

Service-learning as Effective Pedagogy for Information Literacy and Technology Competency Instruction in a Cross-Disciplinary, Cross-Cultural Context

Cynthia Hsieh

Library Specialist, University Libraries, University of the Pacific, USA

E-mail: chsieh@pacific.edu

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【Abstract】

This article provides a detailed description of an interdisciplinary project for teaching information literacy and technology competency that overcomes institutional barriers and socioeconomic gaps – two obstacles that often hinder collaboration between higher education institutions and their local communities. Most importantly, it proposes a model of powerful pedagogical partnership between librarians and teaching faculty.

The article first describes the background and philosophy of the project and provides a detailed account of the project implementation and pedagogies. A key element of the project design is the service-learning component that provides a “real world” environment to accelerate students’ learning experience. Finally, it offers valuable suggestions to those who wish to collaborate in a similar project.

PROJECT BACKGROUND AND PHILOSOPHY

To prepare students as responsible twenty-first century citizens, universities aspire to be more engaged with local communities. As practice strengthens learning, service-learning has been widely adopted by universities worldwide, academic libraries need to find ways to build a strong link between information literacy instruction and service-learning. This article describes an innovative model that incorporates service-learning and modified cascade training model into a K-16 information literacy and technology competency instruction in a local community setting.

Since the 1980s, the public has voiced great concern about higher education institutions and the priorities of faculty (Boyer, 1990; Checkoway, 2001). Some parents, trustees, and legislators allege that higher education institutions isolate themselves from their local communities. University faculty members have been criticized for not paying enough attention to undergraduate education and for distancing themselves from teaching, the central mission of higher education,

in pursuit of obscure research (Brand, 2000; Checkoway, 2001; O'Meara, 2006; Rice, 1986). In response to these criticisms, many higher education institutions throughout the country have embraced service-learning as a teaching and learning method that blends both service and learning in such a way that both occur at the same time and are enriched and supported by each other. The University of the Pacific is one of those institutions.

Founded in 1851, the University of the Pacific (Pacific) is an independent, comprehensive university with 6300 students. Priding itself as California's first chartered institution of higher education, Pacific has a long tradition in community service and has been very involved with local school districts.

To heighten academic distinctiveness, Pacific's Board of Regents adopted "Encourage collaboration among programs in the College of the Pacific and professional schools to create more interdisciplinary and cooperative programs and courses" as one of its new planning priorities (University of the Pacific, 2006). The Board of Regents further identified "building stronger community and regional partnerships" and "providing experiential learning opportunities to all students" as essential components of its Strategies Plan, Pacific Rising, 2008-2015 (University of the Pacific, 2007).

The University Library is an integral part of teaching and research at Pacific. Librarians are members of the faculty and are expected to provide information literacy instruction to Pacific students. However, over the last few years, in response to a perceived decline in student engagement during library instruction, librarians have been struggling to find ways to motivate students to learn important information literacy skills. At the same time, as an integral part of Pacific, the University Library is also eager to support Pacific's Institutional Planning Priorities.

In December 2005, a librarian teamed up with two teaching faculty (one from Pacific's liberal arts college and the other from a professional school) with the intention to develop an interdisciplinary grant proposal that would combine the subject strength of each team member and would be in accord with Pacific's mission to "provide a superior, student-centered learning experience, integrating liberal arts and professional education and preparing individuals for lasting achievement and responsible leadership in their careers and communities." (University of the Pacific, 2001)

THE INTERDISCIPLINARY PROJECT TEAM MEMBERS

The project team consisted of an associate professor from the Computer Science Department who is the primary advisor for computer science student projects, an associate professor from the English Department who is also the chairperson of the Ethnic Studies Program, and a librarian with assistant professor rank who, at that time, was a member of the University's Experiential Learning Oversight Committee. After carefully assessing their disciplinary specialties and research interests, the team decided to create an exploratory project that uses service-learning as a key pedagogy to engage Pacific students in information literacy and computer skills simultaneous learning and teaching across racial and socio-economic boundaries. Service-learning, as described by McDonald and Dominguez (2005, p. 19), is "a blending of both service and learning goals in such a way that both occur at the same time and are enriched and supported by one another." The team's decision to employ service-learning as the project's key pedagogy was based on the belief that Pacific students need to do more than just be taught about interdisciplinary process; they need to become active participants in their own learning. A well-structured, service-learning component facilitates the interdisciplinary learning process and compels students to apply knowledge

learned in real-life circumstances. The team also hoped to use service-learning as a method to bridge the racial and socio-economic gaps that exist between Pacific's characteristically affluent, predominately white, student body and the local community's low-income racial minority groups.

