Utah State University Library Instruction Program
Annual Report for 2005-2006

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I. Introduction

In 2005-2006, the Library Instruction Program continued to expand its offerings to students and faculty and integrated information literacy instruction at a much greater level into the Utah State University (USU) curriculum. We also expanded our assessment efforts, so that we now have a much better picture of student learning and programmatic effectiveness. Librarians taught a record 853 instruction sessions, most of these in the context of our revised English 1010 curriculum. These sessions represented 17,193 contact hours with students. Instruction was provided for courses representing 40 departments in all of USU's colleges. The efforts of 10 Reference Services Department librarians were supplemented by assistance from three Library Peer Mentors and 16 staff members from across the library.

II. English Composition Instruction

English 1010 and 2010 continue to be the primary focus of library instruction at USU. In summer of 2005, we revised the English 1010 library instruction curriculum, creating a problem-based learning (PBL) assignment focused on the topic of education, the Save Our Schools Project (SOS). For lesson plans, see http://library.usu.edu/instruct/eng1010/index.php#archive. Students identified problems with the current educational system, developed research questions to further investigate those problems and develop potential solutions, and then worked in groups to find information. The assignment culminated with group presentations on research findings and proposed solutions. Librarians participated in the entire project by co-facilitating class discussions, creating lists of recommended resources, demonstrating how to retrieve articles in the library, and providing one-on-one coaching throughout the research process.

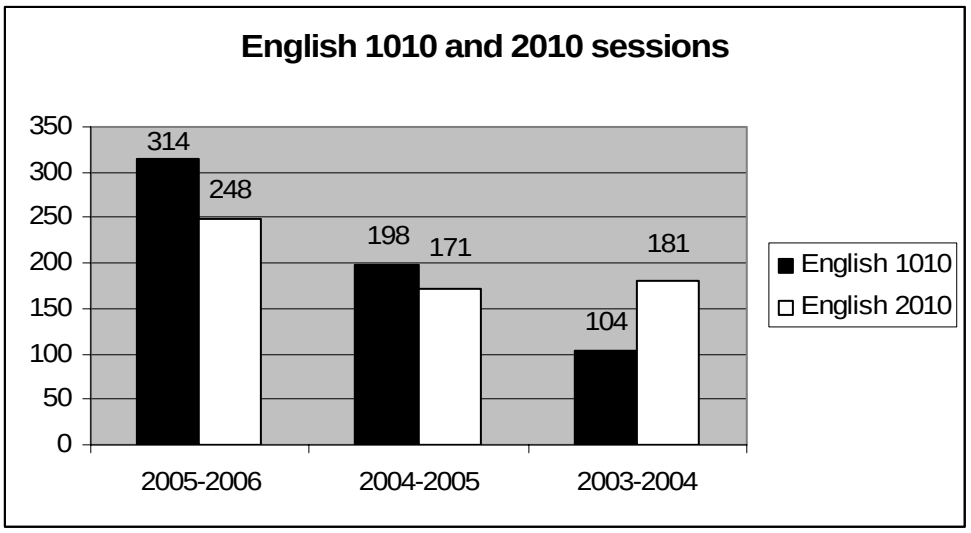

Figure 1: English 1010 and 2010 library sessions

The revised assignment was implemented in nearly all 50 sections of English 1010 offered in Fall 2005. Ninety-three percent of English 1010 instructors participated in library instruction during the Fall term. Only two instructors failed to participate in library instruction at all, and all of the participating courses did at least a portion of the SOS assignment. In Spring 2006, participation in library instruction dropped to 85%, and one instructor dropped the SOS assignment. Most of the remaining instructors increased their library visits, however. In Fall, the average number of library sessions was 3.48; in Spring, the average number was 4.1. Most of this increase was for additional hands-on research days for the SOS assignment. The increased number of sessions and persistence of the SOS assignment was a dramatic improvement over the previous year's English 1010 library sessions, in which a significant number of English instructors dropped the library curriculum in the middle of the semester because they had difficulty covering the entire English 1010 curriculum.

Assessment of the new curriculum suggests that students learned to ask more specific research questions, used the library resources rather than the World Wide Web alone, and became much more comfortable asking for help from librarians. Assessment results are reported separately below.

As in 2004-2005, there were some practical difficulties in implementing a new, much more ambitious curriculum. The main problem was the move to a new library building in the middle of the Save Our Schools project, leading to confusion in scheduling and a lack of good classroom space. Students also required much more time in the library during class than originally anticipated. In Spring 2006, many instructors addressed this need by scheduling multiple (3-5) hands-on research days in the library. This placed a great strain on the 8 librarians responsible for nearly 50 sections of the course. There were difficulties scheduling library classrooms to meet the demand as well. Feedback from students and faculty, as well as student learning assessments, however, suggest that the intensive, hands-on approach is an effective way to introduce English 1010 students to the academic research process. Easing resource issues, in terms of librarians and classrooms, will be a major goal for the 2006-2007 academic year.

The Library Instruction Program also saw an increased level of participation from English 2010 instructors. While keeping the "menu of options" approach developed in 2004, we provided a new tool for instructors by creating information literacy lessons for the commonly adopted textbooks in English 2010 (http://library.usu.edu/instruct/eng2010/curious_writer.php). Instructors were able to select from a range of learning activities geared toward the assignments and approaches from their actual textbooks. We also continued to offer additional Problem-Based Learning activities (http://library.usu.edu/instruct/eng2010/pbl.php). Pam Martin also developed several creative lesson plans related to topic selection and MLA citation style. In Fall 2005, 92.6% of English 2010 instructors participated in library instruction, averaging two sessions per section. In Spring, all of the instructors participated, averaging 3.32 sessions. Feedback from the English Department suggests that English 2010 instructors are pleased with the wide range of options available, including the Problem-Based Learning lessons and the textbook integration approach. Brock Dethier, the Coordinator of Advanced Composition, wrote to the English 2010 instructors about how "extraordinarily lucky [English instructors] are to have such energetic, generous, proactive librarians to work with." Again, student assessments

(reported below) suggest that students are attaining proficiency in developing focused research questions and using a variety of sources in their writing.

