Expanding Flexible Models of Service Learning in Information Systems Curricula

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Abstract

Educators in information systems continue to be challenged with a decline in the enrollment of students. The study analyzes an approach in community engagement for attracting students into the information systems field. Focused on an analysis of a *Community Empowerment through Information Systems and Technologies* course at a major metropolitan university, this study discusses the impact of customized design of information systems outreach. Findings of higher engagement and higher impact of students continue to indicate the importance of flexibly integrating service learning courses in information systems curricula, but also is beginning to indicate improved interest of non-information systems and information systems students in the information systems field. This study may benefit educators considering further adoption of service learning as a core course if not a marketable feature of information systems curricula for undergraduate students.

Keywords: Community Engagement, Information Systems Education, Non-Profit Organizations, Outreach, Service Learning

1. BACKGROUND

Enrollments of students choosing computer science or information systems as a field of study continue to decline in the country (Russell, Russell and Pollacia, 2007). Estimates of the decline are from 75% to 25% in schools of information systems and computer science (George, Valacich and Valor, 2005). From 2005 to 2007 the decrease of students entering computer science is greater than the decrease from 2001 to 2005 (Zweben, 2005). Generation of degrees in computer information systems and computer science decreased from 15,000+ granted in 2001 to 10,000+ in 2007 (Zweben). Educators in schools of computer science and information systems are confronted with the decrease in enrollment during a concurrent and increased demand by industry for information systems and computer science undergraduate students (Longo, 2006).

In considering enhancement to curricula in order to increase the number of students in information systems, educators could improve the currency of the curricula by ensuring that courses in the schools correspond to the demand by industry (Granger, Dick, Jacobson and Van Slyke, 2007, p. 306-307). They could alternately or concurrently improve the existing curricula by integrating other disciplines or secondary programs of study (Granger, Dick, Jacobson and Van Slyke, p. 307). These programs could increase the number of declared information

systems students and general non-information systems students who may become declared students in the schools of information systems. Such programs may be marketed in partnership with other schools of a university. Educators in information systems might furnish a new positioning of their schools so that general non-information systems students re-consider information systems as a field of study.

Integrating secondary disciplines in curricula of information systems might include service learning programs. Service learning is a credit-bearing educational experience that engages students in meaningful organized projects that help in meeting the issues and needs of non-profit organizations (Bringle and Hatcher, 2000). Service learning enhances the experiences of the students in the needs of the organizations and of responsible citizenship in society. Learning is improved in introspective perceptual and cognitive reflection of the service by the students (Dunlap, 2006 & Petkus, 2000). Service learning is an existent program in about 1,000 universities in the United States (Spence, 2004). Literature indicates that methods of service learning are applied to diverse disciplines (Zlotkowski, 2001) that include information systems (Guthrie and Navarrette, 2003). Methods can consist of projects based on content of a course, exploration of issues in non-profit organizations, problems of and solutions in the organizations, research studies of society, and special services of the university (Heffernan, 2001). Service learning projects in an information systems course can empower students from learning the problems of the non-profit organizations and the potential solutions through information systems. Cognitive engagement on the projects can lead to reflective citizenship and responsible if not social sensitivity of the students (Kolb, 1984) as individual contributors or members of teams. Professional soft skills, such as partnership, problem solving, socializing, team-playing and thinking, learned on projects of service learning are marketable to employers desiring graduates in information systems who are not purely technical (Janicki
and Kline, 2004 & Tarracone and Luca, 2002).

Studies in the literature clearly abound with the benefits of projects in service learning courses (Berson and Younkin, 1998) that are inevitably altruistic in nature. The benefits of these projects in service learning courses in information systems curricula are dependent on the customization of the courses to the organizations, schools, and students (Lawler and Li, 2005). Design of service learning courses for learning of the students and for relevant service to the organizations is different if not difficult for educators than established courses in the information systems curriculum (Howard, 1998; Rosenberger, 2000; & Wei, Siow and Burley, 2007). Experimentation is frequent on projects in information systems service learning courses in order to have learning and service. Information systems service learning courses due to enrollment or non-enrollment conditions may include diverse non-senior or senior students who may or may not be majoring in information systems and may not have immediate skills in systems, which might impact outcomes. Flexibility in designing information systems courses in service learning continues to be cited as important in the benefits and outcomes of projects that may impact not only the extent of learning and service of students but also their interest in learning more about information systems. Few studies have analyzed the flexibility of information systems courses in service learning in schools of information systems.

