PRE-COLLEGE INFORMATION LITERACY RESEARCH (PILR), 2009-2012

A project of the Washington State Community and Technical College Libraries
Library and Media Directors' Council (LMDC)[*]

Funding provided by the Washington State Library through an LSTA grant.

EXECUTIVE SUMMARY

From 2009 to 2012, library and discipline faculty from Washington State Community and Technical Colleges participated in a grant-funded project to document the impacts of library instruction on basic skills students. Over three years, the project engaged 44 library and discipline faculty teams to design, implement, and assess information literacy assignments in ABE, ESL, and developmental education classes. Each team was free to design instruction appropriate to its needs, but assignments were required to address a common set of assessable student learning outcomes and use a common rubric. Over at least three quarters each, teams collected and reported data on student achievement of information literacy outcomes. The resulting data was compared with statewide data for similar students. The findings suggest that participation in the PILR project resulted in considerably greater progress and achievement as measured by student achievement points. Discipline faculty also reported that the assessment and improvement process in partnership with library faculty benefitted their teaching and their students.

INTRODUCTION

Pre-college Information Literacy Research (PILR) was a major component of a four-year Library Services and Technology (LSTA) grant to Washington State's Community and Technical College Libraries from 2008-2012. Provided through the Washington State Library, *Library as Instructional Leader: Transforming Curriculum and Pedagogy with Information Literacy,* included as one of its goals "to conduct and design best practices that determine the library and the library faculty's contributions to Basic Skills student achievement." On behalf of LMDC, the statewide council of library directors and deans, Seattle Central Community College Library coordinated the grant, including PILR, the activity designed to pursue this goal.

The conception of PILR was in response to the state's Student Achievement Initiative (SAI), created by the Washington State Board for Community and Technical Colleges (SBCTC) in 2008. This initiative identified and tracked key academic benchmarks that students must meet to successfully complete degrees and certificates. Among these measures was "building towards college-level skills.[1] The four-year LSTA grant provided LMDC with the opportunity to conduct a multi-year project demonstrating whether and how information literacy (IL) instruction could contribute to these measures for pre-college student populations. If successful, the project would provide evidence of the library's contributions to student success as well as models for integrating information literacy into instruction with meaningful impacts on student achievement, starting with the pre-college population.

The individual libraries of the 34 Washington State Community and Technical Colleges (CTCs) have a long history of coordinating and collaborating on strategic, structural, and professional development initiatives. LMDC meets regularly and library faculty organize annual professional development conferences through their organization, College Library and Media Specialists (CLAMS). When this project began, the CTC libraries had just completed a successful five-year LSTA grant, so library faculty were well prepared to engage in this collaborative project.

PROJECT GENESIS AND DESCRIPTION

Initially, a research team of library administrators, librarians, and discipline faculty gathered for a two-day meeting to envision the project. This team brainstormed the goals, data, and other features of the project. They identified outcomes, strategies, and formative assessment as key components of the project. They also considered training requirements to prepare for the project and research design that emphasized common outcomes while respecting academic freedom and individual instructional needs. The team explored questions related to information literacy that covered impact, support, responsibility, scaffolding, and faculty development.

With these ideas in mind, a taskforce of librarians, library deans, and an institutional researcher met to work out the details with help from an educational consultant who provided guidance for research design. This work resulted in PILR, which sought to assess the impacts of information literacy by researching whether and how "information literacy instruction contributes to overall learning and transition for pre-college students."[2]

Two phases of activity were identified. Phase 1 sought to develop and/or identify methods for integrating information literacy into precollege programs. Phase 2 sought to collect evidence to support the hypothesis that information literacy instruction makes a difference in overall learning and transition for precollege students. The following assumptions about information literacy guided the project design:

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[1] Student Achievement Initiative http://www.sbctc.ctc.edu/college/e_studentachievement.aspx
[2] Pre-college Information Literacy Research http://goo.gl/bZ4gE

- Information literacy is an accepted student learning outcome
- The library can make a contribution to achieving information literacy
- Achievement of information literacy needs to start in developmental education (precollege programs)
- Collaborative efforts by the library and developmental education programs is a viable way to achieve information literacy

The research agenda identified the following data sources for the project:

Outcomes	Research Focus	Methods
Student Learning Outcomes	Measure of information literacy outcomes (as appropriate) for each assignment	Use provided appropriate-level rubric to assess integrative IL assignment. Submit data electronically no later than 10 days following the end of the quarter.
Student Achievement Points Earned	The achievement points earned by students	Student Achievement Database analysis conducted by SBCTC; anticipate having a comparison group.
Student Perception of Learning	Student perceptions of the effectiveness and transferability of knowledge/skills learned during assignment	Ask students to respond to four standardized questions administered consistent with students' abilities during the quarter. Submit electronically no later than 10 days following the end of the quarter.
Faculty Perceptions	Faculty input regarding 1) strengths and weaknesses of process, and 2) scale-up potential	Complete quarterly electronic survey no later than 10 days following the end of the quarter.

The project focused on the impacts of information literacy content on precollege students, a diverse student population that includes English as a Second Language (ESL) students who are learning English language and American culture; Adult Basic Education (ABE) students who are developing reading, writing, and mathematics skills; developmental education students who have mastered the basic skills of reading and writing, but need additional instruction to succeed in the workplace or college education. All of these students need to develop a basic understanding of information resources and tools as they pursue their immediate educational goals, and this preparation can lay the groundwork for later success in college-level courses.

