have found ten items.)

Stephen next tried Academic Search Premier, where he typed in “Amazon” and “water table.” Six results came up, but this was fewer than he had remembered or expected. He decided to try Web of Science next. Here, he had 19 hits. He clicked on the title of the second hit, an article titled “Vegetation and Hydrology Changes in Eastern Amazonia Inferred from Pollen Record,” from a journal called Anais Da Academia Bresileira de Ciencias. He next clicked on the Search for Article tab, which took him to the Serials Solutions page. Here, he saw that this journal was available through two sources.
Stephen clicked on the link “journal” beside one of the sources, and it took him directly to a page for that journal.

The trouble is, from here he had to start his search all over again. All the links that he had clicked so far told indicated that he was headed in the right direction. To get to this point and have to basically start from scratch—even though he knew he was on the right track—was frustrating for him. From here, Stephen went back to the Web of Knowledge page to reassess his options. (Had the article been readily accessible, the fact that it was probably written in Portuguese would also have been a problem for him.)

We tried a second article that immediately took him to a dead end when he did the article search. The third took him to an article in the Journal of Vegetation Science, and the Search for Article button took him to a Serials Solutions page that had the word “Article” in bold type. Finally, he had access to a genuine PDF! The article was titled “Relationships between soil hydrology and forest structure and composition in the southern Brazilian Amazon.” Table two, on page 186 of the journal, indeed had a table that had his information.

When I asked how he would normally keep track of such articles, Stephen said that he had tried saving citations to EndNote before but that had not worked for him.

Bernardo had some issues with the Index and Databases section of the site. The “Indexes and Databases” link takes him to a menu that has the entire list of databases, and he finds this to be “incredibly useful for students.” He uses the International Financial Statistics and Global Financial Data quite often, but he says that at first it took him a long time to figure out what was going on there. “Why are the databases located in articles? Why do you access databases though the Find Articles menu? It doesn’t make any sense.” He added that was especially confusing at the beginning, when he was just starting to learn to navigate the website. “It is not intuitive at all.”

The A–Z List of Electronic Journals

One of the findings by which I was most surprised was how few undergraduate students used the A–Z List of Electronic Journals. For instance, during our interview with Pavan, he found an article in Searchlight that was of interest. He noted that it was not really the full
text of the article that came up so much as the citation—and that took him to ISI Web of Science. That, in turn, took him to an article that was published in a journal called *Milton Quarterly*. Rather than poke around the Web of Knowledge database, I asked him to look for the *Milton Quarterly* journal directly, and this took us down some interesting turns.

I expected that Pavan would to directly to the A–Z guide of Electronic Journals. But instead, he took his customary path to the Indexes and Databases page and found nothing. Then, he went to Google. Through Google, Pavan located the journal and saw that it was available through Wiley-Blackwell, but his access from there was blocked. It turns out that this is one of the reasons why Pavan does not use Google: “Through Google, usually you can’t access it unless if you’re a scholar of sorts or you have an account, otherwise you have to pay for it. I see where I can view a free online sample of the quarterly, but otherwise I don’t think you can access it.” Sure enough, when we tried, it did not access the article.

At this point, the librarian who was recording the interview pointed out that we did indeed have access to the journal through Rutgers, so we went back to the main page to search again. I prompted him to look closely, and that is when he found the A–Z listing of online journals. “Ah I probably should have gone through this,” he said. And when he did, he found the journal right away. I asked if he had ever seen this listing of journals before and he replied, “No I haven’t used this. Well, maybe I have, but I don’t remember.”

Greg had commented in the interview that some journals show up repeatedly in his research, especially the *Journal of Evolutionary Economics* and the *Economic Geographer*. So I asked if he ever tuned in to those journals directly and just scanned the table of contents. He replied a bit cryptically: “Yeah, when I pick up an article from somewhere, I’ll go through the table of contents for that issue.” But pick up an issue from where? Greg did not seek out hard copies of these journals that I could see. I commented that it seemed to me that he usually entered into a journal through an article, and not the other way around. He replied yes and added, “It would be nice actually if kind of like if you could just go find articles and just have how they have an index and database here, if they something of just like journals.”
He was looking right at the Find Article pages, so I told him to scan down farther, to look at the last link: “Electronic Journals List.” Immediately, he said, “Well, there you go! I never even noticed that because I mean literally I’m going top down; that’s my reading strategy and my reading strategy picks up on the…it’s not going to pick up on the last thing first, it’s going to pick up on…oh there it is.”

So he clicked on the link, and was immediately disappointed yet again. “This doesn’t seem like what I would really want. It seems to just have a list of journal sources rather than the individual journals.” I told him that he could actually search every electronic journal by its title, and that was helpful to him. He had no idea that you could do that before. Though he found the list under the A–Z heading a bit confusing, when I showed him how he could easily maneuver to a specific journal from here, he said that was a very useful thing to know.

When I asked Maria to find the journal History Teacher without using IRIS, she had a very difficult time doing it. (Even IRIS didn’t yield the journal though, interesting enough!) When she navigated to the page that had the Electronic Journals List, she did not see that list because it was hidden at the end of five subject headings, under “find articles.” As several students have done, Maria saw that page and thought that it was a list of journals. When she did not see her journal listed, she got frustrated and felt lost. This is one of the key problems in navigating our journal holdings, and this can be easily fixed by a simple restructuring of this information. At the end of the interview, Maria expressed her frustration that she had never seen the A–Z Journals list before, and she knew it would have been a very useful resource for her had she known it was there. The couldn’t believe that she had been on campus for five years and never used—or known of—this resource.

At one point she said, “You know I was always wondering; now you said that was just indexes and databases and not journals because every time I was on that I was always like, ‘Why doesn’t Rutgers subscribe to more things? It doesn’t seem like there’s a lot of things here.’ That is what I always thought to myself.”

Anne had never used the Electronic Journals list before, but when I asked her to try she very rapidly and easily found a journal that she wanted, Sartre Studies International. When we found the journal, we saw that it was available through three different
databases: Literature Resource Center, Academic Search Premier, and Wilson OmniFile. Anne selected the first one listed, Literature Resource Center, because she had used it before and so it was somewhat familiar to her. But rather than take us directly to the journal’s home page, it brought up a chronological listing of the journals content, with no way to search for articles pertaining specifically to her topic, nausea.

Anne told me that she has normally accessed the journal by going directly to the journal’s website. She did this by typing the title of the journal in the search window in Internet Explorer, and the journal came right up. But then we were at a new dead end. The page that we went to at first was not really the journal’s main page. One we finally got there, Anne found an article that was interesting to her, but the journal wanted $30 for the article. “That’s one article I can’t use,” she said. “I am not going to spent $29 on it.” Anne did not know that she could access the article through interlibrary loan. Another time, she found an article via Academic Search Premier that was not available due to a twelve-month embargo. The librarian recording the interview noted that this was a way by which the publisher could entice libraries to subscribe to the hard copy.

I asked Lisa to look for a journal that she had used and to look for it via the website. The journal that she thought of was Sports Psychology. I helped her to navigate to the A–Z list of electronic journals. Like a few other students before her, Lisa expected that the list that followed the A–Z listing would be a catalog listing of available journals. She scrolled down to S, but nothing was there. So she did a general search where the title began with “sports,” and several journals came up. She noted one called Sports Marketing that was available through several different sources. “How do I know which is the best one?” she asked. I suggested that she consider the date ranges and pointed out that some ended in 1999, others in 2002. She decided to try Business Source Premier to see what was there. She was thrilled when she at last find the journal. “I should be reading this all the time,” she said. So I then told her about TOC alerts.

I asked Kevin to find the latest edition of the Journal of Applied Physics. He started at Searchlight, then thought about it and decided to go to the list for electronic journals. He clicked on the letter J and then scrolled to the bottom of the page, which ended at
“Japan.” At this point, the librarian recording the interview chimed in that he could use the search box at the top of the page, which he did.

Bernardo uses the A–Z Journals reference guide extensively and has an advanced familiarity with several of the professional journals in his field. He strongly desires a tool that would help him to somehow track and bookmark particular journal articles. Bernardo complained that the Libraries website is far from intuitive. Though he knows his way around now, he recalled it being very difficult to navigate when he first started using it. It especially took him a long time to find his way to the A–Z List of Journals, which has become one of his favorite research tools on the Libraries website.

Greg also noted that there should be a link to the A–Z Listing of Electronic Journals from the Libraries Indexes and Databases page.

Subject Research Guides

Dev had never seen the Subject Research Guides. None of the students I interviewed ever had! This is unfortunate and clearly marks this as one of the most underutilized resources on the Libraries website.

Access Issues: Do I really have to pay?

The first time I encountered a student who thought that he or she would have to pay for an article that they found in a peer-reviewed journal was Robert, a student in accounting. In demonstrating his search on a paper for a course in management information systems, he started by going straight to Google and doing a search for “group decision support systems.” He had several articles come up right away that he recognized and had cited. Then Robert said something that really surprised me. When I commented that it was cool that Google had taken him directly to the PDF, he replied, “Only part of it. You have to purchase it.”