III. Other Course-Related Instruction

Librarians taught 160 sessions for subject-specific (e.g. not English 1010 or 2010, Connections, or PSYC 1730) courses. Most of these are one-shot classes focused on using discipline-specific search tools. Librarians continue to revise these one-shot classes to include more active and problem-based learning components. Britt Fagerheim revised the MHR 2990 legal information lesson so that students work on a single scenario. During group presentations, students compare the information found on the Web and from subscription databases such as Business Source Premier. Carol Kochan and Wendy Holliday worked with Bonnie Pitblado's ANTH 4380 class for their debates on current controversies about the peopling of the Americas. After conducting a demonstration and providing one-on-one coaching, they served as judges for the debates, providing students with feedback on the quality of their research. Sandra Weingart continued her work with ASTE 3440, assisting this large class of students with research on recent technology developments. Flora Shrode helped create and teach a problem-based learning assignment for PUBH 4030, in which students investigated avian flu from a variety of health and public policy perspectives. Outreach led to the following departments bringing classes into the library for the first time in recent years: Biology, Geology, Honors, Rehabilitation Counseling, and Women and Gender Studies. The increase in the number of science classes is especially promising, as these classes have been under-represented for many years. See Section VII for complete lists of departments.

Librarians continue to participate in the Connections program. In 2005, we made a short presentation, along with Student Lab Services and Computer and Information Literacy exam, to 50 sections of Connections. While generally well-received, librarians and Connections faculty noted that a 15-minute presentation failed to do the library justice. An expanded presentation/tour is planned for Connections 2006.

Librarians also taught 50 library research sessions for PSYC 1730, a college success course. Content ranged from extensive database and catalog searching to question asking and finding background information from reference sources.

IV. Special Projects

Information Literacy Fellows

In Summer 2005, we piloted the Information Literacy Fellows Program. The program focused on curriculum development for English 1010 and 2010. Five English instructors (Julie Johns, Heather Robison, Anne Stark, Michael Ward, and Maria Walters) were selected as fellows and they assisted librarians in creating lesson plans and other teaching materials for English 1010 and 2010. The primary outcome of the program was a document entitled "Writing Information Literacy," which codified truly common learning goals for writing and information literacy. (See http://library.usu.edu/instruct/writing-infolit.pdf). This document continues to act as a touchstone for the integration of information literacy into the English composition curriculum. The lessons

created for both English 1010 and 2010 were implemented by a majority of the English instructors in 2005-2006. The success of the Fellows pilot program led to a further commitment of funding from the library for future years.

Instruction Classrooms

In October, we began teaching in the new library instruction classrooms. We held several informal training sessions to learn how to use the new classroom technology, including laptops, wireless keyboards, microphones, and multimedia technology. In summer, we held a training and brainstorming session so that we can use the Vision software to maximum advantage.

V. Web-Based Instruction and Tools

Throughout the year, we re-organized and supplemented our online instructional materials and resources. We created more course guides, designed to recommend library and free Web resources for particular class assignments. We also re-organized the instruction website in anticipation of the new library website launch in May 2006. Britt Fagerheim created a template so that librarians could easily transfer existing content and create new web pages for the general instruction site and for course guides. The year's web activities culminated in the launch of the new instruction website in May. One of the goals of the new site was to make it more streamlined for faculty members and for librarians. All of our existing handouts, exercises, and worksheets, for example, are now linked directly from the website instead of being available only on the library network drive.

Web traffic statistics show that more users, including faculty, librarians, and students, are accessing instruction-related resources via our website. Traffic to the instruction home page, for example, increased from 4,414 hits to 6,701. Peak activity was in February, with more than 1,000 hits to the instruction home page. This is likely the result of the intensive English 1010 assignment in that month. Traffic was also heavy during the same assignment in September and October, but the marked increase in February suggests that both students and English instructors turned to the instruction website in greater numbers during the second iteration of the SOS project.

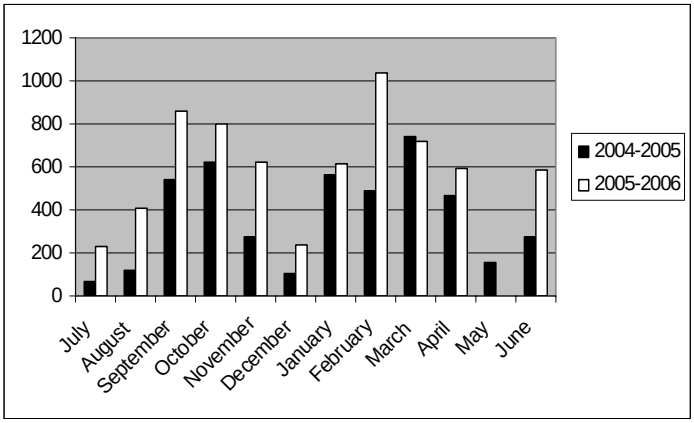

Figure 2: Instruction website hits

Traffic on the 1010 and 2010 home pages (links to lesson plans, learning goals, and assessment ideas) increased between fall and spring semesters, suggesting improved visibility and greater integration of the library into these courses. Similarly, there was a dramatic increase in hits on our lesson plans for these classes (peaking with 859 hits in February), suggesting that instructors now rely on the website to learn more about information literacy options for their classes. Course guides continue to be heavily used, especially in mid-semester. The Guide to Library Research Tutorial also received many hits. The most popular section is the Finding Articles module,