In order to collect consistent data without imposing instructional design on individual faculty, library and discipline faculty teams used a common rubric for assessment. The teams worked together over four quarters, starting with a planning quarter followed by three implementation quarters. They produced and implemented curriculum plans to teach information literacy as an integrated component of their English, reading, writing, and mathematics instruction and used the common rubric to assess students' developing information literacy skills. Teams were encouraged to collaborate on the entire process, from assignment design through delivery, assessment, and revision.

At the end of each implementation quarter, the PILR teams collected student assessment data and reflected on their curriculum and assignments, which they revised as needed and then taught again the following quarter. At the end of the study, PILR students were compared with a control group of similar students to determine if they demonstrated significantly better achievement than students not enrolled in PILR classes.

The PILR project involved:

- 16 Washington State Community and Technical Colleges
- 44 teams (44 discipline faculty and 26 librarians)
- 1,943 students in ABE, ESL, and developmental education

PROFESSIONAL DEVELOPMENT AND PILR TEAMS

Library faculty from all CTCs were invited to recruit discipline faculty to form PILR teams. Each team consisted of one library faculty and one discipline faculty. Library faculty drew from existing relationships and generated new collaborations by offering the opportunity to join forces through PILR. Team members received quarterly stipends for their work totaling up to $1,500 per team member over four quarters. In all, 44 teams participated; of these, only two teams were unable to complete the project after beginning the initial planning quarter.

Funding was available for teams who elected to continue their collaborations beyond the initial four quarters. In general, stipends encouraged the multi-quarter commitment and provided some compensation for the additional effort required for gathering and reporting data, but the relatively small remuneration was likely only one motivating factor, as a majority of faculty reported that the opportunity to collaborate drew them to the project. (See results section below.)

Because the implementation of the PILR project was spread over three years, new teams started on a quarterly basis to stagger the participation. This approach also allowed project planners to refine the project. The initial cohort provided useful feedback on the project materials and process. In their first quarter, each team developed new curriculum with substantial information literacy components. This curriculum was described according to a Curriculum Planning Template with guiding questions adapted from the work of Dr. Debra Gilchrist, Dean of Pierce College Library at the time. The template included the following five questions:

- What should the student be able to do?
- What does the student need to know to do it well?
- How will the student learn?
- What will the student do to demonstrate their learning?
- How do you know the student has done this successfully?

The teams designed an assignment that required students to display both subject learning and information literacy skills. Typical assignments involved tasks that showed how well students could

apply what they had learned about the subject and information literacy. During their second through fourth quarters each team taught the curriculum, evaluated it, revised it to address any issues, and taught it again, repeating the process at least three times. The teams used the PILR rubric to measure this learning and reported individual student scores in a form that was submitted to the project coordinator at the end of each quarter.

COMMUNICATION AND COLLABORATION

The CLAMS listserve was ready-made for communicating with CTC librarians, who were eager to get involved. Participation throughout the project was consistent. Most project information was made available through the LSTA Information Literacy web pages initially established to support the previous LSTA grant. The pages were created through PBWiki, a site that provides free space to educators. The wiki format allowed the coordinator to grant users permission to edit pages and upload content, allowing the space to be used for collaboration as well as information. The PILR pages within the site offered a place to find information, including bibliographies, links to training recordings, forms, schedules with deadlines, and more. The team reports were posted quarterly to demonstrate that work was completed and for review by librarians, instructors, and researchers.

RUBRIC DESIGN

The centerpiece of the PILR project was the rubric that all teams used over the three years. Early in the project, the planning team recommended Reflect-Learn-Connect[3] as the basis for this rubric. This research process model had recently been designed by Seattle Central Community College Library. The model visually represents the research process using components adapted from Eisenberg and Berkowitz called The Big 6[4]. The elements of Reflect-Learn-Connect were used as a framework for the six dimensions covered by the PILR rubric[5]. Initially, the rubric team of library and discipline faculty sought to create highly detailed rubrics, resulting in draft rubrics for each distinct student population covering three overlapping levels (defined as 1-2, 3-4, and 5-6). Pilot teams were enlisted in spring 2010 to begin the project by identifying learning outcomes, designing and implementing instruction to meet those outcomes, and finally, assessing student work using the rubric.

To evaluate, improve, and finalize the draft rubrics, library and discipline faculty attended a rubric norming workshop in spring 2010 conducted by Dr. Megan Oakleaf, Associate Professor in the School of Information Studies at Syracuse University. PILR teams applied the draft rubric to examples of student work generated by the pilot teams in winter 2010. Participants then compared how different faculty and librarians applied the rubrics to actual student work. This process generated feedback on the usability of the rubrics as well as the larger realization that although the needs and interests of the three student

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[3] See Reflect Learn Connect, http://seattlecentral.edu/iris/overview/research_process/process.shtml
[4] See Big 6, http://big6.com/pages/about/big6-skills-overview.php
[5] See Appendix: PILR Rubric

populations differed significantly, information literacy could be described in nearly identical terms for all three populations. Similarly, the participants discovered that because information literacy skills are overlapping by nature, rubric users would have difficulty assessing for that many levels. Therefore, the three rubrics were collapsed into a single rubric with five dimensions progressing from 1(emerging) to 5 (mastery). Each level for each dimension intentionally provided a high degree of detail, providing substantial guidance for evaluating student work.