2. INTRODUCTION

In this study, the authors analyze learning and service in a custom designed *Community Empowerment through Information Systems and Technologies* course, at the Seidenberg School of Computer Science and Information Systems of Pace University in New York City, in conjunction with the Center for Community Outreach of the university. The course engages students in a project for helping the Association for the Help of Retarded Citizens (AHRC NYC) in the development of an intranet portal system. The goal of the project is for internal counselors and administrators to post information on events in the offices of the organization and for individuals with intellectual disability to potentially post and share personal art on the portal, problems at AHRC NYC but a project with real requirements for serious students (Martincic, 2007). The course began in the fall semester 2007 with a group of students and continued with another group in the spring 2008 semester in the information systems curricula of the school,

but the other schools of the university could have non-information systems students in the course for the convenience of the students, as such courses are considered core knowledge requirements of the university. This course continues flexible *Web Design for*

Non-Profit Organizations courses in service learning initiated by the principal author of the study in the school of information systems in 2003 – 2004.

The *Community Empowerment through Information Systems and Technologies* course in the 2007 and 2008 semesters consisted of 41 students, 3-5 individuals of AHRC NYC with intellectual disability, and 3 administrators of AHRC NYC. The students were aged 18-20 (29%), 21-22 (43%), 23-24 (21%), and 25+ (7%) and were 64% female and 36% male in the consolidated semesters. They were 24% freshman, 48% sophomore, 21% junior, and 7% senior students. They were largely not exposed to individuals with intellectual disability or to bona fide service learning (88%) when they joined the course. Few of them in the 2008 - 2007 semesters (9%) were initially interested or majoring in computer science or information systems, in contrast to those in 2005 (41%) and 2004 – 2003 (56%) in *Web Design for Non-Profit Organizations*, as indicated in Table 1.

The principal author of this study who is the instructor of this course in 2007 and 2008 and of the courses in the 2005 – 2003 semesters continues to be confronted by the mix of students, which is continuing to be lower if not non-existent in the number of information systems students. Though the number of non-information systems students in the course in the 2007 and 2008 semesters contributes to a higher number of students counted by the school of information systems, it is difficult designing projects for students not having education in information systems, other than a fundamental introduction to computers, so that they may effectively help non-profit organizations with information systems. The lower number of undergraduate students in the semesters was moreover not initially interested in the service learning theme. The study analyzes the design methods of the instructor for managing such a mix of non-information systems students in this information systems service learning course. This study

contributes evidence that flexibility in the design methods is both facilitating outcomes in learning and service with information systems and enabling a foundation for enticing non-information systems students into further study of information systems.

3. FOCUS OF STUDY

The focus of the study is to analyze the impact of customizing the design of the *Community Empowerment through Information Systems and Technologies* course on engaging students in service and in a solution of information systems. The research from this study contributes input into designing core information systems service learning courses for non-information systems students so that not only the non-profit organizations may be helped by the projects in the courses, but also the students might be further interested in information systems. This study expands earlier research on reflections of students on service and on information systems at Pace University. The research of this new study may be helpful to information systems instructors at other institutions in evaluating flexible methods, for integrating service learning courses into curricula that eventually might increase the number of students in information systems as a field of study, and for otherwise reinvigorating information systems teaching. This study is timely.

4. CASE STUDY

Course

Community Empowerment through Information Systems and Technologies is a course for 3 credits in the Seidenberg School of Computer Science and Information Systems of Pace University that consists of the below objectives and outcomes:

- Describe comfortably the concept and the practice of community engagement;
- Describe the functions of the Association for the Help of Retarded Children (AHRC NYC) in serving individuals with intellectual disability in downtown New York;
- Explain and example interactions encountered by AHRC NYC in serving individuals with intellectual disability in an economically constrained cli-

mate in the city and the state New York and needs of the individuals in interactions with society;

- Implement a project furnishing the potential of solutions of Web-based information systems and technologies that may help AHRC NYC in orchestrating an information systems strategy; and

- Initiate informed discussion of issues and needs of practicing service in a democratic society for others in the society.