receiving at least a few hundred hits every month. The web statistics alone do not tell us whether students are finding this on their own or whether instructors and/or librarians are recommending these brief, practical tutorials. The Concept Mapping tutorial, especially the page of examples, was also heavily used throughout the year. This is likely due to the incorporation of a concept mapping lesson in several English 2010 classes. The high numbers also suggest that others outside of the USU community have discovered this resource as well. Unfortunately, the Organize My Research (OMR) tutorial is underutilized. The low numbers, especially when compared to the Guide to Library Research suggests that the more cognitive and critical thinking skills addressed in the OMR tutorial are less conducive to the online tutorial environment. One goal for the coming year is to assess the OMR tutorial and figure out ways to use it to supplement face-to-face teaching.

	Home Page	2010 home page	1010 home page	Course guides/ handouts	1010/ 2010 lessons	Organize My Research Tutorial	Guide to Library Research*	Concept Mapping Tutorial*
July	231	61	47	217	150	37	706	301
Aug	406	159	150	460	164	44	615	651
Sept	858	89	196	1,570	613	52	767	862
Oct	803	122	434	1,318	632	84	1,205	843
Nov	620	62	134	784	522	47	1,108	821
Dec	240	115	103	150	186	42	626	1,250
Jan	612	181	119	514	792	40	857	964
Feb	1,034	301	185	1,357	859	26	1,168	202
Mar	721	59	203	962	661	24	1,180	1,245
April	589	43	100	801	74	28	1,649	1,069
May	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
June	587	98	227	514	779	34	180	226
	6,701	1,290	1,898	8,647	5,432	458	10,061	8,434

Note: May statistics are not available because of the switch to a new server and website.
* Includes total hits on all modules of the tutorials.

Table 1: Instruction website hits

VI. Professional Development

Given the sheer amount of time we spent teaching, we spent less time on professional development activities this year. We held a semi-annual debriefing session at the end of the Fall semester to discuss what did and did not work with the revised English curriculum and to share other ideas about teaching. In spring, we met with English 2010 instructors to discuss different strategies for integrating information literacy into their courses. In June, Deleyne Wentz conducted a workshop on using the Vision software in the classrooms. Librarians also used the initial meeting with our Information Literacy Fellows to discuss teaching and learning more generally. The focus of this year's discussion was on epistemological beliefs (or beliefs about knowledge and learning) and their impact on student motivation and information literacy. Librarians also participated in a number of professional development activities at the ALA Midwinter Meeting and Annual Conference.

VII. Statistics

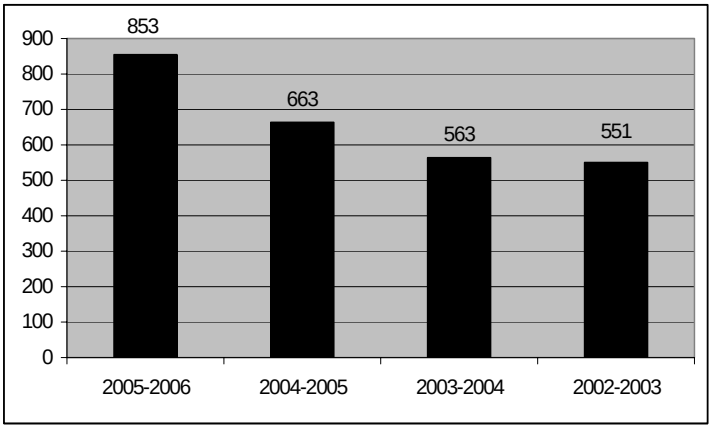

Figure 3: Total sessions taught

Our instruction statistics continue to provide evidence of a growing program. Our total session numbers increased by nearly 30%, reaching an all-time high of 853 sessions. It should be noted that some of these sessions include short visits by librarians to the classroom, to discuss research strategies or just get acquainted. Nevertheless, the increase in session numbers suggests that librarians are becoming more integrated into courses, using a strategy of shorter, more frequent visits, rather than the one-shot approach. These sessions accounted for 17,193 contact hours with students (each student in each session counted once). When taking into account repeat students (students who attended multiple sessions for a single class), this represents an estimate of 9,473 students reached. This does not account for students who were enrolled in more than one class that participated in library instruction (e.g. English 2010 and BIS 2550). If counting students reached by semester, approximately 3,800 students were reached during Fall and Spring terms.

Undergraduate courses continue to be the mainstay of the instruction program. Undergraduate courses represent 92% (787) of the total sessions taught. This represents 15,905 total student contact hours. Librarians taught 26 graduate level course, mainly workshops focused on advanced searching in discipline-specific databases. Librarians also taught 28 sessions for local school and community groups. Special Collections and Archives led most of these sessions, geared toward introducing local middle and high school students to primary sources.

When accounting for multiple sessions for a single course, librarians reached 421 individual courses over the course of the year. Nearly 40% of these (166) were English 1010 and 2010 courses. We also taught 12 sessions for English 1010 offered through concurrent enrollment in local high schools.