Based on the feedback generated at the norming session, a smaller group of faculty and librarians gathered to analyze and finalize the rubric, which was used for the duration of the project. Most users found this rubric helpful, but some feedback indicated that it needed further clarification, especially to be more student-friendly.

THE PILR PROJECT TIMELINE

The PILR project ran from spring 2009 through spring 2012.

2008-2009	The PILR research team met in late spring 2009 to discuss research design. They determined project goals and parameters, and training the research teams would need to successfully complete the grant. A sub-group held a second meeting to finalize the research design and materials in preparation for the start of the project. In summer 2009, 32 library faculty and 10 discipline faculty attended a workshop on the information literacy needs of precollege students and mapped information literacy outcomes to the Washington State Adults Learning Standards. This work served as the basis for an IL rubric used for the PILR project.
2009-2010	A group of library and discipline faculty drafted a rubric based on the work by the research team and the workshop participants. The planning team also created the infrastructure for the projects: the application procedures, timeline, forms, and guidelines. In fall 2009, 68 library and discipline faculty attended a workshop on "IL in the Precollege Curriculum" to kick off PILR as well as related assessment grants. A literature review on precollege student assessment, learning and information literacy was commissioned, completed by Shireen Deboo, and posted on the IL wiki March 2010. In winter and spring 2010, the first 19 PILR teams began planning and implementing IL assignments. Student work from several of these assignments was used at a rubric norming session in late spring to refine the rubric and develop consistency in how the rubric was applied.
2010-2011	New PILR teams participated in an online orientation that was also recorded for future training. This session was made available on the LSTA wiki. By the end of the year, a total of 39 teams were engaged in PILR research. Teams that had completed their fourth quarter were invited to participate for additional quarters.
2011-2012	The final PILR teams concluded their data collection in spring 2012. Several team members responded to an invitation to write articles on the project; two of these articles were accepted for publication. A final survey was sent to faculty participants to gather their feedback and a

concluding online meeting was held to bring together participants to share their experiences. Maureen Pettitt, institutional researcher for Skagit Valley College completed data analysis.

ASSIGNMENTS

Teams worked collaboratively to generate assignments to address information literacy. Two requirements shaped these assignments. First, the information literacy curriculum needed to integrate smoothly with the subject curriculum. Second, the assignment needed to be authentic, an activity normally performed by students as a part of information seeking to meet personal or educational needs. Teams used a curriculum planning template to design the information literacy component so that it would be integrated into the course and they used an assignment template to describe the specifics of the assignment, including learning outcomes from the rubric and the course. They also outlined how students would develop and demonstrate the outcomes. The resulting assignments were posted quarterly to the project website. Assignment guidelines are shown in the table that follows.

GUIDELINES AND TIPS FOR COMPLETING THE TEMPLATE
GENERATIVE TOPICS SHOULD BE
- relevant to students in their roles as community members, workers, and family members   - central to one or more disciplines or areas of expertise   - accessible through multiple means   - connected to other topics taught
LEARNING OUTCOMES SHOULD
- focus on key understandings   - be clear, explicit and share   - address learning challenges   - align to the Washington State Adults Learning Standards or the developmental education course learning outcomes
ASSIGNMENTS
- focus on targeted knowledge, methods, and/or skills   - have a central activity that builds and integrates understanding   - integrate naturally with other course assignments so students see research as part of a larger process   - consider the most effective collaboration between library faculty and discipline faculty
ASSESSMENT STRATEGIES
- target learning outcomes   - are based on explicit criteria set forth in the rubric   - include self, peer, and teacher, as appropriate   - offer informative feedback to students

Student assignments often included standard academic projects: developing a topic for an essay, identifying search terms that would retrieve resources, searching library databases for articles, retrieving those articles, summarizing them, writing an essay synthesizing the information found,

avoiding plagiarism, or creating a bibliography. Examples of other information literacy tasks are listed below:

- Create a presentation using Google Docs (Columbia Basin College, spring 2012)
- Find a tutor or librarian to help them with questions (Lower Columbia College, fall 2011)
- Use Excel to create tables comparing life in the United States and another country (Bellingham Technical College, spring 2012)
- Find two resources on a career of their choice and then evaluating the resources (Bellevue College, spring 2012)
- Find, analyze, and use images from Flickr Commons and the NYPL Digital Gallery (Green River Community College, fall 2011)
- Use government websites to research information such as emergency services, health care, and court information (Green River Community College, fall 2011, spring, 2012)
- Use a bus website to plan and compare travel routes. (Seattle Central Community College, winter 2012.)
- Use several computer software tools including PowerPoint to make presentations. (Seattle Central Community College, fall, 2011.)

COMMON THEMES

Yearly summaries were compiled the end of each project year. Some common themes noted about the instruction process for pre-college students are listed below:

- Technology skills and information literacy skills cannot be separated. Many teams reported that part of their instruction, whether planned or not, necessarily involved teaching skills such as understanding web browsers, using email, opening documents, saving documents, and more.
- Teams reported challenges with varying student ability levels in the same class.
- Some teams noted that recording some parts of the lectures so that pre-college students can revisit them may be a valuable strategy for future instructors.
- Simpler is better. Teaching one concept at a time, and giving the students several opportunities to practice increased student learning.