The article was titled “A Foundation for the Study of Group Decision Support Systems,” by Gerardine Descantis and R. Brent Gallupe. It had been published in the May 1987 issues of Management Science. I asked Robert if he would actually purchase the article and he replied yes, if he had too. I asked how much he spent on articles such as
this, and he hesitated. He replied that he had not spent more than $20 getting papers. From what I have seen, however, papers often cost more than that. Robert added that if he were persistent he could often find where someone else had purchased it and posted it on a different website.

Like Robert, Regina was hesitant to look for journal articles because she thought that she had to pay for them. I asked her when the last time she accessed an online database or looked at a journal article, and she replied that “a lot of journal articles you have to pay for, so I don’t really, I stopped doing that. I stopped looking for ah anything specific…It gets—like, you get like the first like two pages and then it tells you have to subscribe and pay some fee, and so I don’t do it anymore.”

This, to me, is very unfortunate. Here we have another hard-working student who desires to learn and, though very protective of her time, still wants to be able to go directly to the heart of the matter, figure things out rapidly, and to grow as a scholar. The system, however, is not helping her to do so. Regina has no idea that the materials she wants are available to her for free. Moreover, Regina has never used Google Scholar, and she never uses the Libraries website. Through the interview, she began to learn more about these resources and how they were available to her once she was logged on. I explained that this was her tuition dollars at work, that the Libraries subscribed to these journals and that if she were to log on properly, she would be able to get the articles even when she was at home. “I didn’t know that. I didn’t know any of that.”

“That’s pretty powerful,” I added.

“Yeah,” she agreed. She added that she had often avoided journals previously because she “couldn’t get anywhere with them.” She said that usually she only used articles that were given to her directly by her professor, through e-reserves.

It should be recalled that this is also the reason that Pavan does not use Google: when he had logged on from home, he found that he had to pay for articles located in this way. He did not know that had he logged on through the VPN, or had he accessed Google Scholar from a campus computer connection, that the article might have been available to him for free. Rhonda also said that she used Google Scholar sometimes, but then she acknowledged that when not on campus, she cannot access most of the articles.
Again, she did not know that had she logged on through the VPN there would have been more available to her.

The same thing happened during my interview with Randy. He did a search for Afrocentrism using Searchlight, and he was pretty amazed when over 100 hits came up in more than one database. He noticed the *Journal of Black Studies* right away and said, “Yeah that is pretty good. You can just actually do your whole report like just here.”

It turned out that Randy had seen the *Journal of Black Studies* before, but he was under the impression that he would have to pay for the article in order to access it. He had been searching through Google at home, probably, and constantly hitting his head against the wall once he found an article that he had to pay for. I asked him if this happened very often and he replied yes. “And then you just back away from the article?” I asked. “Yeah,” he replied, laughing. He had no idea that if he logged on through the Libraries or through the VPN he could access these articles for free.

“This is really great actually,” he said.

Anne was a very adept researcher, yet when we found an article that was not available to her she complained that she would have to pay $30 for it. She did not know about interlibrary loan. Tara, one of the most proficient undergraduate researchers with whom I spoke, surprised me when she said that when she is unable to secure an article that she desires then “there’s not much I can do. The articles are very expensive, sometimes I actually just, make go around.” What she meant by this is that she will either go look for another article or else ask if her professor has access to it. Tara did not know about interlibrary loan. The same was true of Dev, as will be discussed at a later point.

When I asked Barbara to show me how she began to search for articles, she went immediately to Google Scholar. She said, though, that even though she logged on to the Libraries website from at home, often it would not let her have the article. She would then have to wait until she got to campus, where she would (magically) have access. She did not know about the VPN. Her understanding was that older articles were available via Google Scholar and that she had to log on through campus to access the newer ones.

Stephanie, who is working toward her Master’s degree in cell and developmental biology, is a very sophisticated scholar. I was blown away by her knowledge and
advanced researching skills. However, she usually went directly to PubMed and bypassed the Libraries website altogether! When she could not access a document from home, she did not know that she could log on through the VPN and so just waited until she could log on from campus. Jeffrey, a graduate student in music, had never learned this. At the time of our interview, he said that he would only access JSTOR when he was logged on to a campus computer so he could “have access to it right away.”

**Keeping Found Things Found**

One of the most recurring issues with all students was how they would navigate back to something that they had already discovered once before. In other words, how good were they at keeping found things found?

Several students simply cut and pasted the citation information into a Word document. While showing me how he did his research, Ronald began by opening an MS Word document and pasting things that he did in a blank document, so that he could retrace his tracks later. At the close of the interview, he e-mailed the file to himself. Similarly, Randy also made a notation of URLs and all pertinent citation data as he browsed for information. “I write it down. I write it down on paper or I can just copy and paste it and put on like into Word and then just save it.”

Randy and Ronald were among the very few undergraduate students whom I interviewed who was truly concerned with keeping found citations found. However, neither paid close enough attention to the references cited in one article to let those references lead them to other references.

When Kevin finds an article that he wants to keep track of, he sometimes downloads the PDF and then emails it to himself via gmail, so that he has it waiting for him on the gmail server whenever he needs it again. Then, if he wants to, he can go and search through his own files “before having to go try to search through the Rutgers Libraries or anything like that, or I mean after I’m out of here and don’t have access anymore or can’t link VPN or anything like that.”

As will be seen, very few students used citation management systems to organize and keep track of their data. The most elaborate workaround system I discovered was from
Melody who had actually created her own database system using Bento, a light-duty database application by Filemaker. Stephanie occasionally sent papers to her colleagues—and she has also emailed links or PDFs to herself.

**A Note on Delicious**

When it comes to keeping found websites found, I was surprised that not one student had heard of Delicious, even though for many of them it would have been a great tool. For instance, Rhonda had recently used a magazine titled *New Jersey Law Enforcement* or something like that, which she learned about from her police-officer friends. She found the magazine by using Google. However, when I asked her to relocate it for me, she was unable to do so. A service like Delicious would have helped her to keep track of such sources.

Leslie, for instance, bookmarks many of the articles that she finds in her research. I asked how many such bookmarks she had on her computer at home, and she replied somewhere between 20 and 30. However, she was not too concerned with using bookmarks to keep track of things. She said that usually, if a professor wanted her to read a PDF they would post it on Sakai, so she would not have to worry about keeping track of it—they would track it for her. This was true of reserves as well. “I’ve only used the find reserves and umm usually in the syllabus if your professor needs you to use find reserves, he’ll tell you exactly how to do it, or he’ll put a link to it in Sakai.” Ryan noted a similar thing. He was not concerned with keeping track of articles because most of what he needed was on the Web page for the class, and he could always go back to the professor’s online syllabus and print things out.

Rather than download PDFs, Stephanie tends to keep access to her articles bookmarked on her computer even though she admits that most of those links to specific articles would not be active unless she were to log on while on campus. With dozens if not hundreds of bookmarks, she keeps them organized by folder in her browser. She did not know of services such as Delicious that could help her to organize and have access to those links from any computer with Internet access.
As previously mentioned, Bernardo would like the ability to somehow bookmark journals. He recalled that at one time as he was navigating the Libraries Web interface, he was asked if he wanted to do so but then was later unable to relocate that option. He did not know about Delicious.

**A Note on TOC Alerts**

Another tool that I was surprised so few students knew about is the ability to sign up for Table of Content (TOC) alerts.

After introducing Greg to the A–Z List of electronic journals, I then encouraged him to sign up for TOC alerts. Again, he didn’t know that you could do this and immediately stated, “That’s pretty powerful.” Lisa also said that she did no know about TOC alerts but said that these would have been very helpful to her.

**Federated and Google-Like Search Issues**

If there is one thing that students know how to do it is to type into a search box. In fact, largely due to the success of Google, many students look for search boxes as a place to start. The power of the federated search is that it is a means by which a person can query several databases at once. The drawback is that, perhaps due to the simplicity of Google, people expect the search to be intuitive and are not trained on what exactly a federated search is and how they can limit or expand the databases that are being searched.

I realize that technically Google and Google Scholar are not federated searches. Because most students are not aware of these distinctions, I am clustering several seemingly disparate search tools in this section.

**Google**

There is no competition: Google makes the academic world go around. Several students accessed the Libraries website via Google. I have already mentioned how Rhonda first said that she didn’t trust Google but later admitted that she uses it a lot: “For everything, all the time.” Juan, a philosophy major, began his research demonstration by going directly to Google and then to the Stanford Encyclopedia of Philosophy. When I asked
him about this, Juan confessed that he hardly uses the Libraries website at all. He has used IRIS to find books, but as soon as his research turns to journal articles (which has not been not very often), he relies on Google. However, when I took him to Searchlight and we tried searching from there, he immediately had good results: 77 references came up. Perhaps after this he will check out some of the search options that the Libraries website has to offer.

When I asked Stephen where he began his research, he said, of course, Google. “I think not just myself but a lot of people the first place to look is Google.” In his research for his entrance into the Energy Institute Contest last year, in which he had to write a ten-page proposal on how Rutgers could reduce its energy footprint, he found out about a project with the Philadelphia Eagles through his Google search. “One of the terms I must have typed in was ‘Go Green’, and that’s the name of their program...So it came up in one of the links and you know when I started reading about it, I found news articles and umm I…I spoke to a few reporters. I actually got in touch with the organization. You know they, they brought me down to...well that, that was after the fact, but umm that’s how I found out about it.”