For the librarian, the intent was to prove that information literacy is a discipline in its own right in an interdisciplinary course design, not just merely a personal attribute or a supplement to other discipline knowledge (Johnson & Webber, 2006). In order to do so, collaboration between teaching faculty and librarians must be fostered in a meaningful way. In particular, teaching faculty and librarians should have complementary and equal roles in helping students become critical thinkers and life-long learners. With these objectives in mind, the team's first assignment was to select a community organization that serves low-income, racial-minority groups as its project partner.

CHOOSING A COMMUNITY PARTNER

The team received several recommendations from the Sociology faculty who have extensive experience working with local community organizations. After making initial contacts and site visits, the team selected the Asian Pacific Self-development and Residential Association (APSARA), a Cambodian refugee community organization, as its project partner. The team chose to partner with APSARA because:

- APSARA already has several programs in place; each has a good number of continuous participants.
- Compared to the other non-profit community volunteer organizations, APSARA is more established in terms of organizational structure and management. It is able to provide one staff member as the site coordinator to work with the project team.

- APSARA has collaborated with Pacific on various community projects in the past.
- The APSARA facility is located in the residential community, which has the capacity to host training and the potential to maintain computer equipment.

Both the Pacific team and APSARA agreed that the project should focus on the 50 English-speaking, Cambodian-refugee K-12 students who currently participate in the APSARA after-school program to avoid language barriers as none of the Pacific team faculty can speak Khmer.

NEEDS ASSESSMENT

To further understand the needs of these school age children, a focus group was conducted at APSARA's facility. Participants of the focus group were ten youth leaders (high school students who were tutors of APSARA's after-school program) and one youth counselor. In addition, all children were asked to bring a one-page survey to their teachers to complete. Sample questions of the survey included identifying areas where individual students needed help in achieving academic excellence and websites which would be useful for the student. Both the focus group and the teacher survey found that the majority of these children seldom visit their local public libraries mainly due to the lack of transportation. Their parents are either too busy making a living or do not own a car. Because they live in a neighborhood that is considered unsafe, taking public transportation to local public libraries is not an ideal option for them. However, they still seemed to prefer their local public libraries over their school libraries. Reasons for the preference include the fact that public libraries have more resources and are open longer hours. Contrary to the stereotype of "Asian computer whiz kids," more than half of these children do not have computers at home. Asian children of low-income refugee families are as

much excluded from resources and opportunities as children of other low-income populations in the United States. Although the children had no problems speaking or understanding daily English, children in lower grades were not fluent in academic/formal English. This is because their parents speak Khmer at home with them. The lack of academic English skills was reflected in the focus group discussion and in the teacher survey. According to the teacher survey, many children were considered low achievers in school. One reason for the low academic achievement, as indicated by APSARA's youth counselor, was a lack of role models to inspire them. Due to years of civil wars in their home country that turned them into refugees, many parents of these children have limited formal education.

To avoid duplicating the existing after school tutoring program at APSARA and based on the findings of the needs assessment, the project team affirmed that the project should focus on general information literacy and computer skill instruction rather than subject specific instruction or homework help. To solve the transportation issue, the project team added "finding ways to bring resources to the children at APSARA" as a new project objective. The idea of creating a web portal that links together existing K-12 educational resources on the web was conceived. To resolve the issue of lacking computer access at home, APSARA explicitly expressed its wish for Pacific to provide computer equipment and expertise to set up an on-site computer laboratory at APSARA.

In January 2006, the project was funded through an internal grant at Pacific. Tasks funded include: developing a training plan and training materials; recruiting and training student volunteers; creating a digital library; performing on-site testing; and, evaluation. Equipment purchases, however, were not funded by the grant. The project team had to pursue other venues to provide needed computer equipment: one option was to obtain Pacific's surplus computer

equipment as a gift donation to APSARA; the other option was to pursue other grant opportunities to fund the computer equipment.

LITERATURE REVIEW

To provide the project with a strong theoretical foundation and to validate pedagogies applied to its project design, an extended review of library literature and education literature was conducted.