	English 1010	English 2010	PSYC 1730	Connections	Subject	Other
2005-2006	314	248	42	50	160	60
2004-2005	198	171	37	34	188	14
2003-2004	104	181	n/a	33	191	30

Table 2: Total sessions by type of course

The library instruction program reached all colleges and 38 departments. Excluding English 1010 and 2010, the College of Humanities, Arts and Social Sciences participated in the largest number of library sessions (49). The College of Business continues to be a major participant in library instruction (48 sessions), including at least one library session for core business courses, including BIS 2550 (Business Communication) and MHR 2990 (Business Law). The College of

Education followed with 30 sessions. See Table 3 for the individual departments with the heaviest library instruction participation.

Department	#
BIS	25
MHR	17
ENGL (except 1010 and 2010)	11
ELED	9
JCOM	9
BIO/PUBH	7
ASTE	6
HIST	6
PSY (not 1730)	6
ACCT	5
LAEP	5
POLS	5

Table 3: Sessions per department

Session content continues to focus on major library tools, such as the Online Catalog and databases. The large number of sessions focused on "other" represents our new focus on developing good research questions, brainstorming techniques, and concept mapping. As in 2004-2005, active learning and hands-on practice, including discussions, peer teaching, and student-led demonstrations continue to dominate our teaching strategies.

Content	
OPAC	**337**
Databases	**339**
Free Web	**213**
Other	**315**

Table 4: Session content

Class Format	
Hands-On/Active	**517**
Demonstration/lecture	**371**
Tours	**96**
Other	**28**

Table 5: Teaching strategies

Heavy teaching loads became an even greater issue this year, with the intensive English 1010 curriculum. Reference Services Department librarians, who do the bulk of the teaching, taught an average of 79 sessions this year, with a high of 130. Staff from other departments led or assisted with 192 sessions, making our commitment to face-to-face teaching in English 1010 and 2010 possible. We also kept estimates of preparation time and time spent assisting students one-on-one outside of class as a result of a library session. A conservative estimate of total preparation time was 530 hours for the year. The estimate of post-session consultation time was 200 hours. Reference Services Department librarians spent an average of 48 hours preparing for classes and 20 hours working with students outside of class time. These numbers are likely far short of the time that librarians actually spent doing these things, as several librarians did not keep track of this time consistently. Keeping a more accurate accounting of preparation and consultation time is a goal for the coming year, in order to make the teaching work that librarians contribute to USU more visible. Even by this conservative estimate, librarians contributed nearly 1,700 hours of teaching, preparation, and consultation time to Utah State University, or an average of 155

hours per reference librarian. Estimates of the time that writing instructors[1] spend in preparation, grading, and teaching time for an individual course range from 15-21 hours per week for a 15 week semester. If using the same averages, Utah State University librarians contributed teaching work equivalent to 5-7 sections of English composition.

VIII. Assessment

In October 2005, the Instruction Program finalized an assessment plan, which outlines goals and methods for assessing student learning and programmatic effectiveness. Several assessment activities were undertaken according to the plan. We combined both formative assessments, such as short one-minute papers and student reflections, with more summative assessments that measured student performance by examining their actual work. We also continued to evaluate the effectiveness of our teaching.

One-Minute Assessments

We conducted short, one-minute assessments at the end of a sample of English 1010 and 2010 sessions, as well as some subject-specific classes. We used two online, short essay assessments. The "One-Minute Paper" asked students the following questions:

- What is the most significant or meaningful thing you have learned during the session?
- What question(s) remain uppermost in your mind?

"What Will You Do Differently?" asked:

- What is one highlight you remember from this instruction session?
- When searching for information, what will you do differently, based on what you learned in the session?
- Any other comments or suggestions?

385 students completed these two assessments. 206 students from English 2010 completed one-minute assessments. The remaining 179 surveys were completed by students in various lower and upper division courses. See Table 6.

Course	#	Course	#
ACCT 3120	14	Chem 4990	13
ADVS 6800	5	ELED 3000	31
ASTE 5260	7	JCOM 4000	3
AWER 1200	17	JCOM 5320	9
BIOL 4750/6750	10	MHR 2990	70

Table 6: One-Minute Assessments by Course

[1] I use writing instructors as an example because most of our instruction occurred in writing classes and the individual consultation and preparation tasks are somewhat analogous. See Richard H. Haswell. (2005). "Average Time-on-Course of a Writing Teacher." http://comppile.tamucc.edu/compworkload.htm. Accessed July 18, 2006.

We analyzed the short essays by coding them for common themes. We also noted what type of instruction students received in each class to try to determine whether certain teaching strategies, content, and sequences seemed to be more effective than others. For the English 2010 courses, we defined the following types of instruction:

- One/Two Shots: Generally a library overview or tour, sometimes combined with a demonstration and hands-on search session.
- Problem-Based Learning (PBL): Two or three sessions dedicated to research plans, an introduction to the disciplines, and a quick search session related to addressing a problem or social issue.
- Extensive: Four or more sessions that include topic selection/brainstorming activities, developing research questions, a problem-based learning component, hands-on research days, and instruction in citing material.

For English 2010, regardless of the type of instruction, learning about the variety of sources available in the library was the most common response when students were asked to identify their learning highlight. 50% of the students in the extensive sequence and 43.5% of the students in the one/two shot model identified this as their most important learning from the library sessions. Only 15% of the students noted this from the PBL group, but these figures were likely swayed by an additional session on using Inspiration software for concept mapping. Many students (24.6%) identified concept mapping as their learning highlight for these classes.