When Drew meets with a dead end using Academic Search Premier, he types the title of the article into Google. If that doesn’t work, he gives up and looks for something else. If he cannot find material readily available, Drew will simply change his research topic.

Google often takes Juan to Wikipedia, and he pays close attention to the citations at the end of an article. Those citations lead him to references that he might cite in a paper, but he never cites Wikipedia himself. He said that some of his professors have actually encouraged his use of Wikipedia. When he finds an article that he likes, he types the title into the search bar of Google and usually can find it that way. This is what he did during our interview, and this took him directly to Google Scholar and an article that he wanted, “Pronouns, Quantifiers, and Relative Clauses” by Gareth Evans. (He recently became aware of Google Scholar through a friend, but he did not go directly to Google Scholar during the interview.) For Juan, then, Google and Wikipedia are linked one to the other—Google leads him to Wikipedia, and from Wikipedia he goes right back to Google. Leslie
expressed the same thing. “I typically use Google and Wikipedia and everything,” she said.

**A Note on Wikipedia**

Some mention should be made of the students’ use of Wikipedia. While Wikipedia is not a federated search tool, students often get to Wikipedia though Google. Wikipedia also deserves note because of the ambiguous relationship many students have with this pioneering online encyclopedia. Students are using Wikipedia—a lot. However, they are reluctant to admit to it and never, ever cite it in their work. In a way, Wikipedia is an invisible yet frequently utilized resource.

The interviews reveal that many students use Wikipedia frequently, but they do not cite it. Ronald, for instance, had no qualms about using Wikipedia. But he used it only to garner general information, such as definitions, and to find other citations. He gave me one of my favorite quotes of all interviewees: “I don’t cite it because I’m not an idiot. I’m not a masochist. I’m not going to start citing Wikipedia.” Paul said a similar thing: “I would get stoned by my professors because if they found out that I would use Wikipedia…ah one of my professors though umm it’s a science class; he actually says that when it comes to science, Wikipedia is not that bad, but you know in Wikipedia anybody could go and put information on there without you knowing it. So you can’t really trust Wikipedia you know.” Catherine similarly said that her professors had warned her against using Google or Wikipedia “Teachers always give you the talk that Google, you know Wikipedia doesn’t matter. I’ve seen how easily you can change it, so it frightens me.” Robert concurred, saying that he had repeatedly been told that “a lot of the stuff on there may or may not be true. So even a lot of professors that I’ve had wouldn’t even accept it as a reference or anything useable.” He admitted that he did sometimes check it out for general information, but he did not trust it as a valid or reliable resource. “If it’s like something you don’t know much about… then look on it, it would give you like a basic idea but you’ll always look on there and it will say one thing and you look on another website and sometimes it will be different; things will be different so… I try not to use it.”
Though a frequent user of Wikipedia, Leslie said that she would never cite it either, though she would cite the articles she found at the close of an entry. The professor would never need to know that she found them using Wikipedia. Rhonda likewise does not cite Wikipedia, though she says that she might use it for some background information. She is obviously very concerned with the quality of information that she reads and trusts that the Libraries website will be the best source for her research.

Alex looks up articles through Wikipedia all the time—and he trusts what he reads there, for the most part. But he usually uses the citations at the end of an article to lead him to other references. “Everybody does that,” he said. Yet in my research, I find that few others pay as close attention to the breadcrumb trail as they perhaps could.

As mentioned in his profile, Ryan goes right to Wikipedia when he begins a new research project, and he trusts what he reads there. Similarly, Dev is an unapologetic user of Wikipedia. He as Google as his home page, and a Google search will often take him directly to Wikipedia. This doesn’t bother him at all. During his interview, he demonstrated research on reporter genes, as he had for a recent class assignment. “A lot of people say Wikipedia is not good to use for research,” he said. “That may be true, like you know for ah social sciences kind of things, but for science, anything that’s science-based Wikipedia is always very accurate because it’s other scientists that are editing it, umm so I find it ah very, very accurate for science-based [research].”

Dev pays very close attention to the citation at the close of a Wikipedia article. It was a trick that he learned from one of his professors. If this does not yield a lot of information, he goes back to Google and then may try Google Scholar. One of his frustrations with Google Scholar, though, is that it occasionally takes him to an article that he would have to pay for. When this happens, though, he, he knows that he can access the article through Rutgers and get it for free. He did not know that he could log on via the VPN.

Like Dev, Greg does not use Wikipedia for hard-core research, but he does consult it now and then. He checks right away to see what citations the article has, and if there are no citations listed then he figures the article is “bunk”: “It might be interesting, but I can’t validate it because I’ve read about how people would read something on Wikipedia, cite
it as an article, someone would write a paper or something professional citing this media source by then Wikipedia has corrected it and gotten rid of it and then the paper gets published and then someone writes it back into Wikipedia sourcing the paper so. Even then, I’m real hesitant.” His professors tell him not so cite Wikipedia but at the same time they tell him that it could be useful as a quick reference for facts and biographical sketches.

Regina primarily uses Google to search for basic terms and concepts, so of course Wikipedia often comes up as well. She said that she didn’t trust Wikipedia entirely, and that recently she looked for an article—on the concept of Qualia—and it “was a little too long and didn’t get to the point that I wanted. I wanted a short quick answer.” For that, she turned to her Mac’s dictionary feature, in the dashboard.

Tara uses Wikipedia for general knowledge, but she never cites it in her research. “Sometimes when you encounter a new term; well that happens a lot in genetics; we even make up a lot of our terms. Like immunochemistry or immunohistochemistry. It’s…or you know certain umm research techniques, certain molecular biology techniques, a lot of it you don’t do in lab, a lot of it is done in the big labs where they the DNA, DNA technology labs. So you don’t understand or you don’t know it, so Wikipedia is a good source for getting the basics.” She also pays attention to the citations at the end of an Wikipedia article. Stephen also uses Wikipedia, which usually comes up when he does searches for things such as “thermodynamics” in Google. And he trusts what he reads there, though he also would never cite it. He does use the citations from Wikipedia to lead him to other references.

Regina iterated that she was “a very instantaneous person.” She expects things to come right up via a Google search, and if it doesn’t do so, she quickly moves on. I asked, then, if she ever paid attention to the citations at the end of a Wikipedia article, and she answered by showing me printouts that she had with her that were Wikipedia entries. She had cut and pasted terms and concepts that she needed for her research, such as “philosophy of the mind,” “mental causation,” “anomalous monism” but had not included the citations. “I delete the references from the bottom. I’m not going to read them; it’s just a waste of paper.”
I asked Pavan if there was one tip or trick that he would want to share with other students, and he replied: “I’d say avoid Wikipedia and Google, and stick with the library’s home page...I have a huge advantage compared to everybody else in the world because as a Rutgers student I have access to this, I mean I have access to RefWorks which saves a lot of time, and I have access to a library database which gives me access to a whole array of articles and journals which I normally had to pay for if I wasn’t a Rutgers student.”

**Google Scholar**

I asked Ronald if he ever used Google Scholar and he said no—“Why would I bother with Scholar when I’m already getting A’s and getting all the information I need from a regular Google search?” He added that Google Scholar would give you “the citation but not the context.” As he stated that he “liked clicking the article and seeing it,” he noticed that there was a link that would allow him to access that article through Rutgers. “Oh look at that! Wow. That’s cool. Oh...I’ve never, I’ve never done this...” Ronald, then, did not know that he would have access to many of the articles that were available through Google Scholar if he logged on from a University computer. He did not know about VPN until the librarian recording the interview and I told him.

Leslie conduct a search in Google Scholar for “feminisms” and “psychoanalytic theory” and had 52,600 hits. One of the top hits was a book by Nancy Chodorow. When Leslie realized she had a whole book available to her, she said “Wow!” But then again she felt overwhelmed—again, there was too much information. She wanted even more reassurance that this was what she was looking for, that this would be a good resource for her hypothetical paper. I pointed out to her that Google had not only pulled up a book but it had also highlighted the words that she had searched, everyplace that they occurred in the book. Google seemed to also be looking out for her time, saying in bold yellow highlighting: “Look here! I found this for you!”

Lisa said that she liked Google Scholar and had tried using it before. But again, she kept coming up against dead ends, where she could get the abstract but not have access to the entire article. I told her that had she accessed the Google Scholar search engine while on campus, it would have probably given her access to those articles for free. She was
amazed. “Our school should advertise that! Todd, you should put up flyers in the computer lab and the library.”

I agreed, saying, “Yeah it’s actually surprising how few people understand that or know that. All you have to do is logon. So when you go to the library’s page, you logon and then do your Google search.”

Lisa said that she felt that there were “a lot of tricks” to learning our system, “like when we first went to a page, like it didn’t come up and then we went back and clicked other things. Didn’t you…I feel like it’s kind of like you have to know how to fidget with it to get what you need.”

Kevin does use Google Scholar but has had difficulty sometimes accessing articles at home, even though he did know that he had to log on through the VPN. He finds that it is just as easy to do his searching when he is on campus rather than try to search from home. He realized that he could log on and access the articles when, after finding an article on Google or Google Scholar, he could log on to the Libraries website, paste the title into Searchlight, and access it that way. From there, he noticed that once he was logged on through the VPN, the articles on Google Scholar were suddenly available to him.