Service-learning and Information Literacy

Service-learning is "a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development" (Jacoby, 1996, p. 5). The concept of service-learning in the United States has a very long history. It was derived from the land-grant university movement of the 1860s, John Dewey's educational philosophy of the 1930s, the Truman Commission on Higher Education's defining higher education as for the public at large, and the campus participation in the 1960s Civil Rights Movement (Arches, Darlington-Hope, Gerson, Habana-Hafner, & Kiang, 1997; Elwell, 2001; Schaeffer-Hink & Brandell, 2000).

Today, service-learning programs are merging two important historical American traditions: service to the community and the experiential approach to pedagogy (Waterman, 1997, p. 2). Supporters of service-learning believe that service-learning can "intensify the level of intellectual effort students invest, drawing students closer to the course content that they are supposed to be studying in the first place" (Enos & Troppe, 1996, p. 158). However, Enos & Troppe (1996) also point out that not all in academe are in favor of service-learning. Opponents fear that service-learning will dilute academic objectivity and thoroughness.

Despite the doubts, service-learning has been widely practiced as pedagogy in many disciplines of higher

education including—but not limited to—business, nursing, dental hygiene, social work, engineering, teacher’s education, and psychology (Childs, Sepples, & Moody, 2003; Jamieson, 2002; Kretchmar, 2001; Lamb, Swinth, Vinton, & Lee, 1998; Lautar & Miller, 2007; Lemieux & Allen, 2007). Nevertheless, its use in situations outside of specific discipline-oriented courses has been less common.

ACRL defines information literacy as “a set of abilities requiring individuals to recognize when information is needed and [to] have the ability to locate, evaluate, and use effectively the needed information.” (ACRL, 2000). Despite its wide acceptance by academic librarians, critics like Shanbhag (2007) argues that this definition lacks contextual relevance. To make information literacy relevant to students’ learning, librarians need to provide information literacy instruction in a context other than that of merely a research topic or theme. Simmons (2005) urges librarians to look beyond current ACRL Standards and looks to genre theory as a framework for a critical approach to information. She recognizes that to earn a respect and a rightful place in undergraduate curriculum, “information literacy instruction should infuse all instruction instead of being an add-on.” (Simmons, 2005, p. 300).

Wards and Riddle, on the other hand, look to service-learning as a framework for an expanded idea of information literacy. Although in his 2001 article Ward strongly encouraged that information literacy be moved away from campuses into local communities to avoid the sense of disconnectedness and artificiality, the adoption of service-learning into information literacy instruction in the United States is still rare and often limited to library school students (Ward, 2001). In his theoretical article, John S. Riddle made a compelling argument that the pedagogies of both information literacy and service-learning can benefit from mutual exploration. He further identified three possible models of applying service-learning in

information literacy: the Learning Process Model; the Course Objective Model; and, the Subject Content Model (Riddle, 2003). The Subject Content Model emphasized simultaneous and reciprocal “learning” and “teaching” so that the most effective kind of lifelong learning is achieved. One example given was the training and use of students to provide reference and instruction services (Riddle, 2003, p. 77). This model’s greatest advantage is that not only do students improve their information seeking skills, but they have to become an information “expert” themselves to be able to effectively provide assistance and instruction to their peers or to the local community. Additionally, the combination of simultaneous learning/teaching and community service provides an invaluable opportunity to address such issues as the digital divide, information inequality, and freedom of information.

Collaborative Teaching

The concept of collaborative teaching, or team teaching, has been around since the 1950s. It is frequently used in higher education as a method to promote interdisciplinary learning (Shibley, 2006). A team-taught class that actually brings faculty from multiple disciplines into the classroom together can create a conversation of diverse perspectives that students literally see, hear, and join. A literature review reveals that team teaching bears both merits and drawbacks. A team taught course can, according to Davis (1995), promote the exchange of ideas among team teaching faculty, as well as expose students to multiple perspectives and a more holistic approach to knowledge. Diversity is often mentioned as a major benefit of collaborative teaching; nevertheless, Schamber (1999) perceived diversity among collaborative teaching team members as a double-edged sword—it can be a major benefit in applying a diverse approach in dealing with students and other issues, but can also be very problematic in terms of daily operating and decision making. For example, it actually takes more time to teach as a team

than to teach alone, especially in the course planning stages. Another common criticism about team teaching is the loss of individual autonomy and flexibility (Davis, 1995). Based on Wenger & Hornyak (1999), there are three basic team teaching models—sequential, distinctions, and dialectic—each with its unique learning objectives. The most straightforward model is the sequential model where faculty members take turns lecturing about specific topics for a specific period of time. The main focus of the sequential model is knowledge acquisition and comprehension. It is best suited when the subject specialties of the team teaching faculty members are very different, where an in-depth dialectic exchange or discourse among faculty is not practical. In the sequential model, each faculty member is the expert for the topics he or she lectures.