Common themes also emerged when librarians and faculty responded to the end of project survey in spring 2012.

- Improvement in information literacy outcomes: 93% of the library and discipline faculty responding to the survey felt that the collaboration led to improvements in IL outcomes for the students.
- Student Engagement: 79% of the library and discipline faculty felt that changes they implemented as a result of PILR increased student engagement and learning.
- Personal Professional Development: 79 % of the library and discipline faculty felt that the project had been very worthwhile for their professional development.

- Professional Collaboration: 78% of the library and discipline faculty felt they will seek out further opportunities for collaboration on IL in the future.

Finally, it seems clear from the data above and the comments throughout the team reports that the PILR project has made both information literacy and library as faculty partners more visible – and more clearly valuable – on community and technical college campuses across Washington State. Although the primary focus of the project was on student learning outcomes, this was an unexpected but important end result of the PILR project.

CONCLUSIONS

At the outset, PILR planners wanted to know whether and how the library – and library instruction in particular – contributes to student achievement. Fueled by a new initiative to track pre-college student achievement in Washington State, along with LSTA funding, the CTC libraries sought to answer this question by partnering library and discipline faculty to work locally to contribute to a statewide project. In the process, faculty deepened existing collaborations and developed new ones while gaining a better understanding of the role of information literacy in students' academic work. The following conclusions can be drawn from this project:

Information literacy benefits from ongoing library and discipline faculty collaboration

Throughout the project, library and discipline faculty collaborated through careful design and review of curriculum. Stipends, made possible by the grant, were contingent on the delivery of specific items on a quarterly basis, formalizing the process and ensuring sustained participation from each team, and providing structure and discipline that assessment rarely receives on such a broad scale. At the conclusion of the project, faculty and librarian survey responses indicated that ongoing intentional collaboration helped them better comprehend their mutual needs, an understanding that led to a special focus on the impacts of information literacy on students.

In the true spirit of assessment, teams reviewed PILR assignments and reported student performance on identified learning outcomes. They noted when assignments were working and when changes were needed, and they implemented changes for the next quarter. This collaboration helped build relationships and habits that promise to support information literacy beyond the project.

Actual rubric data was very useful for faculty teams, but the data did not produce conclusive information as a whole.

Teams used the PILR rubric, selecting relevant learning outcomes and reporting individual student assessment data as required throughout the project. However, the data itself turned out to be of limited value because control groups or pre/post testing were not used. Still, the practice of quantifying and recording student performance sharpened teams' focus on student outcomes produced by the assignment. In this way, teams gained some insight into whether students achieved identified outcomes that led to revised assignments. The data analysis did not include a review of whether individual teams

improved student performance from quarter to quarter, because students were not with the same instructor from quarter to quarter and because relatively low numbers in each class limited the significance of any observable changes.

Incorporating information literacy into pre-college curriculum appears to benefit students beyond an individual course.

Because individual student identification numbers were collected throughout the project, it was possible to compare PILR students with the larger pre-college student population in Washington State over the same period. As detailed in the project evaluation below, PILR students earned more student achievement points as calculated by SBCTC. The difference in student achievement points suggests lasting impacts on PILR students, but the data cannot be linked solely to information literacy. The results do suggest that students benefitted from some features of the study, including faculty attention to learning outcomes, careful curriculum design and revision, exposure to information literacy concepts, faculty collaboration with librarians, and possibly other factors introduced through PILR.

It is hoped that project findings stimulate continuing collaborations between library and discipline faculty as well as further exploration into the specific contributions of information literacy instruction for students at the early stages of their college education.

FINAL PROJECT EVALUATION[*]

EVALUATION PLAN

A multi-method evaluation plan was developed to assess the outcomes of the PILR project. The evaluation included four areas:

1. Rubric scoring for student work
2. Faculty surveys during project
3. Faculty end-of project survey
4. Student survey during project
5. Student Achievement points earned comparisons

Each of these methods is described below. Result highlights from each of these assessments are also presented.

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[*] This section was prepared by Maureen Pettitt, Director of Institutional Research at Skagit Valley College.

RUBRIC SCORES FOR STUDENT WORK

Faculty participants scored student work using the rubrics developed for this project. There were 1,943 students enrolled in courses in which information literacy assignments were given and the PILR rubric was used to grade those assignments. During the development phase of the project six student learning outcomes were identified: defining the task, identifying options, selecting sources, analyzing content, evaluating sources, and presenting findings. Rubrics were developed for each of the outcomes for three combined levels: Level 1/2, Level 3/4 and Level 5/6.

The sample sizes by level varied greatly: Level 1/2 tended to have the smallest sample size and Level 5/6 had the largest sample sizes. The values from the rubric ranged from a 0 to a 5, where a 0 represented beginning proficiency and a 5 indicated more advanced proficiency with literacy.

It might be expected that the mean scores for students would increase as the level increased, but as shown in the table below, that was not the case. Level 3/4 students scored lower than Level 1/2 students on 5 of the 6 learning outcomes. In all cases, however, the mean for Level 5/6 students was higher than either Level 1/2 or Level 3/4. It is difficult to ascertain whether these results were a function of assignment difficulty, variability in faculty grading, differences in the rubrics, or some other factor.