The instructor discussed the outcomes with the group of students in the fall semester and the new group of students in the spring semester respectively in the first week of the course, and the students met the director and administrators of AHRC NYC for orientation on problems in the second week, and counselors and a few of the individuals with intellectual disability in the third week of the course. From the fourth to the twelfth week of the course, the students analyzed, designed developed and implemented prototypes of an intranet portal system with the individuals and the administrators, as indicated below:

Week 1: Community Service in Downtown New York City with AHRC NYC – Student Biography Report
Week 2: AHRC NYC in New York City
Week 3: AHRC NYC in the Community
Week 4: Community-Centric Principles of Web Design - Analysis of AHRC NYC Requirements – Intranet Portal System – Formation of Student Teams –Student Book Review of Clinton, Bill (2007), *Giving: How Each of Us Can Change the World*
Week 5: Analysis of AHRC NYC Requirements – Intranet Portal System - Storyboard
Week 6: Design of Intranet Portal System – Paper Prototype
Week 7: Design of Intranet Portal System –Paper Prototype
Week 8: Development of Intranet Portal System – Electronic Prototype – Student Engagement (Log) Report and Mid-Term Reflection Report
Week 9: *Day of Service and Technology Open House at Seidenberg School*
Week 10: Development of Intranet Portal System – Electronic Prototype
Week 11: Development of Intranet Portal System – Electronic Prototype

Week 12: Implementation of Intranet Portal System – Electronic Prototype – Student Book Review of Kennedy, Caroline (2002), *Profiles in Courage for Our Time*
Week 13: Presentation of Intranet Portal System to AHRC NYC Management – Proposed Next Semester Strategy
Week 14: *Service and Technology Show at Pace University* – Student Engagement (Log) Report and Final Reflection Report

The course was held half of the semesters at AHRC NYC and half at the university. The course integrated the *Blackboard Learning and Community Portal System* (Version 6.3.1) for the posting of engagement and reflection reports of the students at mid-semester at week 8 and at final semester at week 14.

Project

The emphasis of the project was engaging the students as consultants in dialogue with the individuals and the administrators of AHRC NYC, in order to design an intranet portal system. The instructor began the project by discussing community-centric principles of Web design based on *Planning and Designing Effective Web Sites* (Conger and Mason, 1998) and on best-of-class design practices of non-profit organization Internet sites. The students evaluated designs of other non-profit Internet Web sites based on the principles, which was feasible for non-information systems students. From this foundation, the students initiated interactions with the administrators on the content and functionality of the portal system, and from the interactions the students learned the requirements, as depicted in Figure 1. This design defined the engagement project in the fall 2007 and spring 2008 semesters.

To develop the project, the students formed into small groups for either developing the portal system or for helping in marketing the project, service and system at informal *day of service and technology open houses* at the organization and the school and at formal *service and technology shows* at the university. Formation was based largely on the interests of the students and not on skills in systems. The instructor helped the students developing the prototype of the system learn prototyping software published at www.nvu.com, inasmuch as the outcome in the semesters was prototyping the poten-

tial of the system and of other technologies to AHRC NYC. The students in the fall and spring semesters learned the software in less than one class – 3 hours, though they lacked the skills, and they developed paper prototyping of the system by mid-semesters and electronic prototyping shortly thereafter. Those students helping in the marketing of the system developed initial public relations plans and open houses by mid-semesters. Throughout the initiatives, the individuals and administrators of AHRC NYC were participants on the teams, and the students were proactive with and responsible to the other students, the instructor, and to the administrators of the organization (Lea, Stephenson and Troy, 2003).

The students were empowered by the instructor to continue interactions with the administrators and the individuals of AHRC NYC in the implementation of the prototyping and the public relations planning. Functionality of the portal was improved in electronic prototyping by the development students in the fall semester, and further functionality, such as information scanning, was improved in prototyping and included by the new students in the spring, as the development students in the spring were as equally teachable in the publishing software as those in the fall. These students in the spring included other functionality of information searching tools. They integrated the full functionality of the prototypes of the portal system at the end of the spring semester. Those students in the spring and fall marketing the project, service and system initiated formal shows by the end of the semesters. To formally finish the project at the end of the semesters, the teams presented the potential of the prototypes of the system to the management of AHRC NYC, which responded positively, and at the end of the spring semester transitioned the prototypes to students in the fall semester 2008, in order to turn around the full functionality of the system by 2009.