**Searchlight**

During her interview I noticed that, although she stated that she desired a search box to help her to navigate the Libraries website, Leslie scrolled right over the Searchlight feature several times. I brought this to her attention and asked her why she didn’t give it a try, and she replied that it was not really clear that this was a tool that she wanted. I noticed this same thing in several of the student interviews.

Pavan knew about Searchlight, but he thought that it only looked through “all the major databases.” But when I asked more about this, pointing out that he had often breezed right over Searchlight as he perused the website, he acknowledged this and said that he didn’t really know why he had never tried it. Or if he had tried it, he recalled that it just took too long. When he tried the basic Searchlight search, though, typing in “Milton, Liberty,” it came up with 45 hits (including three duplicates).
Searchlight does often take a long time to perform a search. When a link would take a long time to download information, I noticed that Pavan would just move on. When I asked him about this, he pointed out that he had just opened another page and proceeded with another search—he would return back to the first page when the search had completed. This, again, is typical of the undergraduate students that I interviewed. They are very, very guarded of their time. I noticed that with Pavan, he would wait maybe ten or 15 seconds and then move on to another page. The problem with this strategy, of course, is that after a short period of time he had a lot of open windows in his browser, that became difficult to navigate. Several students, though, just moved on without waiting.

Paul was one of a few undergraduates who demonstrated Searchlight in the interview, which, he informed me, “looks at all the major indexes.” A search for Malcolm X in Searchlight yielded 150 hits. He found an article that he was interested in, titled “Malcolm X’s influences on the Black Nationalist’s movement of southern black college students,” in a journal titled The Western Journal of Black Studies (spring 1993). However, here he was again at another dead end. Even with the camera operator’s assistance, he was unable to secure the PDF of the article. After a few minutes of trying, he realized that accessibility to that journal began in 1996, so the article was not available to him. Even the advanced Searchlight feature was failing Paul to some degree. It would provide him with a list of which indexes that he might want to search, but it would not suggest the best databases for him.

As we looked at the Indexes and Databases page, I asked Lisa if had ever used it before. She said no but that she had used Searchlight for a paper that she was writing on gender in male-dominated sports. She only had a couple of weeks, though, and when she could not find an article quickly she changed topics to psychology and the impact on anxiety in sports and people’s personal lives. She demonstrated this by going go Searchlight and typing in “gender roles in wrestling,” and indeed nothing came up. She then did an advanced search clicking the Psychology box and immediately found an article that could be of use to her: “The toughest SOBs on cable; gender roles in professional wrestling.” The journal was Southern Sociological Society, 2002.
A click on the title took us to Illumina, and the abstract. Lisa immediately e-mailed the citation to herself. Then she clicked on the Search for Article button. A new browser window opened that said that we had no holdings on this topic. Another dead end!

“Oh, okay, this is why I remember it,” said Lisa. “So I didn’t do this project, I had switched the topic because a lot of times one of the requirements of the project umm almost all of our sources had to be within the last 5 years and even this source is 2002. The problem is umm I couldn’t find, like a lot of these things umm it even mentioned later and when I showed a librarian, they said I would have had to talk to the library to have them renew an account and they said because of the budget, they got rid of some accounts they used to have for certain journals.”

This was troubling for me. Had Lisa honestly sought out a librarian who basically told her, tough luck? Or, which I think is most likely, had Lisa just reached a dead end and stopped? Had she ever really gone this far before in her search for an online article? In all likelihood, She was not trying to deceive me as much as she was just trying not to appear foolish.

During the last few steps of this process, each click opened up a new browser window. This made it impossible for her to use the back button and made it more difficult to navigate.

At any case, once we found a pertinent article, I was not going to let Lisa stop even though we didn’t have it readily available. I showed her how she could try to access the article via interlibrary loan. She seemed very interested and said that she had used the service previously for books. She also said, though, that the service was painfully slow. Lisa wanted information immediately. She did not have time to wait.

When I asked Kevin to demonstrate a search, he went straight to the Searchlight tool and looked for articles written by his future mentor at Northwestern, Dr. Scott Barnett. He immediately found an article that he recognized that had been coauthored by one of Barnett’s graduate students.

Even though Kevin is familiar with Searchlight, he still did not hesitate to voice his frustrations with it. He didn’t like how it “opens a million windows.” Even simply going from the basic to the advanced search opens another browser window. “It really is
unnecessary for me to have another window for this.” When he does get to the advanced
search page, he often forgets to click which databases he wants to search, and that also
gets frustrating.

I pointed the Searchlight tool out to Bernardo, and he immediately tried it but was
annoyed when the economist he searched for did not come up. After he conducted his
search for a person, he learned that Searchlight thought he had been searching for a title,
but then there was no option to go back and search for the author.

Librarian Interaction

Many students do all that they can to not engage a librarian. It seemed to me that Dev, for
instance, was a bit intimidated by librarians. I encouraged him to not be afraid of them, to
consult with them whenever he had a question. He said yeah, that was “definitely one of
the things that, umm, that the reference desk…I haven’t been there yet, and last semester I
did all the research myself. But somebody told me, ‘Oh! You should just go to the
reference desk, you know…If they don’t help you find all of the articles that you’ll need,
they’ll definitely point you in the right direction.’ And that was one of the things that I was
definitely struggling with: where do I start?”

Paul, though, was an exception. When his search for Malcolm X in Academic Search
Premier yielded only 12 hits, none of which were pertinent, he became stumped. I asked
him what he would do next, and he said, “This is where the reference desk comes in
handy.” Paul had no fear of librarians; he knew that they were there to help him and never
hesitated to call on their expertise.

Greg was grateful to the librarians who introduced him to many of the resources
available, especially through the Indexes and Databases page. He did not make first
contact with a librarian, though, until the first semester of his senior year. He went to the
Help Desk and they gave him the contact information for the librarian who specialized in
economics. He contacted him, and that was when he learned of the EIUonline (economics
intelligence unit).

Regina was probably more typical of undergraduates. Outside of this session, Regina
had never contacted a librarian for assistance, though she knew that she could through
Meebo and Ask A Librarian. She had not really even used the Libraries services. She came in when she needed a space to access the Internet via her laptop and to study, as she was when I met her and asked if we could meet for an interview. She had not even checked out a book “in a good four years.”

**Ask A Librarian**

During her interview, I asked Leslie if she had used the Ask-A-Librarian feature that was prominently displayed on the Libraries main page. She replied that she had been tempted but was suspicious that it would not be a real person on the other end of the chat box. This was also stated by Wan-li.

One of Kevin’s favorite features on the website is the Ask-A-Librarian feature (even though he had only used it twice). He related how one time, as a member of the engineering government council, he was wondering what happened to the artwork, a red rectangle, that was in front of the science and resource center. So he used the Meebo chat to ask the librarian what had happened to the art. That person said she would check into it and get back to him with an email the very next day, and she did, as promised, early the next morning.

**Face-to-face Interaction**

Jeffrey told me once how he ordered an article through interlibrary loan and thought that was a pretty cool system. He was especially surprised at the fast turnaround. He found the article through JSTOR. When I asked how he accessed JSTOR, he replied that he usually Googled it. He said that he had to log on to the site through a campus computer: “What I find great is that it knows you’re logged into a university website, so you have access to it right away.” He tried logging on from home, though, and found that it didn’t work. He did not know about VPN access. Jeffrey recalled a time where there was an article on JSTOR that he desired but could not access. He went to the music help desk downstairs in the Douglas Library, and that is when the librarian showed him how to use interlibrary loan.
Interlibrary Loan

Even though he was a fairly sophisticated user of the Libraries website, Pavan did not know that interlibrary loan could be used to request journal articles. Paul did not, either. He had used this service to request books before, but never a journal article. The librarian recording the interview pointed out that since his paper was due in less than a week, the article probably would not arrive in time. Still, he was interested to know that the service was there for him and acknowledged that while most of his research so far had come from books, in the future such a service could be of much use to him.

When I asked Tara if she ever used interlibrary loan, I was a bit surprised when she said no, that she had never used it. “I know it’s an option. A lot of the times when we have umm textbooks in class or umm other papers you know we had to read. Professors will say you have the option of inter-library loans; you can do that, but I’ve never had, I never have been in a situation where I’ve desperately needed to use that option.”

Anne likewise did not know that she could request articles that were not available to her. Dev did not either, and when I asked if he had ever used interlibrary loan he retorted that the Libraries website was cumbersome enough as it is. When I asked Rhonda if she had ever used Interlibrary Loan, she replied that she didn’t “really have the patience or the time for that.” When I assured her that it was easy and said that I would show her how to use it, she was actually interested and wanted to see.

Catherine, who studies English and music, uses interlibrary loan a lot. However, this is because, like her English teachers complain, Rutgers does not have enough medieval resources online to facilitate her research on Beowulf.

Greg, who has downloaded and archived lots of articles as PDFs, has used interlibrary loan to secure many articles. The past semester, he had probably received over 20 articles from Interlibrary Loan. He discovered the interlibrary-loan service when he was taking English 303, Business Writing, where he was forced to do a lot of research. He thinks that it was a reference librarian who first told him about the service. He did not learn of it through his use of the Libraries website. One of his complaints about interlibrary loan was that he had to key in all the information. He said that if was a few weeks into the
term that he finally realized that he could use cut-and-paste to do this more effectively, but he wished that there was a button that would make it more simple. At the same time, Greg realized that would be something that EBSCO would have to do “and not you guys.”