In the "What Will You Do Differently Survey," most students (32 of 36) said they would actually use the library resources, especially the article databases, rather than only searching Google. This suggests that one major goal of our English 2010 instruction, introducing students to a rich range of information resources, is being met. This finding was confirmed in a separate assessment in another English 2010 course. Students were asked to write a self-assessment essay, noting what they had learned over the entire semester, not just in library instruction. Twelve of 19 students noted that learning about the availability of library resources, rather than just Google, was one of the most important lessons from the entire course. According to one student:

> Another skill that I have learned from this class is how to research using a variety of sources. Before taking this class, I would go to Google.com, type my topic in the search engine, and use whatever I could get. I am now able to use different databases, magazines, journals, books, and interviews. I have also learned that research can be used for anything from looking up song lyrics to looking up statistics in the census.

Other common themes that emerged from the English 2010 one-minute papers include:

- Learning better search techniques was noted by 27.5% of students in the PBL sequence, but only 11.6% of the one/two shots and 7.7% of the extensive series students. The PBL sequence likely gives more students hands-on and focused search practice, because the topic is pre-selected for them. It should be noted that no students identified search skills as a learning gap in any of the assessments.

- Several students noted that they learned about how librarians can help them (8.7% and 7.7% in the PBL and extensive groups, respectively). None of the students in the one/two shot classes mentioned librarians. This suggests that students are more likely to view librarians as a valuable resource when they are exposed to librarians more extensively and/or in relation to a more authentic research assignment, as in the PBL model.
- When students noted what they still wanted to know, the most common response (12 of 27 in all classes) was that they still did not know how to retrieve books and articles, either physically or electronically. Our instruction has focused more on introducing students to what is available in the library and question development. This response suggests that we need to focus some face-to-face time, web instruction, and/or handouts to this more mechanical library skill.
- Students identified more gaps in the PBL sequence than in the others. The gaps were quite varied, however. They included learning even more about specific library resources, the difference between scholarly and popular articles, how to select a database for their own research, search techniques, and how to narrow a topic. This suggests that students are learning about the importance of using a variety of resources, including scholarly material, and selecting the most appropriate tools for their own topic. They need additional help, however, in transferring their practice in the PBL scenario to their own topics.
- In a class that had only one library session (a general introduction/tour), 11 of 14 students said that they did not learn anything new. This suggests that students need much more extensive, integrated, and focused library instruction in English 2010.

For the subject-specific courses, the results of the assessment were somewhat similar. Nearly all of the classes were one-shots that included a demonstration of discipline-specific library resources. Most also had time for hands-on practice by the students. The most common theme (noted by 48% of the students) was that students learned about the variety of resources available to them. 23% of students said that they learned about a specific resource (such as SciFinder Scholar for Chemistry or Mergent for Accounting). 15% of students said that they learned better search techniques, such as how to use limits, more specific keywords, and subject headings to narrow a search. Only five students mentioned learning about getting help from a librarian. The short contact time with these one-shot classes might contribute to less personal engagement with a librarian. As with the English 2010 class, exposure to library resources led many students (45 of 179) to reflect that they would use the library databases rather than just searching Google. Interestingly, given the greater focus on demonstration and search mechanics, a large number of students (34) responded that they would use more refined search techniques in the future. In addition, students seem to have a better grasp of how to retrieve physical or electronic items via the library than the English 2010 students. Only two students said they wanted to learn more about how to locate materials in the library, and three students said that they would specifically use Article Linker to locate materials. Only ten students said that they learned nothing new in the library sessions.

These short surveys were also confirmed informally in several classes. In two English literature courses, for example, students said that learning about specific databases like the MLA Bibliography and WorldCat was new and useful. In one class, students learned about the special materials on the Beat Generation housed in the Art Book Room of the library.

The subject-specific one-shots seem to be meeting students' needs generally. Introducing students to the specific library tools in their discipline is the noteworthy theme that runs throughout these assessments. At this level, students also seem to be more receptive to learning advanced search techniques. The one major gap that might need to be addressed is the willingness to approach a librarian for help. In the coming year, we might track research consultations that occur after class to see whether student behavior matches what they write about in the one-minute assessments.

English 1010 Student Work[2]

We analyzed two kinds of student work for English 1010. First, we analyzed 26 research plans from 6 classes for the SOS project. It should be noted that this represents 26 groups, rather than 26 individuals. We rated them according to the rubric in Appendix A. All of them had enough information to score them for Question 2 (What do you need to know in order to take a position on the issue?). Only 11 had enough detail about possible information sources to score them for Question 3 (For each of your research questions, describe what kind of information source might provide the answer to that question and how you would find that type of information source.) We then analyzed 55 bibliographies (some individual and some group work) from seven different classes. We scored these according to the rubric in Appendix B, specifically areas 2 and 3.

Two librarians scored each plan and bibliography. If scores were one point apart, we averaged the scores. If they were more than one point apart, we reached a final score by consensus. In general, scoring was very similar.

For the research plans, our goals for student performance were not terribly high. Students created these plans after a single session of a librarian modeling the process of developing good research questions. This takes some practice. Surprisingly, the mean score was 2 (which represented a "good" rating). Only six students received a 1 or 1.5, representing a need for improvement. 13 students received a 2 and 7 students received a 2.5. No students performed at the excellent level, but this would not be expected until the completion of English 2010.

For the 11 research plans that we scored for the ability to identify a wide range of appropriate information sources, the average score was 1.59. This was what we expected, given the fact that students had virtually no experience using library resources at this point.

For the bibliographies, we hoped that there would be some improvement from the research plans in the variety of sources score. The average of 1.54, however, was virtually the same. This could reflect the small sample size of the research plans, however. Most students (35 of 55) scored in the 1-1.5 point range, suggesting that they still need to improve. 20 students scored in the 2-2.5 range, and no one received an excellent rating. This suggests that a single assignment is not enough to teach students about using a variety of information sources. Again, this should not be too surprising. Unfortunately, we did not receive copies of the students Cultural Inquiry papers (their other major research assignment) to see if students improved after their second round of library instruction. Obtaining copies of these papers is a goal for next year's assessment plan.