Reflection of Students

Throughout the design and development of the portal system, the students in the spring 2008 and fall 2007 semesters evaluated their engagement experiences with the individuals with intellectual disability and the administrators of AHRC NYC and with other students on their teams. The students posted learning perspectives and reflections (Bo-

ber and Dennen, 2001) on the service and on the system on the discussion board of the *Blackboard Learning and Community Portal System*. They posted reflection reviews on social stories in *Giving: How Each of Us Can Change the World* (Clinton, 2007), *Profiles in Courage for Our Time* (Kennedy, 2002) and in the metropolitan edition of *The New York Times*. They shared reflections with the instructor and with the other students of the semester. Summarized in the Review of Reflections of Students section of the study, their reflections were factored into the final grade of the course, with 50% for the reflections and 50% for the results of their service, and 75% of them earned a grade of A in the 2008 and 2007 semesters.

5. METHODOLOGY OF STUDY

The methodology of the study consisted of a customized perception survey of 41 undergraduate students in the *Community Empowerment through Information Systems and Technologies* course, in the fall 2007 (24) and spring 2008 (17) semesters, in the Seidenberg School of Computer Science and Information Systems, of Pace University, in New York City. The survey focused on questions on current impact of engagement and project service at AHRC NYC and potential future impact of project engagement and service at AHRC, including interest in information systems as a future field of study as a result of the project service at AHRC. The bulk of the questions were chosen from service-learning literature (Astin and Sax, 1998 & Eyler and Giles, 1994) that was also included by the authors in the earlier study of service learning in the school (Lawler and Li , 2005). The students furnished their answers on a 7-point scale from agree very strongly (6) to disagree very strongly (1) and neither disagree nor agree (0) on current impact of service and on yes or no on future impact of service at AHRC. All of the students in both semesters completed the survey, the instrument of which is in the Appendix. The methodology of this study included a review of the reflections of the students on engagement and project service at AHRC NYC. These reflections were posted by the students as Final Reflection Reports on to the Discussion Board of the *Blackboard Learning and Community Portal System* of the university. The reflections were shared by the instructor with several students in the course for confirmation and input into this study. The answers of the survey were in-

terpreted statistically by the co-author of this study, for implications to instructors in information systems.

6. PRELIMINARY ANALYSIS

The preliminary analysis of the descriptive data from the survey of the students is beginning to confirm findings from our earlier study. Current impact of engagement and project service and potential future impact of engagement and service are being indicated as high by students. Higher learning is also being indicated by the students. Impact on the improved interest of the students in the field of information systems is being indicated as not as high as the learning, service and engagement, but it is not non-existent. Overall, the impact of the course on the students is continuing to be positive.

Review of Reflections of Students

The reflections of the students of the spring 2008 and fall 2007 semesters recorded at the end of the semesters indicated increased learning and also increased interest in information systems from their projects at AHRC NYC, as sampled below:

"The course had an effect on me through the project … I would not have known of [AHRC NYC] … I feel that that the portal [system] will be important for the organization." – A.M. (Sophomore Student, 2007);

"I learned about technology in a [manner] that I would not have learned about in my other [liberal arts] courses … I would like to learn of other [community empowerment] courses like this project where I would learn more technology … because I love to help others and [technology] seems a very good way to do it." – M.O. (Freshman Student, 2007);

"I was hesitant about the project because I was informed that it would be too technical, but it was not … I will be thinking about taking other courses that are technical … I would love to do something similar to this [and I would] volunteer my time." – L.S. (Freshman Student, 2007);

"It was great to see how pleased [AHRC] was with the portal [system] that we designed for them … they were really impressed by what we [did] for them … Knowing I helped them is an experience I will never forget." – D.S. (Senior Student, 2008); and

"I refined my project management skills on the [system] … Response is we did a highly functioning and friendly [system] that will simplify their tasks … we did a rewarding thing with 21st century technology … thankful that I was on a great team." – M.S. (Junior Student, 2008).