Melody uses interlibrary loan a lot—she says that she needs to request nearly 1/2 of her articles in this way.

Barbara recalled having a very difficult time trying to figure out interlibrary loan. She has used the service for books, and at first she said that she didn’t use it for journal articles because the Libraries website provided easy access to most of the articles that she sought. Later in the interview, though, she said that having to log in separately to interlibrary loan was confusing to her. “I never used this for years because I thought I couldn’t log on here until at some point someone told me I could the barcode from the back of my Rutgers ID and then I could order books and stuff.” The interlibrary loan page simply asks for a patron ID. Her other confusion came when last year she ordered some books and received a message back stating that hers had been converted to an E-Z Borrow request. What, she wondered, was the difference?

Barbara later stated that she had not ordered articles through interlibrary loan because she didn’t know that she could. I told her about how the system worked and how it was also a way by which she could order book chapters, and she appeared to be very interested in this service. She added that it would be very convenient for her to be able to check books out online and have them delivered to a different library or held until she could come in and retrieve them. “I may not be able to get to the library for a few days, and I don’t want somebody else to check that book out before I get there.”

**Social Networking**

Juan is a pretty active Facebook user. He has posted several links to YouTube on his page in order to share them with his friends. When I asked if the Libraries pages had similar ways that you could post things onto your Facebook page or email them, he said yes, absolutely.

Leslie did use Facebook, and she saw it as a tool to enhance her academic research.
She used Facebook to collaborate or at least keep in touch with her friends in a Freshman Interest Group. The teacher had set up a group so that the students could keep in touch with each other after the class was over. This didn’t quite count as collaboration, but who knows? In the future, these connections could develop.

I asked if this would be a good way for the Libraries to impart information to her, and she replied, “Yes if that was as... as like when I first clicked on it [the Libraries main page], I said that I noticed that it was pretty long. Umm I think that we’re kind of just used to having things really quick right there. So if there were a Podcast, I’d probably click on it and, and it would be easier for me to listen to it and to follow it, especially if I could open it, then I would have the option of opening it in another browser and doing it while I was listening to the Podcast instructions.

Leslie said that she wished that the Libraries had “an easy to read search engine.”

**Citation Management Systems**

Citation Management systems can be useful in several ways. Online versions such as RefWorks and Zotero can help students to keep found citations found and provide direct links to the online source. They can also help students to see how each citation should be formatted in any number of ways, and they can even create Works Cited reference pages on the fly, using features like EndNote’s Cite While You Write function.

I found that students were often confused by these applications, though, and very few students used them effectively. Alex for instance said that he has hundreds of PDFs saved on his laptop. When I asked how he keeps them organized, he said that he just kept them in separate folders. I inquired as to his use of citation managers, and he said that he kept track of his things using EasyBib. But the discussion from here was a bit confusing. I asked if EasyBib was an application that resided on his hard drive. He said no, that it was a website, but that everybody used it. “I don’t know anyone who uses EndNote or that other thing. Everyone uses EasyBib.” He said that one of his professors introduced him to the service. He liked that you could just type in an ISBN number and EasyBib would fill in the rest of the reference, which he could then just paste into his paper.
This was interesting for many reasons. Alex is a very smart student, but he is very
defensive about it. After a bit of a round-robin where he did not answer my questions
clearly, he finally admitted that he had only started using the service recently. Yet he was
confident that “everyone at Rutgers knows about it. Our professors tell us about it too
because they don’t want us to do it wrong.” What Alex didn’t seem to know was that
EasyBib will only give you the MLA citations for free. If you want to download citations in
other format, you have to pay. Also, EasyBib does not help to organize files, like EndNote
or RefWorks can.

In the absence of citation managers, students devise workarounds to help them keep
track of citations. Rhonda, for instance, first jots citation information down on a notepad,
and then she uses MS Word to compile her thoughts and compose her papers. When
Regina found a PDF that was of interest, she would often save it to her computer. She
organized her files according to class, one folder per class. Regina has never heard of
citation managers, such as EndNote or RefWorks, that could help her to keep information
organized and together. However, for composing a list of references she uses a website
called Workscited.com.

Greg does not use a citation management system, but he wishes that he would have
learned about RefWorks earlier on. Keeping found citations found was a “real pain in the
butt” for him He basically just downloads the PDF and keeps them organized by subjects.
He does like that EBSCO will at least help him to format a citation properly. But again,
when he wants to relocate an article that he has read somewhere, he has to “open his
computer” and he has like “twenty articles open and it becomes a pain in the ass with
MLA.”

Greg complained that he did not properly learn how to do research and to use
RefWorks in the freshman writing course at Rutgers, Expository Writing. “All they teach
you is basic writing that you should have known in high school, but they don’t teach you
how to research, they don’t teach you how to do a bibliography, and they don’t teach you
RefWorks, which are three things that every college student, no matter what major they
are, should have.”
He was frustrated that he had only heard of RefWorks about a month and a half before he was graduating. He had tried to use EndNote, too, but he said that he had to just give up. “It was too much for me.” Part of his frustration was that he didn’t know how to get information out of IRIS and into EndNote. Then, he found that EndNote wouldn’t work with OpenOffice. In the end, he walked away from the application frustrated and feeling that he had wasted his time. He had used fewer sources than he otherwise would have due to lost time. “Plus I had to…spend more time like going back and figuring out what was what, what I was using and what I actually had and using that time when you don’t have as much as you otherwise would.” Yet Greg was aware that citation management tools like EndNote and RefWorks could be very valuable assets for him in his academic career, if he knew how to use them.

When I assured Greg that a citation manager such as RefWorks could be useful to him, he asked if it was a Rutgers-only thing or if it was something that other schools would also have. He seemed to be concerned with portability. I suggested that for his purposes, an application like EndNote could help him to organize and link to the PDFs he had saved on his computer, and he agreed that such a tool would indeed be “pretty useful” for him.

**RefWorks**

Wan-li was fascinated by RefWorks when I told her about it, but she had never used it herself. Pavan is a new user to Refworks. At the time of our interview, he had about 15 references in his RefWorks database. Pavan does frequently download PDFs, and he keeps them on a jump drive. If a PDF is not available, he will paste the text into a Word document. He keeps the files on his laptop computer and keeps backup on his jump drive.

Rhonda also downloads PDFs on occasion and saves them on her computer, in a folder dedicated to each particular class. She is not real concerned with archiving those PDFs, however, due to space constraints on her hard drive. Plus, she has already kept track of the citation and is confident that she could always find the article again if she needed. Similarly, she did not use any citation managers, though she had recalled hearing about RefWorks before. She said that she had transferred to Camden from Maryland, and
“they were big on using it there.” However, she never got into using it because it was “just more passwords and more things that I have to try to remember.”

Dev occasionally downloads a PDF and keeps it on his laptop, but he is not too concerned with archiving these files. He just keeps them until the assignment is finished, and then he deletes them. He had heard of RefWorks but had not used it. He said that one of the librarian had actually discouraged it by saying that it was “very difficult to use…and she never really explained to us.” When he needed to make sure his citations were proper, he would just go to Google and type in “how to cite a journal article in Chicago manual style” or something like that. He noted that there was a site that would even do the citation for you, but only MLA. (This was EasyBib, but he did not recall the name of the site.)

Tara learned how to use RefWorks from a librarian who gave a presentation in her Cancer class, and this tool has been very useful to her. “Yeah, so we had a session in the library looking at all the stuff and she mentioned that there’s RefWorks as an option for downloading your bibliography and you don’t have to type each individual publication into your umm paper. So right…RefWorks was one of the nicest things that I found. So I was able to put all my articles in, and I sorted them out through folders so I have Alzheimer’s research, Europe research, topics in human genetics. So if I look at my Europe research, I think folders…view and Europe research; I have all my European articles here, and I can just create a Word document and have them all put in to one Word document as a bibliography. And I can pick the style I want as well.” She had a notion that EndNote would be better for graduate-level work, but this was only based on things that she had heard and the impression that she thus had on the application.

When Tara finds a PDF, she downloads it onto a flash drive. She has hundreds of articles, now, on that drive. She organizes these within nested folders. She said that it would be very useful for her to be able to keep track of those files through her RefWorks database. She did not seem to know that this was possible to do through the EndNote application.

I asked Maria if she used RefWorks, and she said that she did. But when we explored this, however, she said that she only had a few articles posted on her RefWorks account.
and had learned of it through instruction from a graduate student. While this brief introduction was enough to get her going, Maria had not utilized the tool as well, perhaps, as she could.

**EndNote**

There were no student users of EndNote that I encountered. However, there were certainly students where EndNote would have been a very useful tool for them to know. Stephen, who had dozens of articles to keep track of for his work on creating a water table map of the Amazon, would enter the data into an Excel spreadsheet that he had created. He had basically created his own citation manager here—but how much more effective could this have been had he used EndNote to keep this data organized for him! Though he did keep track of all the citation information, Stephen did not download the PDF. In retrospect, he stated, “It could have been something I could have done.”