Learning Outcome	Level 1/2		Level 3/4		Level 5/6	
	Number	*Mean*	*Number*	*Mean*	*Number*	*Mean*
Define Task	57	2.70	60	2.38	605	3.38
Identify Options	18	2.06	145	2.70	436	2.95
Select Sources	68	3.10	108	1.81	585	3.12
Analyze Content	174	2.75	160	2.24	749	3.28
Evaluate Resources	59	2.51	96	2.48	415	3.06
Present Findings	100	2.94	226	2.51	867	3.38

FACULTY SURVEY – FORMATIVE ASSESSMENT

At the end of each quarter during the project (winter 2010 through spring 2012), faculty participants were provided with a link to a survey consisting of five open-ended questions. The survey was designed to obtain feedback that would help improve the project processes and tools. The specific questions were:

1. How did the integrated assignment template assist you with designing your assignment?
2. What, if anything, would you change about the integrated assignment template?
3. Based on your use of the rubric this quarter, what changes would you make to the assignment(s) and/or instruction plans you developed?
4. What prompted you to consider making each of those changes?

5. What worked well on this project and what could be improved (collaboration, communications, support, etc.)?

During the project, sixty-eight (68) project participants completed all or part of the survey. The comment content analysis provided in the table below is based on responses to all five items. Note that a single response may be counted in more than one category.

Changes Made/Sources of Change	Count	Percent
Need to make changes to **assignments** to suit student needs	43	63.2%
Change **content** of course to suit student needs	41	60.3%
Need to increase focus on **rubric/guidelines** when planning	23	33.8%
Rubric needs to be **simplified and/or student friendly**	22	32.4%
Student progress prompted change	21	30.9%
No suggestions/Class was successful	55	80.9%

Template Usefulness	Count	Percent
Template helped to plan outcome based **lessons and assignments**	54	79.4%
Successful **collaboration**	42	61.8%
Student success	17	25.0%
Did not use/Used very little	8	11.8%

These results strongly suggest that faculty were flexible in their approaches to course and assignment design, and that the rubric, while needing some modification, provided some guidance on course and assignment design. The template that faculty completed and submitted as part of the project proposal was also a useful planning tool.

FACULTY SURVEY – SUMMATIVE ASSESSMENT

In addition, an end-of-project survey was administered in spring 2012. Twenty-eight (28) project participants responded to this survey, representing 13 colleges. Eleven of the respondents (39%) were discipline faculty while the remaining 17 (61%) were librarians. With regard to their students, 29% stated that their students were enrolled in Adult Basic Education (ABE), 21% stated their students were in developmental courses, and 50% stated their students were enrolled in English as a Second Language (ESL) courses.

This survey included both an open-ended questions (#1) and close-ended questions (#2 - #8). The specific questions are provided below.

1. What motivated you to participate in PILR?
2. Overall, how worthwhile do you feel this project has been for your own professional development? (very, moderately, slightly)

3. Our librarian/faculty team functioned effectively (i.e., organization, communication, etc.)
4. Our collaboration on teaching and assessment led to improvements in information literacy outcomes for the students.
5. Using the rubric helped me better understand my students' achievement of information literacy outcomes.
6. As a result of PILR, I am more confident about integrating information literacy in my instruction.
7. As a result of PILR, I will seek opportunities to collaborate with a librarian/discipline faculty on information literacy in the future.
8. Changes we implemented as a result of PILR have increased the students' learning and engagement.

The responses to the first open-ended question about the faculty's motivation to participate yielded a variety of responses, but the most often cited reasons were the opportunity to build partnerships/relationships between discipline faculty and library faculty, to collaborate with a colleague on a long-term project, and to meet the information literacy needs of pre-college students.

Of the faculty responses to the second question about the value of the project to their own professional development, the majority (79%) reported that the project had been "very" worthwhile, 21% reported that it had been "moderately" so. There were no "slightly" responses.

The responses to the remaining close-ended questions from the end-of-project survey are provided in the table below.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Team functioned effectively	68%	21%	4%	4%	4%
Collaboration led to improvement	57%	36%	0%	0%	7%
Helpfulness of rubric	32%	29%	25%	7%	7%
Confident about integrating information literacy into instruction	50%	25%	18%	4%	4%
Will seek opportunities to collaborate with librarians/discipline faculty	78%	7%	7%	4%	4%
Changes have increased students' learning and engagement	54%	25%	11%	4%	7%

Note: Totals may not equal 100% due to rounding.

Of note were the comments about good communications and building relationships. Respondents indicated that their team worked closely together, making changes after each quarter to "achieve the outcomes we envisioned." The longitudinal aspects of the project—and, consequently, the ability to make modifications—were seen as a plus by several respondents.

The faculty noted that the students learned a great deal from the project: "Many of my students developed critical thinking skills and the ability to find useful information though books and online resources." Several faculty noted that the skills students were learning were helping them transition into college-level work.

While a number of faculty members liked the rubric and a few noted that the rubric was helpful in organizing the assignments, some found it to be confusing.

Most discipline faculty expressed more confidence about integrating information literacy into their instruction, and a majority would seek opportunities to collaborate again. One participant described participation in the project as a "wonderful learning experience," and another noted that it "opened doors."

With regard to student learning and engagement, the list below is representative of observations make by faculty about the evidence of learning taking place as a result of students' participation in PILR:

- "ESL students returned to the library on their own after [PILR]"
- "ESL students were able to create presentations using Google Docs and present to their classmates"
- "Students are going beyond the very basics of assignments and reporting 'it takes a long time' to find what they are looking for"

STUDENT SURVEY

Each quarter, students participating in the PILR project were provided with a link to a brief survey designed to elicit student's perceptions of what they learned during the quarter. During the project, 757 project participants completed all or part of the survey. Each of the questions and responses are summarized in the tables below.