Peer Mentoring

Like service-learning, mentoring is also an educational pedagogy to enhance student development and academic achievement. Aside from research reports on mentoring's positive link to the academic achievements as well the self-esteem of K-12 students (Dondero, 1997; King, & etc., 2002), case studies also showed that if combined properly, service-learning and mentoring can become a great education tool (Cashel, Goodman, & Swanson, 2003; Wells & Grabert, 2004). Traditional mentoring, such as the Big Brothers and Big Sisters program, often matches at-risk youths with mature adults. However, since the 1990s, more and more programs employed a creative variation of the approach by training high school students to mentor or tutor elementary school students. For example, APSARA's after-school program, a city funded homework tutoring program, pairs off high school students with students in elementary schools. Case studies such as the community tutoring program at Edinboro University in Pennsylvania, a sixty-hour volunteering-for-academic-credit program that trained and sent college students into the local community as

literacy tutors, showed significant breakdown of social stereotypes between the college students and the community people being tutored (Fleischauer & Fleischauer, 1994). Other field studies also provide compelling evidence demonstrating that both mentoring and peer training are powerful ways to reach children and teens (Richman, 1998; Schneider, 1995). These examples enticed the project team to consider the possibilities of blending cross-age mentoring with service-learning.

Cascade Training

The "Cascade" training model (a.k.a. the "training of trainer") as described by Gilpin (1997), has been widely used in both teacher education and vocational training. In this approach, "one group trains another group who then goes on to train others, so that the educational benefit is supposed to 'cascade' downwards" (Bax, 2002, p. 166). The advantage of this approach is that it can train many teachers/trainers quickly and cost-effectively. The disadvantage is that the quality of training received may not be consistent. Fully aware of its limitation, the project team still believed that the cascade training model was a desirable strategy, when combined with peer mentoring, to effectively transfer knowledge from one age group to another. The peer trainer/mentor could fulfill the need for a role model as indicated in the needs assessment.

PROJECT DESIGN AND IMPLEMENTATION

The literature review affirmed the project team's decision to use service-learning as the key pedagogy. It further convinced the project team that it would be beneficial to employ other educational techniques such as team teaching, peer mentoring, and cascade training into the project design.

The team, in consultation with APSARA's site coordinator, developed a 15-week curriculum plan that

highlights various information literacy topics and basic computer skills (Appendix A). In addition, two teams of Pacific students were recruited based on their educational backgrounds and interests. One team was trained to become mentors/trainers for information literacy and computer skills. The other team, mainly computer science students, focused on computer equipment installation and on the design of an electronic library web portal.

Training Structures

Information Literacy Training

-- a Three-tier "Cascade" Training Model

Tier 1: Pacific faculty train Pacific students.

This team of Pacific students was recruited and trained as trainers/mentors to high school students in information literacy and computer skills. Under the guidance of the three Pacific faculty members, Pacific students also developed training materials and strategies suitable for high school students. In addition, Pacific students also received inter-cultural communication training.

Tier 2: Pacific students train high school students

Pacific students taught high school students information literacy and computer skills as well as served as mentors and role models for the high school students. They also guided high school students in developing training materials and strategies suited to teach younger children.

Tier 3: High school students teach younger children.

As a part of the learning and teaching experience and under the supervision of university students, high school students applied what they had learned to teach younger children in their communities.

With the help of the site coordinator, the project's instruction schedule was built into APSARA's existing

after-school program. The Pacific team faculty members would team-teach Pacific students two hours per week between Mondays and Thursdays at the University Library's classroom. The Pacific students would then travel to the APSARA site to conduct the 2nd tier of training/instruction on Fridays to the high school students. The 3rd tier of instruction was conducted by the high school students the week after they received their instruction as part of their daily after-school tutoring to the younger children.