These reflections were consistent in the positive impacts of motivated students on innovation projects noted in the literature and in the Analysis section of this study.

7. PRELIMINARY IMPLICATIONS

This new study of service learning in information systems curricula is beginning to confirm the findings of lessons learned in our other published study and survey (Lawler and Li , 2005). *The customization of community engagement from both the problems of AHRC NYC and the skills of essentially non-information systems students is contributing to higher engagement, impact and learning of the students.* The project of the course was an example of problem-based learning frequent in information systems curricula and of service learning, both of which are indicated in the literature (Bishop-Clark, 2005). The students learned problem solutions and related service with prototyped solutions. Though the course consisted of lecture by the instructor, the problems of AHRC NYC drove the course so that the students and the instructor devoted the bulk of efforts to project solutions. The flexibility of the instructor in designing the course and empowering the students for problem solution in self-formed and self-led teams enabled enthusiasm and excellence in higher engagement and learning. It increased the interests of the students in the field of information systems, so that consideration might be given to having the course introduced to students in their freshmen year when they may be undecided on a field of study.

The commitment of the individuals with intellectual disability and the administrators of AHRC NYC to the project of the Course is contributing to higher impact of the problems prototyped if not solved by the students. The students were dependent on the administrators, and the administrators were dependent on the students, in the storyboarding and the prototyping of the portal system. The inclusion of the individuals and the administrators on the teams and their interactions with the students insured continued dependencies throughout the project. The integration of the organizational staff into the teams insured a positive outcome to the solutions. This ownership of the outcomes of the project by the staff and the students enabled higher engagement, impact and learning of the students.

The dimensions of the course from diverse functionality of analysis, design, development and implementation, and project management are contributing to higher engagement, impact and learning of the problems solved by the students through information systems. Through their reflections, the bulk of the students indicated that they learned a mix of partnership and relationship management, problem solving, socializing, team-playing and thinking skills that they had not learned in other non-information systems courses in the university. They indicated that by themselves they learned the software tool published at www.nvu.com, in order to be storyboarding and prototyping a real solution of quality and of technology, and were proud of their utility of information technology. The project of the course furnished problems of an organization, such as AHRC NYC, for which the students contributed solutions as if they were already consultants if not employees in an information systems department in industry. The course in educating in professional soft skills and in software skills enabled higher impact and learning and also interest of the non-information systems students in the field of information systems.

The flexibility of course pedagogy is depending upon the energy and the initiative of the instructor in methods of pedagogy, enabling higher engagement, impact, and learning, and interest of the students in information systems. Given the inclusion of non-information systems students in the fall and spring, the instructor insured that the project framework of the fall semester fitted

in solutions tangible to the administrators of AHRC NYC and that of the spring semester fitted in further solutions tangible to AHRC NYC. The instructor insured that the project was high in interest to the mix of non-information systems students and was not purely technical. The investment of the instructor in the course was the highest of his courses in the semesters, which is indicated in the literature to be not infrequent of instructors in service learning (Langseth, 2000). Instructors might improve a course in information systems service learning by introducing more on-line tools to support the teams (Hartness, 2007), including social networking tools, so that they might be less involved in student tasks. Due to his involvement though, the instructor enabled higher engagement, impact, learning and interest of the students in information systems.

The final lesson of this preliminary study is the enabling importance of institutionalizing outreach for schools of information systems and computer science. The instructor interfaced with a center for community outreach at the university, of whom non-profit organizations, such as AHRC NYC, inquire of outreach projects. The missions of the school and of the university include publicized service learning statements that support the center, the importance of which is indicated in the literature (Prentice, 2004). These centers of outreach if sustained by universities may fund hesitant instructors with stipends that further help instructors in initiating service learning. This center for community outreach at our university was an enabler in furnishing meaningful non-profit organizational projects to the instructor, facilitating a foundation for enabling favorably high findings in the engagement impacts and the learning outcomes of the students, in this new study and in the other study (Lawler and Li, 2005). Lastly, this center was a facility for marketing the projects and courses in the information systems service learning curricula of our school to students of the university.