1. How certain are you that staff members at your college library can help you with questions about using the library and searching for information?

	Frequency	Percent
Very Certain	575	76.0
Somewhat Certain	157	20.7
Not Certain	25	3.3
Total	757	100.0

2. How much have you learned about using library resources?

	Frequency	Percent
Feel I have learned a lot	377	49.8

Feel I learned some things	353	46.6
Feel I didn't learn very much	27	3.6
Total	757	100.0

3. This quarter, how much of what you learned about using the library and searching for information do you think you will be able to use in other classes in the future?

	Frequency	Percent
A lot	404	53.4
Some	322	42.5
Not much	31	4.1
Total	757	100.0

4. In the future, if you have an assignment that asks you to find resources and information, how much help will you need to get started?

	Frequency	Percent
I can start without help.	234	30.9
I can start with a little help.	426	56.3
I will need a lot of help getting started.	97	12.8
Total	757	100.0

For question #2, students were also asked to "describe a few things you learned." Their responses to the open-ended question are categorized below. Note that a single response could be counted for multiple categories.

Category	Count	Percent
How to conduct research	160	23.7%
How to find and checkout books	190	28.2%
Where the library is and how to ask for help	75	11.1%
Computer and Internet Basics (Library website)	272	40.4%
Library Resources (Reference books, printer, tutor, etc.)	129	19.1%
How to cite sources and avoid plagiarism	25	3.7%
Generally helpful/Learned specific content	54	8.0%
Did not learn	20	3.0%

STUDENT ACHIEVEMENT POINTS

Another measure of outcomes is based on a comparison of Student Achievement points earned by students participating in the PILR project with similar non-participating students. In order to conduct this analysis, the reporting sheet asked faculty to submit student identification numbers (SIDS).

At the end of the project, of the 1,943 students in the project database, 1,083 could be matched to the Student Achievement databases. Of those, 786 were basic skills students. Both the basic skills point

gains and total point gains were obtained for those students based on their basic skills enrollment and level. Similar data was obtained for other basic skills students, again by basic skill enrollment and level. This analysis was done within a single year.

The table below provides the results of this analysis for each of the years of the project. The average points per student for project participants, both for basic skills point gains and all point gains, is higher for each year of the project. In some cases, the differences are substantial. For example, the basic skills points per student for participants in 2010-11 was 2.8 compared to 1.6 for non-participants. Similarly, the total points-per-student for project participants was 3.3 compared to 1.7 for non-participants. While there might be intervening variables that contribute to these differences, the data suggest that participation in the PILR project resulted in considerably greater progress and achievement as measured by student achievement points.

Student Achievement Points earned by ABE & ESL PILR Participants Compared with Non-Participants

Note: Categories that include fewer than 6 participants were excluded from the analysis.

2009-10

	Participants					Non-Participants				
Kind Of Basic Skills	*Student Count*	*Basic Skills Gain Points*	*Average Points*	*Total Points*	*Average Total Points*	*Student Count*	*Basic Skills Gain Points*	*Average Points*	*Total Points*	*Average Total Points*
ABE 2	8	14	1.8	14	1.8	253	406	1.6	439	1.7
ABE 3	6	22	3.7	25	4.2	368	794	2.2	858	2.3
ABE 4	13	16	1.2	22	1.7	772	1157	1.5	1417	1.8
ESL 1	7	27	3.9	27	3.9	271	680	2.5	680	2.5
ESL 3	12	34	2.8	34	2.8	586	1128	1.9	1133	1.9
ESL 4	22	58	2.6	59	2.7	666	1163	1.7	1177	1.8
ESL 5	18	63	3.5	63	3.5	415	900	2.2	925	2.2
ESL 6	11	23	2.1	26	2.4	273	480	1.8	526	1.9
Totals	**97**	**257**	**2.6**	**270**	**2.8**	**3604**	**6708**	**1.9**	**7155**	**2.0**

2010-11

		Participants						Non-Participants			
Kind Of Basic Skills	*Student Count*	*Basic Skills Gain Points*	*Average Points*	*Total Points*	*Average Total Points*	*Student Count*	*Basic Skills Gain Points*	*Average Points*	*Total Points*	*Average Total Points*
ABE 1	7	14	2.0	14	2.0	284	470	1.7	502	1.8
ABE 2	33	45	1.4	73	2.2	1230	1687	1.4	1834	1.5
ABE 3	78	232	3.0	274	3.5	1918	3536	1.8	3882	2.0
ABE 4	119	278	2.3	414	3.5	3222	4561	1.4	5608	1.7
ESL 2	8	37	4.6	37	4.6	1464	2609	1.8	2611	1.8
ESL 3	23	125	5.4	125	5.4	2552	3951	1.5	3962	1.6
ESL 4	71	226	3.2	231	3.3	3216	4862	1.5	4903	1.5
ESL 5	75	232	3.1	239	3.2	2035	4420	2.2	4522	2.2
ESL 6	66	180	2.7	188	2.8	1575	2504	1.6	2664	1.7
GED 1	26	24	0.9	69	2.7	924	963	1.0	1464	1.6
Totals	**506**	**1393**	**2.8**	**1664**	**3.3**	**18420**	**29563**	**1.6**	**31952**	**1.7**