Barbara is the only graduate student I interviewed who was an advanced user of Endnote. She used it primarily to keep her PDFs organized, of which she said that she probably had between one and two hundred on her computer. She thought that Endnote was pretty easy to learn and has even customized her own fields, such as one where she can indicate whether she has the file or not.

**Zotero**

I only met one student who used Zotero, and that was Aaron. He loved how Zotero would automatically “grab” the title, author, publisher, and other information from any webpage he was viewing on his browser. He noted that this service worked especially well with Amazon.com, the Library of Congress, and with Columbia University Libraries. Aaron could organize this citations by folders. He liked how the new version of Zotero had a notes field where he could type quotes or notations that would be useful for his research. Zotero does a great job of creating and properly formatting bibliography pages as well.

When Aaron encountered a database or index that did not interface with Zotero, he could usually import the citation into RefWorks and then export out of RefWorks into Zotero. While it might be a roundabout way of getting the data he needed, it was quicker
and easier than typing everything in manually. Aaron noted that it would be very helpful to him if someone from Rutgers University Libraries could create a more efficient Zotero translator for the Libraries Web interface.

Aaron said that one annoying drawback to Zotero was that he could easily get duplicate entries. Also, when he had the Zotero window opened on his browser and clicked on a link, such as in IRIS, the new page would sometimes open in the Zotero window rather than in a new window. These were persistent annoyances. For this and other reasons, Aaron disliked how the Libraries website continually opened new windows rather than opened a link in the same window.

For as easy as it is to use, I was surprised that there was only one student who used Zotero.

**Conclusions**

This concluding section of the report summarizes the key findings in the interviews that should be considered by the Core and Project Teams as they move out of the research and discovery phase and into the redesign of the Rutgers University Libraries website.

**Students are Fiercely Independent**

Many of these students are fiercely independent, and they want the Libraries Web page to help them maintain a sense of autonomy.

Alex, for instance, does not collaborate with other students, nor does he use Facebook or other such tools to share information with them. He articulated this point when we discussed blogs: “I…I like…I’m a pretty opinionated person, so I make opinions on my own. I don’t need to see someone else’s because I mean right off the bat; I probably already know what they’re going to say anyway.” In a similar light, when I asked him if he had published anything he said yes. It turned out that he was referring to an editorial he had written for *The Targum*. He said that he aspired to run for congress someday, and so he had better not publish anything. When I responded that Obama had published, he said that he didn’t think Obama really had written those books. This was a person who was very concerned with saving face—and very, very difficult to nail down.
Bernardo is typical of a graduate student in that he is fiercely independent. This especially became clear in our discussion regarding face-to-face interaction with a librarian. I asked if he had ever used the Ask A Librarian feature on the website, and he said no. He said that once, he did meet the Economics librarian face-to-face and that he was helpful when Bernardo needed to locate a book that the library did not have. I asked Bernardo if a librarian were to hold office hours in the department would he take advantage of that, and he replied no: “I would say that’s inefficient. I mean, you can access, you can ask everything online.” This reminds me of a conversation I had with Ronald, the undergraduate who likewise said that a good scholar should not need to consult with a librarian.

**Students Desire Instruction**

While students don’t seem to spend much time exploring the Libraries website, at the same time they seem to crave instruction on how to use it. After complaining that he had a hard time finding resources through using IRIS, Stephen commented that the librarians would help him to locate things, but they never offered to teach him better research skills. I asked if he would desire such training and he said yes, absolutely—so long as he didn’t have to attend a class or something. I asked how he would like to receive such training and he replied that a tutorial on YouTube or something would be fantastic.

“How likely would you be to actually use those tools if they were available, and if they were available, in what format would you prefer them?” I asked. He replied, “YouTube videos would be great. Umm having to physically go somewhere might, might be a deterrent for some people….The YouTube videos would be I think quite valuable if, if they were, you know, if you could see them on the main page like a video tutorial on how to do something. I think that would be cool and umm things that you can play around with in terms of search, searching… If, if you could include that in the, the video or some, some short like you know easy to understand instructions.”
They Just Don’t Explore

As much as Ronald pokes around the Internet looking for information, he has not taken the time to explore the Libraries website. This really surprised me, and it surprised him, too, when I brought it to his attention. “It never even occurred to me to try the library website just to find out where [a particular] journal is. Not only that, but I could keep going and find something that’s online.”

Students also rely on their professors to spoon feed the best information to them. Several of the undergraduates articulated this. It seems that they are not really encouraged to dig deep into their research.

Collaboration

Maria was one of a few students I met with who had collaborated on papers with others. Her colleagues had used a wiki to do this, but it did not always work: data would sometimes be lost when two people attempted to edit a page at the same time. I had anticipated that students would be collaborating more than they are and had desired to explore how the new Web interface could assist them in this process.

What They Like

Tara, an undergraduate student studying genetics, really liked our Indexes and Databases section of the website. She liked the ways it was set up where she could search for a specific journal or search through a specific database like Academic Search Premier. The database that she accessed most often was NCBI [National Center for Biotechnology Information] and also the open MEDLINE [a component of PubMed]. When I asked Tara to demonstrate a search for me, she looked for articles pertinent to Drosophila and Alzheimer’s. She used the Google bar to get the Libraries main page. Then she clicked through Find Articles to the Indexes and Databases. She really liked how she could search through her subjects on this page: “This is very helpful.” She most usually looks through the databases under the heading of Science, Technology, Engineering, and Math. For her
courses in geography, she would go through the Social Sciences link or else go right to the A–Z list of electronic journals.

**What They Don’t Like**

Juan stated that his major problem with the Libraries website was that it did not look appealing. The philosophy department and even Sakai were more inviting to him. “if it’s more easier and it looks better, than I would obviously…I would just use it, especially if I’m like tired like from reading and all that. You just want to be able to click on something and like get a resource very quickly and read through everything...” It seems that the Libraries answer to student difficulties is to add more instructions and more text. However, student responses suggest that this is the exact opposite direction we need to go. Students want pages to be less cluttered. The metaphor of a desktop comes to mind. Which workspace would be more inviting to most of us: one crowded with six overfull pencil cups, a heavy black metal stapler, cubbies, cubicles, calculators, calendars, and note cards? Even if stacked and organized, it will get to the point where there is not enough room to open a book let alone a laptop computer. If you don’t use the calculator every day, get it off the desktop! Put the pencil sharpener in the drawer.

Students want to be reassured that such tools and resources are close at hand should they need them. But “too much information” is not only intimidating, it is down-right uninviting. Dev commented, “I usually don’t use the library site because I still find that it’s too…it’s pretty cumbersome, I would say. I think there’s just too many choices for you on the website, and a lot of times I don’t know what all of those mean.” When he does use the Libraries site, Dev accesses the Index and Databases page, which he accesses from the main page via the “Find Articles” link. But even then, he says, “I’m not even sure that that’s the most efficient way to find an article, so that’s a—a lot of times this doesn’t help much and I don’t know...how to...what’s another way to find an article. So that’s the biggest complaint that I have with the library website. I think that there are just so many different options for a way that you can find something and, you know, that’s very helpful if you know what you’re doing. But for somebody that’s coming into it brand-new, it’s difficult because you don’t even know where to start.”
So many students have said this very thing. Rhonda, for one, and Tara, who complained that the Libraries Web site is often difficult to navigate. If Tara knows where she is going and what she is looking for, the site works well for her. However, when her instructors tell her to find a specific publication or resource, “it is often very hard to find it if you don’t know where to look.” She added, “There aren’t enough signs on the pages to tell you that ‘you should look here if you’re looking for this’ or ‘go here if you’re looking for that.’ I had to—it was sort of trial and error before I figured out how to find, how to search specific publications without having to go through the data, the entire database doing a search.”

When I asked if there was anything that Alex wanted to see different regarding the Libraries, he said that basically they were disgusting places that look like they are “falling apart.” He said that they were very run down. He thought it was regrettable that they were shutting down College Avenue over the summer to “put in a garden” while they could not afford to keep the library facilities properly maintained. The only place in Alexander where he liked to study was in the downstairs common area, where I met him, which had large wooden tables and desk lamps (which he complained he would have to unplug if he wanted to plug in his computer).

When I asked Ryan what he would like to see added to the Libraries home page, he said that rather than one big thing there were a lot of little things that he would like to change. He hates the rollover and finds it very difficult to navigate. “Get rid of it; it’s terrible.”

**How Students Want or Like to Learn**

Time and again in my study, I found that a little education goes a long way with student researchers. For instance, Drew knew that he could use the asterisk character as a wildcard for letters, and he used this quite effectively in his searches. He had learned this during a brief conversation with one of the librarians at the help desk of the Paul Robeson library.

Pavan began using the Rutgers University Libraries Web site for a writing workshop he had taken as a Freshman. He later had a second introduction to the site through an
upper-division English seminar, which suggests to me that English majors tend to learn these skills sooner and more thoroughly than students in many other disciplines. In the writing workshop, Pavan learned to use LION, EEBO, and WilsonWeb, and he uses all of these databases regularly in his research today. More than most undergraduates, Pavan seems exceptionally aware of the resources available to him and seeks to take full advantage of them.