Electronic Library Developer Training

Under the direction of the project team's computer science professor, this Pacific student team (mainly computer science students) learned how to install computer equipment and how to develop an electronic library website. The electronic library website was designed to utilize existing Internet resources and open source tools, with appropriate modifications as necessary. Additional communication and collaboration tools, such as web resource selection and linking tools, were designed and implemented to enable continuous update of Internet content. System design documents, original code, and modified tools were maintained in a format suitable for project site redistribution and installation.

Purchasing Computer Equipment

The constraint of the Pacific internal grant forced the project team to look for other venues to obtain needed equipment. The generosity of the former Library Dean to donate two surplus laptop computers enabled the project to get off the ground. However, it was far from APSARA's wish for a permanent on-site computer laboratory. The two partners identified and pursued a private foundation grant that offered technology funding to community based organizations. For this grant application, APSARA became the main applicant and Pacific was its partner. This collaboration successfully secured funding specifically for computer hardware and software.

On Site Computer Equipment Installation and Testing of the Electronic Library

The electronic-library development students worked with the project team and the community partner to test and evaluate the deployed prototype under actual usage conditions. Evaluation results were used to identify upgrades and modifications to the tools and content, when deemed necessary to improve the ability of the system to support project goals. Modifications were implemented and deployed following best practices for software development as defined by the computer science professor. Site testing was also used to provide evaluation data, which was documented and included in disseminated project results. As part of the final completion, the electronic-library development students added an editing interface, which allows non-technical users to modify the site list and categorization stored in the database. This new interface would allow APSARA staff to keep the system current and relevant, without a need to request continual assistance from Pacific. (Screenshots of the electronic library web portal is included in Appendix B.)

EVALUATION

The design of this project incorporated evaluation as an important component -- it served as a critical tool for project management, providing a frame of reference to keep the project on schedule, providing feedback on program design and quality, as well as gathering evidence of clear and measurable outcomes. It included both quantitative and qualitative assessments:

Quantitative Assessment

Two sets of pre- and post-tests were developed for high school and Pacific students respectively. These students were asked to take a pre-test to determine each student's information literacy as well as technology competence level before entering the training program. At the end of the information literacy

training, student participants were given a post-test. The maximum score for each test was 100 points. Individual progress was measured by the differences in scores between pre- and post-tests. In addition, at the end of each training unit, students were given a quiz or an assignment to evaluate whether they had achieved targeted learning outcomes.

The results of pre- and post-tests showed that Pacific and high student who took both pre- and post- tests improved their scores between 6~78 points. However, these differences should be read cautiously because of the small sampling sizes. Although all Pacific students completed both tests, only half of the high school participants took both pre- and post- tests.

Qualitative Assessment

Students' information-seeking and technology use behaviors were closely observed and documented by trainers in each training tier to serve as a tool to evaluate students' intellectual comprehension of information and technology. As an assessment of the service-learning component, participating Pacific students were also asked to submit a reflective report on their understanding of their civic engagement in addressing issues of information "haves" and "have-nots". Similarly, participating high school students were required to submit an essay documenting their learning experience.

In their reflective reports, Pacific students expressed that they had learned to "embrace different cultures" and to appreciate the resilience of the people within the APSARA community. One Pacific student wrote "This project opened a huge door for me. It made me realize how important it is to reach out to these people as well as having these people reach out and spread their culture to others." The project also helped them realize their own competency (or lack of competency) in relation to basic information literacy and computer skills. "I thought I knew all I needed to know about computers, but I learned about I must never assume I

know everything, because, chances are, I don't," wrote one Pacific student. Another student reflected in her report, "I benefited from the reviews on referencing citations and library searches. As a college student, I realize that trying to teach others things that I know, or think I know, reinforces information and helps me in my own academic endeavors." High school students expressed their gratitude to the time spent with Pacific students and different skills (computer, library research, and tutoring) that they have learned through the project. A 10th grade sophomore wrote "You have taught me many things new ..., but what I remember that is excellent is that you take your time teaching all of us."

As for the younger children, they were asked to work as teams to develop a PowerPoint presentation to describe their learning experience and to demonstrate their computer skills. Contrary to APSARA administrators' initial concerns regarding cyber predator and Internet safety issues for younger children, Internet safety was the most popular topic younger children chose to include in their PowerPoint presentations. This demonstrated that younger children do understand the importance of cyber safety.