2011-12

Kind Of Basic Skills	Participants					Non-Participants				
	Student Count	Basic Skills Gain Points	Average Points	Total Points	Average Total Points	Student Count	Basic Skills Gain Points	Average Points	Total Points	Average Total Points
ABE 1	7	22	3.1	23	3.3	225	321	1.4	332	1.5
ABE 2	24	75	3.1	90	3.8	816	1127	1.4	1206	1.5
ABE 3	45	113	2.5	131	2.9	1198	2264	1.9	2445	2.0
ABE 4	81	196	2.4	252	3.1	1951	2618	1.3	3130	1.6
ESL 3	13	45	3.5	45	3.5	1949	2901	1.5	2901	1.5
ESL 4	35	81	2.3	82	2.3	2400	3164	1.3	3190	1.3
ESL 5	78	216	2.8	221	2.8	1768	3334	1.9	3382	1.9
ESL 6	43	69	1.6	86	2.0	1200	1557	1.3	1632	1.4
GED 1	19	12	0.6	22	1.2	473	345	0.7	546	1.2
Totals	**345**	**829**	**2.4**	**952**	**2.8**	**11980**	**17631**	**1.5**	**18764**	**1.6**

Notes:

Student Count: The number of students taking a courses within each basic skills category

Basic Skills Gain Points: The total number of points earned by students within each basic skills category
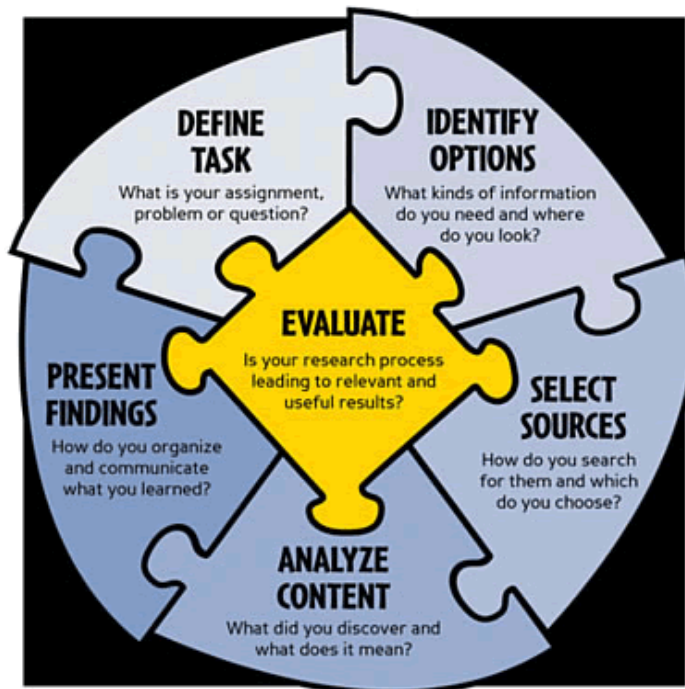
Total Points: The sum of points of all types (basic skills and other) earned by all students within each basic skills category

Average Points: A calculated field = Basic Skills Gain Points/Student Count

Average Total Points: A calculated field = Total Points/Student Count

APPENDIX: THE PILR RUBRIC

PILR Rubric Dimensions At-a-Glance

Define Task Defining an assignment or problem, developing a question or topic, and devising a plan for answering the question.

Identify Options Choosing appropriate sources of information (such as books, reference books, periodicals, broadcast media, etc.) and the tools for finding that information (such as library catalogs, databases, search engines, directories, etc.).

Select Sources Use search tools to search for needed information and find them, including using indexes and developing keywords and other terms to generate a list of sources. Consider these sources, choose the best information for the information need, and locate the content.

Analyze Content Read, listen, or view information, extract content to form meaning, compare and relate information from different sources.

Present Findings Present or share information in some form such as a written assignment, presentation, poster, or website. Includes findings, synthesis, or conclusions and includes citations or credit to sources used.

Evaluate Consider both search strategy (whether it is producing usable sources) and the overall completeness, quality, and appropriateness of the information for the task.

DEFINE TASK

Outcome Definition: "What is your problem, assignment or question?" **Outcome Tasks:** Identifying the problem; Developing and Following a Plan.

1 - Emerging	2	3	4	5
Identifies elements of the problem or question with a high level of assistance. Follows a highly structured plan.	Selects problem or question from a structured set of topics with minimal assistance. Follows a highly structured plan.	Identifies the problem or question independently and generates topic ideas. Follows a minimally structured plan.	Identifies the problem or question independently and generates topic ideas and related subtopics. Develops and follows a basic plan based on provided guidelines.	Identifies the problem or question independently and refines in order to develop subtopics; independently adjusts the topic focus to fit the task. Develops and follows a basic plan based on provided guidelines.

IDENTIFY OPTIONS

Outcome Definition: "What kinds of information do you need and where do you look?" **Outcome Tasks:** Selecting Tools; Differentiating Among Them

1 - Emerging	2	3	4	5
Selects an appropriate tool or type of source from a limited set of options.	Selects and applies basic description of appropriate tools or types of sources from a limited set of options.	Selects and applies some description of appropriate tools or types of sources from a set of options. Provides some reasoning for selection(s).	Selects and describes appropriate tools or types of sources from a broad range of possibilities. Analyzes and explains reasoning for selection(s). Independently seeks research help as needed.	Selects and describes a variety of appropriate tools or types of sources from a broad range of possibilities. Compares and contrasts different types of information. Analyzes and explains reasoning for selection(s). Actively seeks research help.