I commented to Pavan that, compared to his political science courses, his English course required a lot more research. He heartily agreed: “A lot more!” His political science professors are more likely to tell him with what resources they expect him to be familiar. “I suppose that makes the political science courses a bit easier in that professor says, you know, ‘These are the texts you should look at.’ As a [political science] student, you don’t necessarily have to make up your own topic; you can look through this and analyze it whereas in the English department you are basically forced to go [and find things on your own].” Similarly, Paul had not been required to write many papers for his major in economics. However, he made up for this in his minor degree, history. When I met Paul, he had just completed a paper on Malcolm X. He had started his research on that topic by going to Academic Search Premier, which he accessed through the main Camden Library page and then to the Indexes and Databases page. Paul stated that he learned of Academic Search Premier when he was a senior in high school and his teacher brought him to the Camden library on a field trip as a part of a class in AP English.

Many students had benefitted from the experience of the interview itself. In the spirit of reciprocity, I tried to give each student a tidbit of information that they could use in their upcoming research projects. For instance, the last thing that I showed Robert was the A–Z Journals List, where he could have gone directly to Management Science. At the end of the interview, Robert was just floored, as if the librarian recording the interview and I had opened a whole new world for him. “I had no idea that you could look up all this stuff, and it’s free!” The recording librarian asked if Robert had ever considered asking a librarian for assistance with his research. Robert said no, but now that he had seen “all of this,” he would. The librarian and I then told him about Meebo and the Ask A Librarian feature and suggested that he not be afraid to use them in the future.
Greg was one of the more sophisticated users of the website. I asked how he learned to use the system, and he said that he had started off with IRIS. He then started to explore the Find Articles tool and was immediately met with frustration. “I would go through all this, start clicking on various things and get fairly confused; figure it out once here and there, but then I would have to do it again and again, and I think this was the one that was most helpful…” [I think he was pointing to the link “How do I find an article on my topic?] which is more interesting because you’d have to locate an article, you’d need to make sure you complete the following blah, blah, blah, and but really if I just know about this index and databases and which ones were useful to me, that would have save me a lot more time and that’s where I really started getting a lot.”

Greg does to back to IRIS now and then but only uses it for books.

Stephen learned to use the Libraries website through a summer research program last summer that had a library orientation. He said that he learned a lot and that it was very helpful.

Probably the most proficient undergraduate researcher I met was Tara, who was studying genetics. Early in my conversation with Tara, a graduate students in genetics, I noted that she was talking more like a graduate than an undergraduate student. She replied, “They don’t teach us like undergrads. They don’t; they don’t treat us like undergraduates either.” She also said that she came from England where school was “almost like a regime; it’s a military regime.” She felt that her education here had not been as rigorous as it could have been. I asked how she learned to write and she said that she didn’t know but that it certainly wasn’t from Freshman Exposition. “I took Expos here, which is one of the worst courses taught here, I don’t like Expos. Umm the first Expos wasn’t very good. The second one I took, which is researching the disciplines, was a very good course that I took.”

I asked what had been wrong with the first class and she replied that “it wasn’t taught very well.” It had been taught by a graduate student, but Tara said that it was not so much the instructor that was the problem so much as the way the course was structured. She was reluctant to elaborate beyond that point. However, she did say that the second
class, on Researching in the Disciplines, helped her out a lot as she learned to use more sophisticated online research tools.

“The structure of the second class was completely different. We wrote one long term paper. Expos was based on six short papers that you write every two or every three weeks, and there wasn’t a lot of time to do a lot of analyzing of the texts and writing a decent paper or at a decent level. Whereas when I took Research with the Disciplines, I had a whole semester to write a 14-page paper based on up to about 10 sources where I had to mix and match sources; I argued for, I argued against and I built a topic, built a thesis almost.”

It was here that Tara had first started using the indexes and databases that were provided by the Rutgers Libraries. Later, though, in her biology classes, a Rutgers librarian came to the class to show students how to use the indexes and databases. “Nearly all my classes [in genetics] required to use the databases provided by the libraries meant that I had you know; we had, actually had—the courses that I took were genomes, cancer, and umm special topics in human genetics. All three classes had one lecture where we had one of the librarians come in and take us through the Rutgers Library research tools.”

Tara went to MEDLINE and demonstrated a search for Alzheimer’s and Drosophila. I asked how she learned to use the boolean operator “and,” and she said that was one of the things she had learned in her Research in Disciplines class “because when you’re searching for such a broad topic, such as ethnic identity, ah you have different words like race, culture, ethnicity; different aspects, immigration. You…It’s a very broad topic, so you have to learn to group certain topics; simulation was like that to group them together. So we were taught to use the and/or function.”

**What they Want (in a nutshell)**

There were a few recurring themes that emerged when I asked students what they would most desire from the RU Libraries website that was not already there. Many desired a search feature that was as intuitive, comprehensive, and easy to use as Google.

Ronald wished that besides a search box similar to Google, the website could somehow walk him through the research process. “What are you trying to do?” Possible
responses: research a paper, find a good novel, learn about UR Libraries. “What format are you looking for?” Possible responses: newspaper articles, music scores, journal articles, books. Why not a “Did this help?” dialog with suggestions like, “Do you want to try interlibrary loan?” Perhaps this would come up automatically if only a few items came up. Recall how at the beginning of this report I related Ronald’s comment that he felt that part of his job as a student was to learn how to become his own librarian, so to speak. At the same time, Ronald acknowledged that he did need help, and he wished that help was available to him though the process. Paul was not afraid to ask for help but still wished that there was someone looking over his shoulder, suggesting what other resources he could try and where he could go. The Libraries’ website, ideally, would have a lurking companion, then, that would observe, engage, inquire, and assist when and how it was needed.

Paul articulated this very well. “If only there were a little box that says, ‘You’re writing a paper for an English class and you know, Academic Search Premier would be a better place for you than if you were writing for a business class or for science.’ If you were, then it would suggest you go to a different database. Do you understand what I am saying? Rather than just leave it up to the person to guess.”

Paul was not the only student to request such assistance. Recall Rhonda’s frustration when, after a few clicks gave her unexpected and undesirable results, she lost confidence that the Libraries website was all that effective for her. Once Rhonda got to the Serials Solutions page, she saw that there were two venders listed, and she didn’t know which way to go from here. Her confidence in her ability to navigate the Libraries website was shaken, and she had to resist the very strong urge to go back to Google. When I asked if there was anything that she would suggest that the librarians could do to improve the website, she said that we should do more to “encourage investigation of the website. What is this button? What does this button do? You know, sort of make things more evident and interesting and accessible. Whatever that means.”

Greg checks out a lot of books. He estimates that he checked out 64 books over the last semester, and it was a real hassle for him to have to track them all down in the stacks. He wishes that he could order books that were in a different library and have them
delivered to a library where he could pick them up all at once at the circulation desk. Even simpler, he wished that there was a way where he could compile a list of books that he was interested in as he did a search—like a shopping cart list or the “marked citations” feature at Sage—that he could then print out with the call numbers and locations. Greg didn’t mind browsing through the stacks—that is not quite what he was getting at. And he understood that librarians had better things to do than hunt down books for students all day. But if the website could somehow help him create a list of books that he desired, that would be most helpful.

Greg does pay attention to the books that surround one that he looked for on the shelf as sorted through the Dewey Decimal Classification system. I asked if he did the same sort of browsing online and he replied to the affirmative. That was one reason that he liked general keyword or subject searches. If the Libraries website could better simulate this kind of browsing, he would find that a most useful tool. In closing the interview, I asked Greg what one thing he would most desire that the Libraries website could not yet do, and he went back to that “shopping cart” idea for book. “A lot of people don’t use it because it’s such a barrier to entry to actually go and find a book and are not sure where it is. If you could—I even said this in the survey that I filled out—I wish I could just print out a list that has like some sort of map. I know you have the little yellow booklet now, but actually print out like your shopping cart and have like a little icon where you can find each in the stacks. That you can print out and it maps out the books that you want to pick out onto it. It would make it a lot easier to navigate the library and make using the books a lot more effective and just make students use it a lot more than they do now, which is probably only if they really have to as last resort.”

Lisa noted that often, when she went to the actual book, she found related items that had not shown up on her search, and she didn’t get that. How cool it would be if she could search for books in the vicinity on the stacks, online! She wished that there was a way that she could browse the stacks from her computer. “It would be nice if I could see books that were in the area or even if they had umm...I don’t know how much time it would take, but even like umm a camera that kind of like, like a virtual, like vertical like I’m stepping there... You can notice it right away and then you don’t need to ask anyone
for help.” She added, “Also, that also means if you took a book out and you ah needed to put it back, you’d remember, you’d most likely remember where the book was instead of just leaving it out because you have no recollection of where it goes.” She then noted that she was aware that the librarians would rather that she not re-shelve books.

Dev noted that he especially liked it when professors posted the resources that students needed on blackboard. One “actually created a custom library page. So everything was there that we could need, and it took out all of this extra stuff that you know that people didn’t know how to use or they never did use and it just gave us the really useful databases; it gave us links to government websites, databases offered at Rutgers and things like that. And it had information on how to use everything that we needed. [The professor] uploads all of his lectures to blackboard; he uploads all of the labs, everything that we could need to blackboard and then whenever we [want, we] can get it. It’s right there for us.”