[2] Thanks to Sandra Weingart for assisting with the scoring of English 1010 work.

In terms of evaluating resources (area 3 of the rubric in Appendix B), students still scored in the "needs improvement" range, with an average of 1.62. A slight majority of students (51%) scored between 1 and 1.5, but a large percentage of students (44%) scored in the good range. This was a surprise because source evaluation was not an explicit part of library instruction for the SOS project. Rather, the focus was on finding resources that specifically addressed student's research questions or information needs.

English 1010 Learning Circles

In fall semester, we held two informal focus groups, or learning circles, to talk with students about the SOS Project and what they learned. Library staff who were not involved in the creation or teaching of the lessons facilitated the discussions and took notes, so that students could speak freely. The most common theme that ran through both learning circles was that students learned how useful librarians could be in guiding them through the research process. Many expressed a personal connection to their librarian, and planned to seek help for future assignments. Given that learning the complexities of library research cannot be taught in a single semester, a willingness to ask a librarian has been one of the primary learning goals of the English 1010 curriculum. The learning circle suggests that this goal was met. Other students commented that they learned more about research as a process, and that they actually used library resources rather than only the World Wide Web. The most common learning gap was in more practical skills, such as how to locate an article or book in the library. In the revision of the curriculum for spring semester, we included a library guide in the English 1010 student handbook that outlined such procedures, and we made sure that librarians did at least one short demonstration of how to search a database and use Article Linker to find an article.

English 2010 Research Plan Pre-Post Tests[3]

Given the new emphasis on asking specific research questions and creating research plans, we assessed a sample of English 2010 students using a pre-post test model. Students were asked to create a research plan on a given topic that addressed the following questions:

1. What do you already know about this issue?
2. What do you need to know in order to take a position on the issue? List at least 3 research questions that you will need to explore.
3. For each of your research questions, describe what kind of information source might provide the answer to that question and how you would find that type of information source.

Students completed a research plan at the beginning of the semester, before library instruction, and one later in the semester, after library instruction. The plans were scored according to a rubric that we developed (See Appendix A). Student work was scored as needing improvement, good, or excellent. Two librarians scored each plan and then their scores were compared. If scores were within 1 point, we averaged them. If scores were significantly different, final scores were reached by agreement. We assessed eight English 2010 sections, representing four English

[3] Thanks to Britt Fagerheim for coordinating the scoring of the pre- and post-tests and compiling the results.

instructor/librarian teams. 121 students completed the pre-test, 108 students completed the post-test, and 100 students complete both the pre- and post-tests.

The average score for all 121 pre-tests was 10.32. The post-test average was 11.8. The standard deviation, however, was 2 and 2.5 points for the pre- and post-tests, respectively. So this result is likely not statistically significant. While most students (92%-95%) scored in the good or excellent range on both the pre-test and the post-test, 31 students (or nearly one-third) moved from the good to excellent category. See Table 7.

Category	Pre-test	Post-test
Needs improvement (score=7 or less)	5	8
Good (score=7.5-13)	83	49
Excellent(score greater than 13)	12	43
n=100		

Table 7: Number of students per category, overall score

Using a different measure, the number of students who improved, 65 of 100 students scored better on the post-test, 6 remained the same, and 29 scores decreased. When looking at this measure by the type of instruction, there is a noticeable difference in the percentage of students who improved. For the PBL and extensive sessions, 65-75% of students showed improvement. For the one-shot session, only 36% showed improvement. The small number of students (11) in the one-shot sample, however, means that the difference in performance might not be significant. When read with the one-minute paper assessments, however, there does seem to be a trend showing that one-shot instruction is less effective than multiple and more integrated sessions.

In terms of individual skills, for Question 1, a reflection of what students already know about an issue, there was actually a decline in performance, with more students scoring in the needs improvement category and fewer students scoring in the excellent category. This suggests that this question cannot be scored very accurately, given that the depth of the response is likely more a result of student motivation than anything else. This question will be dropped for scoring purposes in future assessments. For Question 2 on developing specific research questions, there was an increase in the number of students who moved from the good to excellent category. The most dramatic improvement in scores was for Question 3, which asked students to identify information sources that would answer their questions listed in #2. Nearly one-third of students (30) needed improvement in this area, according to the pre-test. Only 11 scored as needing improvement on the post-test. Similarly, only 21 students scored in the excellent category in the pre-test, but 57 scored as excellent in the post-test. See Table 8 for a complete list of scores per question.

Category	Question 1 Pre-test	Question 1 Post-test	Question 2 Pre-test	Question 2 Post-test	Question 3 Pre-test	Question 3 Post-test
Needs improvement	13	22	3	6	30	11
Good	39	48	63	39	49	32
Excellent	48	30	34	55	21	57

Table 8: Number of students per category and question

The research plan assessment suggests that students are learning to identify more specific library and other information sources at the end of English 2010. All of the students in this assessment came to the library at least three times. The most effective lesson sequence seemed to be the Problem-Based Learning lessons. In the one class that completed this lesson, average scores improved from 8.38 on the pre-test to 9.58 on the post-test. In other classes, the scores remained relatively constant.