SELECT SOURCES (SEARCHING)

Outcome Definition: "How do you search and which do you choose?" **Outcome Tasks:** Using tools, Selecting Terms, Choosing Sources.

1 Emerging	2	3	4	5
Follows a highly structured process to conduct searches. Conducts search following a highly structured process	Follows a guided process to conduct simple searches. Conducts a simple search following a guided process	Conducts basic searches with minimal assistance.	Conducts searches using multiple features. Seeks help as needed.	Applies general knowledge of search tools to specific tools and uses multiple search tool features. Actively seeks help to refine results. Flexibly integrates multiple search tools into search strategy. Actively seeks help when needed.
Applies basic search terms with a high level of guidance.	Identifies synonyms and combines basic search terms with guidance.	Identifies and combines search terms related to the topic and subtopics. With guidance, revises search language to improve results	Identifies and prioritizes search terms and strategy but searches may not be complete or in best order. Revises searches to improve results independently.	Constructs logical search statements with specific search terms and uses advanced techniques such as Boolean logic. Actively revises searches based on information gathered in the search process.
Can explain concept of criteria/quality and its role in source selection.	Applies multiple criteria in a basic way to choose sources with a high level of guidance.	Determines and applies appropriate criteria to choose relevant sources with minimal guidance.	Determines and applies several appropriate criteria to choose relevant sources. Provides basic rationale for choices.	Applies all appropriate criteria to independently chosen resources. Analyzes and explains reasoning for selection(s).

ANALYZE CONTENT

Outcome Definition: "What did you discover and what does it mean?" **Outcome Tasks:** Collecting Information, Organizing Information, Evaluating Content, Citing Sources

1 -Emerging	2	3	4	5
Identifies and records some relevant information with a high level of guidance.	Identifies and records several relevant ideas or facts with guidance.	Identifies, analyzes, and records major points independently.	Identifies, analyzes, and records major points and related details independently.	Identifies, analyzes, and records the strongest major points and details that comprehensively support an argument.
Fits small amount of basic information into a highly structured organizational model.	Organizes small amount of information based on a model.	Organizes information based on provided guidelines.	Develops and applies organizational structure for information with minimal guidance.	Develops and applies organizational structure for information independently.
Responds to feedback by seeking some additional information with a high level of guidance.	Responds to feedback by seeking some additional information with guidance.	Evaluates whether material adequately addresses the question and collects additional information as needed with minimal guidance.	Evaluates whether material adequately addresses the question and collects additional information independently.	Evaluates whether material adequately addresses the question. Identifies gaps and collects targeted information.
Records sources of information with a high level of guidance	Records sources of information with guidance.	Records major elements of a citation with a high level of guidance.	Independently incorporates major elements of a citation with guidance.	Independently incorporates major elements of a citation

PRESENT FINDINGS

Outcome Definition: "How do you organize and communicate what you learned?" **Outcome Tasks:** Presenting Content; Responding to Information; Attributing Information

1- Emerging	2	3	4	5
Presents a few findings based on a highly structured model.	Presents major findings based on a model.	Presents major findings and supporting details based on general guidelines.	Organizes and presents major findings, supporting details, and conclusions.	Synthesizes and organizes major findings and details into a unified presentation with supporting evidence and basic analysis.
Assesses and reflects on new learning/prior knowledge with high level of guidance.	Assesses and reflects on new learning/prior knowledge with guidance.	Responds to the information gathered by comparing it with own knowledge or assumptions.	Responds to the information by integrating it with own knowledge or assumptions.	Responds to the information by adjusting own knowledge or assumptions.
Names the source of information with a high level of guidance.	Names the source of information with guidance.	Records major elements of a citation with a high level of guidance.	Records major elements of a citation independently.	Applies a standard citation style to document sources used.

EVALUATE SOURCES

Outcome Definition: "Is your research process leading to relevant and useful results?" **Outcome Tasks:** Evaluating based on Criteria; Articulating Evaluation

1 -Emerging	2	3	4	5
Defines criteria and describes why it might be important to the research process	Evaluates sources using basic criteria with guidance.	Evaluates and chooses sources by applying defined criteria with minimal guidance.	Evaluates and chooses sources by applying defined criteria with minimal guidance. Provides basic rationale for choices.	Evaluates and chooses sources by applying a defined set of criteria. Analyze and use source appropriately Provides basic rationale for choices.
Accepts information as equally valid and useful without applying specific criteria.	Accepts most information as valid and useful with little comparison to prior research. Makes minimal comparisons between different sources and content.	Accepts most information as valid and useful and applies some elements of a defined set of criteria. Makes basic comparisons between different sources of information to determine relevance and quality.	Analyzes most resources by applying all relevant elements of a defined set of criteria. Uses analysis to determine which information to keep and which to discard. Integrates some new information into evaluation of future materials.	Analyzes all resources by applying all relevant elements of a defined set of criteria. Compares information being analyzed to other knowledge and sources. Makes informed decisions about which information to keep and how to integrate new information and evaluate future materials.