Dev wished that the entire Libraries website was more visual and less text-based. He wished that there were some sort of tutorial, “like a video-based thing or umm you know just even just text with pictures, things like that, I think that would be the best thing umm to help people. You know just know what’s, what’s out there.” He thought that a thumbnail of what the next page was going to look like might be useful, “so if you say, we’re going to go here and then this is what your page should look like. You know just, just examples ah how you should be doing what you’re doing and not just text because I think just, just text turns a lot of people off, especially now people have such short attention spans so it’s going to be difficult to keep their attention.”

As with other students, Dev also wished that the website was tailored more toward specific majors. “If, if you just did it specifically. ‘Okay, biology majors, here’s the link for you; history majors, here’s a link for you; anthropology majors, here’s a link for you…’ umm and just group you know key things that you would, that the librarians know a biology major might need umm so if you look at; there’s a bunch of plant classes being offered here, so you know here’s plant journals or here’s, here’s a, ah… a resource that you know that you can use to find out more about plants or whatever umm you know and
if they grouped it together like that, umm then you know I would be on the biology page without having abstracts in anthropology…”

Dev had never seen the Subject Research Guides that had been created for this very purpose.

Toward the end of his interview, I asked Robert what one thing he wished the Libraries website could do for him or that it could do better. Not surprisingly, he said that he desired a better search tool that would help him find articles. I showed him Searchlight, which he had never seen before, and at the first run we found an article that he found interesting, an article on Ergonomics that it found on Web of Science.

When I asked Stephen what he wishes the Libraries website could have done better for him, he noted that the different search boxes did not communicate with each other. When he did a search in Web of Knowledge, for instance, it would dump him into another website, but all of his search criteria was lost. He wished that somehow it could have brought the information along as he clicked from vendor to vendor.

Juan commented that if the Libraries Web site could be more like Facebook, he’d love it. The librarian assistant who was running the camera during this interview expressed great frustration: “We have three million bucks and, you know, thousands and thousands of journals and you like to use Facebook [and] Google [to find] your articles. So we have to…I don’t know. That’s why we’re doing all these surveys for.”

When the librarian recording Leslie’s interview asked what “magical tool” might be added to the Libraries main page that was not already there, Leslie replied that an easy link to a dictionary would be useful.

Bernardo frequently expressed frustration at the learning curve required to learn how to use the Libraries website. He trusted that the information was there yet was often unable to find it. It made him feel frustrated and stupid. He said that it was not until his third year as a graduate student that the reference librarian told him about inter-library loan. He said that he hadn’t found any place that says, “Look. If you’re a beginner, this is the information that you need to know to find articles, how to find books, how to operate Iris search, or how to use interlibrary loan.” I asked if on-line tutorials would be helpful and he said yes, absolutely they would. He said that such mini-videos would be great “so
long as you keep it simple and don’t end up with 20 zillions of mini videos that would eventually become confusing.” His advice: “Keep it simple.” After this conversation, I pointed out the “How do I...” section on the Libraries homepage, and he admitted that he had never really noticed it before.

The interview with Bernardo began with his being very confident in his familiarity with the website and ended with his being more frustrated. As he said, he knew that the information that he needed was here, but he was continually confounded when he did not immediately get the results that he expected. The most important thing for Bernardo seems to have been when he received individual one-on-one interaction with the librarian for his subject area. The lessons he learned from that person were ones that helped Bernardo a lot—but those lessons did not come until he was three years into his degree.

**Wrapping Up**

Several of the students, such as Ronald and Stephen, said that the system that they currently used is good enough. So why change? It seems that the only way to get these students to expand their horizons so far as their research strategies goes is to force them outside of the box. We have been doing that so far, but then they just go right to Google. We need to try to figure out a way that we can entice them to go exploring. But how? They know that there is good data hiding in our website. But if Google is working well enough for them, why do they need to change?

In my interview with Leslie, I began to realize that she was not afraid to read. She was afraid of wasting her time! She did not want to spend her time reading words that did not matter to her work. She needed some reassurance that the material on the page—or the computer screen—was the precise material that she could use, and then she would dive in.

Over the course of the interviews, I began to notice that there was a growth trajectory that undergraduates and graduate students seemed to proceed through as they matured as researchers. First, they used books to find most of their information. When they started to look for articles, many turned to Google and Wikipedia for their sources. At this stage, some students, like those in economics, rely on their professors to provide them
with the articles that they need. Students in history and English are encouraged to conduct their own research. Some are introduced to core indexes such as LION, JSTOR, and Academic Search Premier.

At this stage, it would be ideal for them to become familiar with and to start using citation management systems such as RefWorks and EndNote, but most are not getting the training necessary for them to use these tools effectively. This could also be said of Delicious, which can be a powerful organizational tool for students. Perhaps the new Rutgers University Libraries Web interface could help students to learn about these other tools and resources without seeming to be endorsing them.

The trick here would be to know exactly when it was that students were ready for—and needed—this information. Though few of them articulated this, I often had the impression that what the students desired was one-on-one interaction with a research mentor or guide. Take Paul, for instance. While my first desire was to show him how to use RefWorks to help him keep his information organized, I realized that he was not yet ready for it because he was not yet fully utilizing journal articles. What he needs is someone to assess where he is in the research/learning continuum and to figure out how to get him to the next level. If I had an hour with Paul, I would try to introduce him to the concept of the peer-reviewed journal and tell him about TOC alerts. I would show him how to let one good reference lead you to others through the articles it cited, and I’d begin to suggest that he could even do better at keeping track of information.

Recall that Greg began using the Website as many students did—through looking for books via IRIS. From there he increasingly began to look for journal articles, and this is where he ran into trouble. If we could somehow ease the transition from IRIS to the other databases, that could help a lot. We need to keep in mind that once students learn one tool, they keep going back to it, even when it is no longer the best tool for them to use, as when Lisa said that she used IRIS to search for articles even though IRIS is not an article research tool.

At the close of the interview, Paul expressed his appreciation for the University librarians. “They are very helpful. Rather than just finding a book or [helping you to find] articles online, they’re very receptive, very cordial to the students. Even though sometimes
you look for a book and, you know, it’s right there only you can’t seem to find it, and you know they just come downstairs within two seconds and find the book. And you feel like wow! You know you feel like you’re in trouble with them, but they always have a smile on their face when they’re helping you. So you know if somebody you know always you know frowns and you’re scared to approach them, but they’re very approachable. And they’re always helpful.”

It is interesting that Jeffrey relied on a fellow graduate student first to tell him about JSTOR, and then it was a librarian who told him how to use interlibrary loan. Though there are instructions on the website that could help students like Jeffrey to navigate these tools and resources, they often just are not taking the time to read the instructions. I noticed that to compensate for users’ confusion, the Libraries Web designers compensate by adding more text. This might be the exact wrong solution: repeatedly, the students I have spoken to have said that there is “too much information” on the website as it is and that simpler is better.
Appendix 1: Interview Schedule

Part 1: General Research Questions

Begin by asking about the student’s recent research projects, academic and career goals.

What are the primary online resources you use to conduct research for your papers and assignments? Where do you go first?

Please think of a topic that you might research and demonstrate how you would go about conducting an online search for materials on that subject.

Do you regularly use the following web-based services for your research? How often?

- RU Libraries website
- MyRutgers?
- Google
- Google Scholar
- Wikipedia
- Other library website?
- Any other web resources you would add?

When was the last time you contacted a Rutgers librarian? What was your question? How did you contact them? What did you learn?

Do you use Wikipedia? Do you cite it in your papers? If you teach, do you allow students to cite it?

What percentage of your research involves books vs. journal articles?

Once you find a resource that you might use in your work, how do you keep track of it?

Do you print out most of the PDFs/articles you find, or do you read them on the computer screen?

Do you normally mark on or highlight your text?

Where are you most comfortable working?
Part 2: Collaboration Questions

When you first start working on an idea for a project, do you discuss it with other people? If so, whom? (at what stage of the development process?)

Have you ever collaborated on a research project with other students from within Rutgers?

Have you ever collaborated with people from institutions or agencies apart from Rutgers?

Have you ever shared references or other resources with other students? If so, how did you do so?

Would you like to see something on the Libraries’ website that would encourage or facilitate collaboration?

Part 3: Publishing Questions

Do you use or contribute to a blog?

How do you feel about blogs? How do you feel about people who journal or blog publicly?

Part 4 (for graduate students):

Have you ever published a paper in an academic journal?

Do you feel that some of the papers you have written are publishable?

If so, are you considering submitting your work to a peer-reviewed journal?

And how would you identify and select a possible outlet for publication?

Do you plan on publishing a version of your dissertation after its completion?

Do you belong to any professional organization? If so, which ones? Why/why not?

Do you subscribe to any academic journals outside of those organizations? Why/why not?

Part 5: Close

Is there anything you’d like to suggest that the Rutgers librarians can do to improve their website?
Is there anything you’d like to suggest that the Rutgers librarians can do to improve their services overall?

Would you like to receive information or updates from the Rutgers Librarians? And what kind of information would you want?

What if you wanted to communicate with them? What would be the best way?

Would you want to receive that information through Facebook?

Is there anything else you would like to tell me or that I forgot to ask?