English 2010 Bibliographies

We conducted two different analyses of student bibliographies. For two classes (but with the same instructor), Britt Fagerheim conducted a citation analysis to see what kinds of sources students cited. Students completed a concept mapping and peer-to-peer searching session, in which students explore different kinds of library search tools and then demonstrate them to their class. A total of 39 students cited 358 sources for their final research paper. Most students cited articles (42.2%), with websites following closely behind (35.2%). Books were a distant third, with 12%.

Type	Number	Percentage
article	151	42.2%
website	126	35.2%
book	43	12.0%
interview	24	6.7%
unknown	9	2.5%
government document	3	0.8%
presentation	1	0.3%
dissertation	1	0.3%

Table 9: Types of sources

Of the articles cited, slightly more were scholarly (63) than popular (60). Students cited .com, .gov, and .org websites in about equal numbers. Only 11 of the websites were from the .edu domain. The fact that many students are citing scholarly articles is a positive sign that students are learning the difference between scholarly and popular publications, and that they are seeking out these resources for their final papers.

We also scored 26 bibliographies from two additional English classes. The same instructor and librarian taught both classes. The assignment was to complete an annotated bibliography for three sources related to the Problem-Based Learning exercise asking students to take a stand on whether a new Wal-Mart should be built on the south side of Logan. The bibliographies were scored according to the Annotated Bibliography Scoring Rubric we developed (see Appendix B). All 26 students scored in the good (7) and excellent range (19). While the bibliographies provide a small sample, they do suggest that students are citing appropriate and scholarly resources. The high scores on the annotated bibliographies, along with the results from the pre-post-tests, suggests that the Problem-Based Learning exercise is an effective strategy for teaching students about the wide range of resources available.

Value-Added Assessment

As in 2004-2005, we conducted a second value-added assessment in conjunction with the English Department. During the fall term, students completed the same prompted essay at the beginning of English 1010 and the end of English 2010. We conducted a citation analysis to see whether students were citing outside sources and what types of sources were most common. Full reports of the assessment can be found at http://library.usu.edu/instruct/english-assess-IL-2006.pdf and http://aaa.main.usu.edu/Assessment/pdf/Value%20AddedEnglish-2006.pdf. In sum, English 2010 students (36%) were more likely to cite outside sources than English 1010 students (16%). The number of English students who cited sources dropped from the previous year. This is likely a result of the artificial nature of the assessment, especially when compared to our citation analysis of an actual research paper, in which students cited high quality scholarly and other library resources. It is interesting to note, however, that the percentage of entering English 1010 students cited at the exact same rate (16%) as the previous year. This is likely a good baseline figure for entering USU freshmen, suggesting that few of them cite outside sources as a matter of habit.

Programmatic Assessment: General Education Syllabi Audit

In Spring, Pam Martin and Wendy Holliday completed an analysis of general education syllabi to see whether and how information literacy was integrated into these courses. The development of information literacy skills, defined as "an understanding of the nature, organization, and methods of access and evaluation of both electronic and traditional resources in the subject area," is a requirement for integrated breadth courses. Information literacy is also implicit in the requirements for depth courses, including critical thinking and writing skills. We analyzed 192 syllabi from all areas of the general education curriculum.

We found that fewer than half of the total syllabi analyzed had any information literacy assignments (89 or 46%). Science courses were especially lacking in information literacy components. Large class size likely accounts for some of this, as research papers, the most common information literacy assignment, are difficult to grade in large courses.

Only 20 syllabi with IL assignments mentioned the library in any capacity. Furthermore, very few general education courses include a formal library instruction component. Only 14 of the courses analyzed brought classes to the library for instruction, between 2003 and 2005. The complete report can be found at http://library.usu.edu/instruct/gened-il-audit.pdf.

As a result of this programmatic assessment, we will be working with the General Education Subcommittee to investigate ways to integrate information literacy instruction into the general education requirements more effectively.

IX. Goals

The USU Library Instruction Program made great strides, especially in English 1010 and 2010 during 2005-2006. While only a partial picture, the dramatic increase in the number of class sessions shows that librarians are becoming an integral part of teaching and learning at USU.

Similarly, most of our student assessments suggest that students are learning to use a wider range of information sources rather than simply searching the web. In some cases, they are also beginning to learn that research is an iterative process of inquiry that requires critical thinking and questioning skills. Finally, many students noted that they are more likely to use the library and ask a librarian for help as the result of library instruction.

Nevertheless, much work remains to be done, especially in terms of assessment and better integration of the library into the curriculum beyond English 1010 and 2010. The following are programmatic goals for the 2006-2007 year.

- Conduct longitudinal assessment of English 1010 and 2010 to see whether students transfer what they learn in these two classes to their upper-division classes.
- Work with the General Education Subcommittee to assess the information literacy requirement in general education sources and develop a strategy to better integrate library instruction into courses beyond English 1010 and 2010.
- Expand on professional development opportunities for teaching librarians, so they can improve teaching, instructional design, and assessment skills. Librarians also need more time to simply reflect and re-charge after intense teaching periods.
- Explore partnerships with teaching faculty, other library staff, and university administration to address to heavy teaching load of Reference Services Department librarians.

While we have achieved great success in terms of curricular integration, faculty/librarian teaching partnerships, and student learning, these gains might not be sustainable because of their heavy reliance on face-to-face teaching and a small staff of librarians. We believe that our "high-touch" approach is the most effective way to engage students and contribute to their development of critical thinking and information literacy skills. If we are to continue this approach, we must begin a conversation about sustainability in the coming years.