Summary of Preliminary Implications

The favorable outcomes of the students found from the lessons of this new study of service learning in information systems curricula is enabling an expanded foundation for helping the Seidenberg School of Computer Science and Information Systems at

Pace University in marketing the field of information systems, so that more new students might enroll in the school in 2009 – 2012.

8. FURTHER OPPORTUNITIES IN RESEARCH

The findings of a study from a relatively small sample of students on one project in one course at one school of one university cannot be generalized to other institutions without caution. However, the instructor of the course will continue to explore the findings from this study and from the earlier study (Lawler and Li, 2005) with further statistics on students in information systems service learning projects and in other courses of the school with other non-profit organizations in 2008 – 2010. The impact of information systems service learning on increasing or not increasing the number of students in the field of information systems will be evaluated further from statistics of the school and of the university in 2008 – 2010. The opportunities in research will continue to be pursued by the instructor. The Seidenberg School of Computer Science and Information Systems at Pace University will be eager to share its future findings with other schools and universities.

9. CONCLUSION

The study continues to be beneficial in finding higher engagement, higher impact, and higher learning of students from customized design of information systems service learning courses. Flexibility of instruction in the pedagogy of the courses for non-information systems students is indicated to be instrumental in engagement, impact and learning highness and is indicating growth in the pedagogy if instructors in information systems initiate interesting projects in service learning. Impact on the improved interest of non-information systems students in the field of information systems so that they might enroll in the curricula of schools of information systems is indicated to be not as high as the learning, impact and engagement findings. Marketing of information systems to non-information systems students through projects of service learning might enable further enrollment if integrated more with the overall initiatives of the school and the university. Research of the Seidenberg School of Computer Science and Information Systems of Pace University will con-

tinue in 2008 – 2010, and the school encourages instructors at other schools and universities to join us in our studies.

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APPENDIX

Instrument of Survey of Study

**Course: Community Empowerment through Information Systems and Technologies
Student Engagement and Project Service-Learning Survey**

Fall Semester 2007 _____   Spring Semester 2008 _____

DO NOT INSERT YOUR NAME ON THIS SURVEY.

I. Current Impact of Engagement and Project Service at AHRC NYC

Please circle the number indicating your consensus to the statements below:

6= Agree Very Strongly
5= Agree Strongly
4= Agree
3= Disagree
2= Disagree Strongly
1= Disagree Very Strongly
0= Neither Disagree nor Agree

1. I believe strongly in community service.
    0   1   2   3   4   5   6
Comments
_____
_____
_____

2. I had a clear definition of my community before this engagement.

    0   1   2   3   4   5   6
Comments
_____
_____
_____
____

3. I would not have taken civic engagement if not required by the core curriculum.

    0   1   2   3   4   5   6
Comments
_____
_____
_____
____

4. This engagement has helped me build a better understanding of my community.

    0   1   2   3   4   5   6
Comments
_____
_____

____

5. Following this engagement, I have a new definition of my community.

   0   1   2   3   4   5   6

Comments
_____
_____
_____

____

6. The project in this engagement facilitated civic engagement.

   0   1   2   3   4   5   6

Comments
_____
_____
_____

____

7. I feel a sense of fulfillment during the interaction with the individuals
   with intellectual disability of AHRC NYC.

   0   1   2   3   4   5   6

Comments
_____
_____
_____

____

8. I have learned more about my fellow neighbors residing within my community.

   0   1   2   3   4   5   6

Comments
_____
_____
_____

____

9. I feel that the project accomplished through this engagement did effect a
   change for AHRC NYC.

   0   1   2   3   4   5   6

Comments
_____
_____
_____

10. The development of the community is not as important as the development
    of my individual self.

   0   1   2   3   4   5   6

Comments
_____
_____
_____

____

11. My time was meaningful overall to my individual self.

    0   1   2   3   4   5   6
Comments
_____
_____
_____
____

12. I would take another civic engagement and service learning course.

    0   1   2   3   4   5   6
Comments
_____
_____
_____
____

13. I have learned more about the benefits of information systems.

    0   1   2   3   4   5   6
Comments
_____
_____
_____

14. I have learned more about the functionality of information systems.

    0   1   2   3   4   5   6
Comments
_____
_____
_____

15. I have learned more about what a professional in information systems
    might do with technology.

    0   1   2   3   4   5   6
Comments
_____
_____
_____
____

16. The project educated AHRC NYC on the potential of information systems
    in helping its individuals with intellectual disability, its counselors, and
    its administrators.