Additionally, the overall project operation was carefully evaluated throughout its development. The librarian was responsible for the oversight of project implementation, including adjustments of the objectives and schedules and reallocation of resources if needed. This evaluation process allowed for the early detection and timely correction of any problem areas that might have arisen.

OPPORTUNITIES AND CHALLENGES

The project proved to be a sustainable model that benefits both the university and the local community. For the university, this model provides motivation and incentives for university students to actively engage in information literacy and technology learning as both

trainees and trainers in a cross-cultural and cross-socio-economic environment. For the local community, this model provides a sustainable approach to bridge the "Digital Divide" commonly found in disadvantaged groups.

Through a cross-disciplinary collaboration in curriculum design and team teaching among the faculty of Computer Science, University Library, and Ethnic Studies, this research project expands the incorporation of service-learning and information literacy instruction to a completely different level. Another unique aspect of this project is its three-tiered approach to training. The three-tiered structure combines the traditional "Big Brother, Big Sister" mentoring concept and "cascade" training model into a modified service-learning model. Field studies provide compelling evidence demonstrating that both mentoring and peer training are powerful ways to reach youngsters and teens. The Pacific team's experience was consistent with this evidence.

While the Pacific team's basic strategy was successful, the project revealed many specific challenges resulting from the interdisciplinary subject matter, the communication across multiple cultures, and the different comprehension levels of multiple age groups.

- Tiered Peer Training – The tiered peer training model does not manage itself. The project team assumed each tier could transfer information appropriately, although the literature review suggested one major drawback to a cascade-like training structure is that the quality of training may not be consistent. The project team's solution was to introduce periodic teaching review/critique at both Tier 2 and 3. Key lessons learned for future projects include incorporating more training on how to teach and more oversight of the curriculum development for Tier 3 students.
- Curriculum Development and Design – The project team underestimated the time needed for

curriculum development and did not include a curriculum planning phase into the project schedule. Although the three Pacific faculty members are experienced in teaching college students, they are not familiar with K-12 teaching, especially at finding a balance between structured and flexible curriculum design. For future projects, the inclusion of a faculty member with K-12 teaching expertise is highly recommended.

- **Diverse Faculty Disciplines** – Pacific faculty members came to this project with differences in communication styles, project expectations, and level of commitment that led to an inconsistency in how curriculum was developed and delivered at Tier 1 level. Projects of this sort, although in accord with Pacific's mission and institutional priorities, are not typically considered scholarship, and therefore, do not translate into long-term credit for promotion or tenure. Due to differences in departmental expectations, not every academic unit in Pacific is willing to offer faculty members extra incentives (e.g. reduced course load) for participating in interdisciplinary collaboration. This causes faculty to reduce their commitments when other priorities arise. The success of an interdisciplinary project or course depends greatly from the onset on clearly defined individual roles and responsibilities, as well as honest communication about compensation expectations. The project team's experience confirmed that choosing a collaborator based on the willingness to invest the time necessary is more desirable than on the collaborator's amount of experience (Shibley, 2006, p. 274).
- **Student Motivation** – Although both Pacific and high school student trainers were compensated for their time and effort, it was not enough to prevent a fall off in attendance during the course of the project. We believe that the best motivator would be the academic credit earning option.

- **Community Partner's Organizational Culture** – Although by comparison, APSARA is rather established in terms of a volunteer-based organization, Pacific faculty still had difficulty understanding its organizational structure and culture. This resulted in information not always reaching the correct individuals and unexpected (out of scope) requests for assistance and funding from APSARA. The desire to be included in Pacific's institutional software license and the request for computer equipment were just two of many examples. Fortunately, we were able to overcome differences in expectations and work together for alternative solutions.

CONCLUSION

The project team managed to overcome many, if not all, institutional barriers and socioeconomic gaps it encountered in implementing the project. The project team was able to connect personal interests and departmental goals to university-wide initiatives and institutional priorities. The pilot project's ultimate value is that it benefited all parties involved: Pacific faculty members attained new understanding of the role of experiential learning and cross cultural studies; APSARA received computer equipment and the necessary training to sustain the program; and, Pacific students gained information literacy and computer skills that would be useful throughout their lifetimes, as well as the personal growth found in helping an underprivileged community. Cambodian students learned valuable information literacy and computer skills and found role models both within and outside of their own ethnic community.