Appendix A
English 1010 and 2010 Research Plan Assessment: Rubric for Scoring

Students were asked to create a research plan on a given topic that addressed the following questions:

	Excellent = 3	**Good = 2**	**Needs improvement = 1**
1. What do you already know about this issue?	Clearly identifies several specific, pertinent and constituent issues, facts, or ideas related to the question/topic. Can reflect both general knowledge of the topic, as well as personal experience.	Identifies only one or two issues, facts, or ideas related to the question topic.	Does not address any issues, ideas, facts, or only ventures a personal opinion about the topic.
2. What do you need to know in order to take a position on the issue? List at least 3 research questions that you will need to explore.	Lists 3 or more specific research questions. Questions specifically address a single issue or idea related to the topic, rather than trying to address the topic as a single question. Questions are focused on multiple aspects (e.g. disciplinary point of view, population-specific, etc.) of the larger question rather than on a single aspect.	Identifies only 2-3 research questions. Questions are more general and try to address the problem as a whole. Or questions tend to focus on only one aspect of the problem.	Identifies fewer than 3 questions and questions are very general.
3. For each of your research questions, describe what kind of information source might provide the answer to that question and how you would find that type of information source.	Identifies an appropriate source for all of the research questions. Identifies more than one type of source to answer different kinds of questions. Describes appropriate research tools or strategies for finding each type of information source.	Identifies an appropriate source and research tool/strategy for only 1-2 questions.	Does not identify an appropriate source or research/tool for any research question.

The points for Questions 2 and 3 should be doubled. The maximum total points is 15.

Appendix B: Annotated Bibliography or Double-Entry Journal Scoring Rubric

1. Define Information Needs

Students will define their information needs in order to anticipate what they and their audience needs to know and to focus, shape, and organize their ideas and writing.			
	Excellent =3	**Good/Adequate =2**	**Needs Work =1**
1a. Ask specific questions about the topic of research.	Includes specific research questions, each addressing a single issue or idea related to the topic.	Includes at least two research questions, although they are fairly general and try to address the problem as a whole.	Includes only one or two research questions, which are very general and look at only the surface level of the issue.
1b. Broaden, narrow, and deepen research questions based upon the information found throughout the research process. *This requires instructor and librarian having access to initial research plan, journal, or other assignment outlining research questions.*	Research questions show marked change and become broader, narrower, or deeper from initial research plan to final paper. Questions are focused on multiple aspects (e.g. disciplinary point of view, population-specific, etc.) of the larger question.	Research questions change only slightly from initial research plan to final paper. Questions focus on only two aspects of the issue or topic.	Research questions do not change from initial research plan to final paper. Questions focus on only one aspect of the issue or topic.

2. Students will use a variety of sources

Students will use a variety of sources to explore a topic in order to produce documented material directed to a specific audience.			
	Excellent =3	**Good/Adequate =2**	**Needs Work =1**
2a. Use a variety of sources to explore a topic.	Sources from several types of sources.	Sources from only one or two types of information sources.	Sources from the same format or type of information regardless of need.
2b. Identify some of the types of evidence and writing preferred in different disciplines.	Sources drawn from several different disciplines.	Sources are drawn from only two different disciplines.	Sources are drawn from just one discipline.
2c. Identify the value of different types of information sources for various purposes.	Annotations include explicit reflection on how different sources are useful for their purpose (e.g. provide background information; support a facet of argument; make an emotional appeal, etc). Includes explanation of why some sources are not useful.	Annotations include explicit reflection on how different sources are useful for their purpose. Does not include reflection on sources that are not useful.	Does not include reflection on how sources are or are not useful.

3. Evaluate Information

Students will evaluate information for its value, relevance, and accuracy in order to assess whether the information they find is credible and useful for their purpose.			
	Excellent =3	**Good/Adequate =2**	**Needs Work =1**
3a. Students will evaluate information for value and accuracy	All sources from peer-reviewed sources or authoritative websites.	Some sources from peer-reviewed sources or authoritative sites, and some sources from out-of-date and/or biased sources.	Most sources from out of date and/or biased sources, few peer-reviewed sources.
3b. Sources are within time frame appropriate to topic.	All sources published in appropriate time frame.	Most sources published in appropriate time frame.	Few sources published in appropriate time frame.
3c. Selecting information that provides evidence for the topic.	All sources clearly related to topic.	Most sources clearly related to topic.	Many sources unrelated to topic or relevance is unclear.
3d. Identify an author's purpose.	Identifies and/or acknowledges all authors' credentials and acknowledges the purpose or bias of each source.	Identifies and/or acknowledges some authors' credentials and acknowledges the purpose or bias of some sources.	Does not identify or acknowledge authors' credentials or acknowledge the purpose or bias of sources.
3e. Compares information found in different information sources to assess accuracy and validity.	Identifies conflicting information and resolves the conflict with support from an additional source.	Identifies conflicting information but does not resolve the conflict with support from an additional source.	Does not identify conflicting information.
3f. Determines whether information satisfies the research or other information need and revises search strategy, if necessary.	Identifies gaps in information and proposes possible information sources to fill these gaps. Some bibliographies might also include the information sources that addressed initial gaps.	Identifies gaps in information but does not propose how to find additional information or include additional information sources in a final bibliography or journal.	Does not identify any gaps in information.
Some criteria borrowed from Emmons and Martin - Engaging Conversation: Evaluating the Contribution of Library Research to the Quality of Student Research.			

5. Document sources

Students will document their sources in order to acknowledge their intellectual debts and demonstrate their understanding of research ethics.			
	Excellent =3	**Good/Adequate =2**	**Needs Work =1**
5a. Sources are cited correctly in bibliography.	All references in specified format with virtually no errors in format.	References are identified, with errors in format.	Insufficient or incorrect information, with frequent errors in format.