    0   1   2   3   4   5   6
Comments
_____
_____
_____
____

17. The project is improving the functionality of information systems at AHRC
    NYC in helping its individuals, its counselors, and its administrators.

       0   1   2   3   4   5   6
    Comments
    _____
    _____
    _____
    ____

18. The project is initiating further evaluation by AHRC NYC of the potential
    of information systems in helping its individuals, its counselors,
    and its administrators.

       0   1   2   3   4   5   6
    Comments
    _____
    _____
    _____

19. I have learned a better means of being an active citizen.

       0   1   2   3   4   5   6
    Comments
    _____
    _____
    _____
    ____

20. I have matured as a person along with this engagement.

       0   1   2   3   4   5   6
    Comments
    _____
    _____
    _____

II. Potential Future Impact of Engagement and Project Service at AHRC NYC

Please circle Yes or No to the following statements:

21. I now plan to become involved in my community.
    Yes   No

22. I now plan to help others who are in social difficulty in my community.

    Yes   No

23. I now plan to join a community action program or service organization
    to help others in my community.

     Yes   No

24. I now plan to contribute as an actual volunteer in my community.

    Yes   No

25. I now plan to be an active member of my community.
    Yes   No

26. I am now committed to making a difference in my community.
    Yes   No

27. I now plan to become knowledgeable of social issues facing my
    community.
    Yes   No

28. I now plan to become involved politically in my community.

    Yes   No

29. I now plan to learn more about information systems.
    Yes   No

30. I now plan to consider information systems as a field of study
    as a result of the service.
    Yes   No

31. I now plan to expand my current field of study to information
    systems.
    Yes   No

32. I now plan to apply for course electives in information systems.
    Yes   No

33. I now plan to apply as a candidate for an undergraduate degree
    or a dual degree in information systems.
    Yes   No

34. I now plan to apply as a candidate for a graduate degree in information
    systems.
    Yes   No

35. I now plan to learn about career opportunities in information systems in non-profit
    organizations.
    Yes   No

Thank you for your participation in this survey.

Source: Astin and Sax, 1998 and Eyler and Giles, 1994 (Adapted)

Table 1: Demographics of Students in Information Systems Service Learning Courses

	Fall –Spring Semesters 2003 - 2004	Spring Semester 2005	Fall –Spring Semesters 2007 -2008	Total 2007-2008
Course	Web Design for Non-Profit Organizations		**Community Empowerment**	
Organization	Community	Children's Hope	**AHRC NYC**	

	Access 1					
	Frequency	Frequency	Frequency	**Frequency**	**Frequency**	**Percent**
Demographics						
Age						
18-20	11	3	**7**	**5**	**12**	**29%**
21-22	23	16	**13**	**4**	**17**	**43%**
23-24	6	7	**4**	**5**	**9**	**21%**
25+	3	1	**0**	**3**	**3**	**7%**
Gender						
Female	20	16	**14**	**12**	**26**	**64%**
Male	23	11	**10**	**5**	**15**	**36%**
Year						
Freshman	8	4	**6**	**4**	**10**	**24%**
Sophomore	12	9	**11**	**8**	**19**	**48%**
Junior	18	10	**5**	**4**	**9**	**21%**
Senior	5	4	**2**	**1**	**3**	**7%**
Degree						
Computer Science/ Information Systems	24	11	**1**	**3**	**4**	**9%**
Non-Information Systems	19	16	**23**	**14**	**37**	**91%**
Business	7	4	**7**	**5**	**12**	
Education	1	0	**1**	**0**	**1**	
Liberal Arts	5	7	**10**	**7**	**17**	
Nursing	1	2	**0**	**0**	**0**	
Not Decided	5	3	**5**	**2**	**7**	
Experience In Service Learning						
Yes	3	2	**3**	**2**	**5**	**12%**
No	40	25	**21**	**15**	**36**	**88%**
Totals	n=43	n=27	**n=24**	**n=17**	**n=41**	**100%**

[1](Lawler and Li, 2005)

Figure 1: Portal System