The project team hopes its cross-disciplinary, cross-culture service-learning approach, with further improvements (as discussed in Opportunities and Challenges), can be a model for others who are considering similar endeavors to facilitate collaboration between universities and their local communities, as

well as to build a stronger partnership between librarians and teaching faculty in undergraduate education.

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APPENDIX A: CURRICULUM OUTLINE

Unit One: Information Literacy Skills – High School Youth Leaders

Lesson One: How to Distinguish Good Information from Bad Information

- Pre-test
- Use a real life example (i.e. buying a car or buying a video game) to show how to evaluate information (print or web) using Authority, Bias, Currency, and Accuracy as criteria.
- Show real examples to help students understand scholarly journals vs. popular magazines.
- When to use what type of material (flow of information)

Lesson Two: Be a Good Researcher

- Use an interesting topic (i.e. how to apply for colleges) to demonstrate research steps.
- Be aware of plagiarism and copyright.
- Remember to cite sources.
- Hands on exercise on citing sources

Lesson Three: A Guided Virtual Tour of the Stockton-San Joaquin Public Library and Pacific Library

- Give students a general tour of the two libraries' websites and compare the similarities and differences between the two libraries.
- Highlight unique services like online catalogs, request a book online, make an interlibrary loan request, and ask a question online.
- Help students fill out a public library card application if they don't have a card yet.
- A Scavenger Hunt for students to find information from the two library's websites

End of Unit Evaluation: Observing Youth Leader teaching

Unit Two: Computer Literacy Skills

Lesson One: Computer 101

Assuming the high school students have already had basic computer skills; therefore, the lesson is focused on how to help them to train younger kids the very basics of computer.

- Design a "name the parts" game to teach younger kids different parts of computer and their functions (the screen, the mouse, the tower, the DVD drive...).
- Use brain storming technique to design a group exercise to come up with a list what computer can do for them.
- Basic computer related terminology
- Basic keyboarding
- Hands on keyboard practice

Lesson Two: Computer Software Training

- MS Windows basic knowledge
- MS Word
- MS PowerPoint
- Other educational software
- Practice, practice, and practice

Winter Break

Lesson Three: Internet Basics

Assuming the high school students have already known Internet basics; therefore, the lesson is focused on how to help them to train younger kids the very basics of Internet.

- Internet terminology
- Internet etiquette (Netiquette)
- The Good, the Bad, and the Ugly about the Web
- Understand URL
- How to protect yourself while surfing on the web
- Web based free mail – how to sign up for one
- Quiz – Do’s and Don’ts of the web
- Homework – send an email to your favorite teacher to say hello

Lesson Four: Web Searching Techniques

- Key word search vs. Browse search
- Boolean logic
- Other search tips
- Find your school and school library’s websites
- Once again – how to evaluate information found on the web
- Hands-on Internet scavenger hunt (the emphasis is on locating answers to specific questions on the web and how reliable the answers might be)

Lesson Five: Advanced Web Skills

- specialized databases
- Search How to find images (image storage)
- How to download music
- Basic Website or weblog construction
- Copyright, Copyright

End of Unit Evaluation: Observing Youth Leader teaching

Unit 3: Digital Library Especially for You

Lesson One: Digital Library Basics

- A virtual guided tour of the e-library
- Name your e-library contest

Lesson Two: Reference Tools in the Digital Library

- E-dictionary, e-encyclopedia
- E-translator
- E-converters (currency, metric...)
- Free e-books

Lesson Three A: Just for Teens

- Career sites
- College related sites
- Sites about Asian Americans

Lesson Three B: Just for Youth

- Homework help sites
- Free educational game sites

Wrap up & Post-test

APPENDIX B: THE ELECTRONIC LIBRARY

The electronic library is a dynamic website, which runs on a server installed in the new APSARA computer laboratory. The system was constructed entirely from open source components (Apache web server, PHP/HTML programming and a MySQL database). The electronic library was designed as a navigational aid; websites included in the electronic library were categorized by age group and subject. The list of sites

was created by combining recommendations from Association for Library Services to Children with recommendations made by school teachers and a APSARA youth counselor during initial data collection. This list was then categorized into subjects by the APSARA high school students (tier 2) as part of their training. At the end of the project, the electronic library had 142 sites categorized into 30 subjects as follows:

