

**Digital Citizenship: Expanding Information Technology Literacy
with a Service-Learning Approach
Evaluation Report
July 2001 to July 2002**

The Digital Citizenship: Expanding Information Technology Literacy with a Service-Learning Approach grant is funded by the National Science Foundation and awarded to Drake University. This project is a collaboration between Drake University and Iowa State University. Its primary goal is to work in partnership with the Drake community to identify IT skills needed by its citizens that Drake undergraduate students can provide as part of their academic pursuits. The researchers conducted numerous activities to support these goals between July 1, 2001 and July 31, 2002. First, this report will focus on the initiatives related to establishing rapport with community groups and potential partners and conducting an initial evaluation of program feasibility.

Due to the difficulty in recruiting young African American youth in fall 2001 to participate in the computer workshops, alternative strategies were employed to recruit inner city residents. Structured citizen surveys and focus groups with workshop participants, Drake students, and the Lab Coordinator, Teresa Larson, were used to analyze the data on program impact. RISE has provided assistance as needed in planning and implementing the program, survey construction and dissemination, focus group evaluation, and the collection of quantitative and qualitative data. In addition, the principal investigators presented the results at conferences and published their findings in refereed journals (Appendix A).

EVALUATION OF ACTIVITIES RELATED TO COLLABORATION & RECRUITMENT OF PARTICIPANTS:

Partners in Economic Progress (PEP)

The collaboration goal expanded the impact of the digital citizenship program by developing a collaborative relationship with community groups and recruiting underserved persons to participate in computer workshop classes. A service-learning class held in fall 2001 and a fieldwork laboratory held every term linked undergraduates to the served community. During fall 2001, the research team collaborated with PEP, a 501(c3) organization serving central Iowa's African American youth. PEP's outreach to African American youth was a good fit with the project's goal; however, difficulties arose when the youth did not regularly attend the Saturday morning computer workshop sessions. For Drake students, they were giving up a valuable part of their week to give instruction to youth who did not attend their scheduled sessions.

During an interview with Teresa Larson, Computer Lab Coordinator, she stated, "Communication misunderstandings were between our project and community leaders who were encouraging the black youth to attend. There were clashes on the periphery not in the classroom." She noted that the program setup "did not create the spirit of cooperation" that was anticipated. From her perspective, "there was not a sufficient connection with the target group" Larson indicated that the youth didn't find the skills being taught personally meaningful while they had some unrealistic expectations (i.e., wanting to be taught technical skills beyond the scope of one Saturday teaching session). The unfortunate results of not being able to build community with an off-campus partner were young African American

youth were slipping through the digital cracks, Drake students did not feel valued, and the project struggled to recruit another client base.

Polk County’s Forest Avenue Senior Center

The collaboration with the senior center proved to be a positive one. The Lab Coordinator and Drake students distributed brochures about free computer workshops while Larson gave presentations at the center to “promote the classes” (Larson, 2002). Senior citizens were solicited as a potential experimental group. The computer workshop sessions conducted with seniors went extremely well. Through Larson’s outreach, it was discovered that the senior citizens desired computer training. This connection was invaluable to the project in later months as other recruitment strategies failed to achieve expected results.

The community outreach provided many valuable insights that directed the program implementation. It was concluded that PEP was inconsistent and unreliable about providing a client base interested in computer training. Based on these results, alternative methods of recruiting underprivileged groups were employed to sustain the needs of the project. The project opted for a two-prong approach. In order to maintain the experimental design and attract a low-income racially diverse population, a mail survey was distributed to a random sample in the Drake neighborhood. In addition, the project redoubled its community-based outreach to seniors.

Drake Community Citizen Survey

Sample. In the fall of 2001, the initial sampling frame of household addresses from the urban areas in and around Des Moines was compiled from the City of Des Moines utility

billing records. It was found that the billing records had little correspondence with the Des Moines Qwest Dex telephone directory. Consequently, the Polk County Assessor's database of land parcels was used as an alternative source. There are evaluative limitations associated with a sampling frame compiled from land parcel ownership. The primary goal of the research was to sample citizens who lacked computer access and knowledge. It is very likely that the resulting sampling frame may have oversampled a higher SES population than intended. With existing databases built from utility customers or homeowners, it is difficult to sample a lower-income, digitally disenfranchised population. Targeting the survey to renters, homeless persons, or those with episodic residences also raises issues of bias.

A survey instrument was developed that assessed Information Technology Literacy (ITL) skills and attitudes toward technology and digital government (Please see Appendix). It largely mirrored Dr. Sally Beiser's class instrument with the addition of the digital citizenship and attitudes toward technology items constructed by Dr. Mack Shelley. Measures further tapped how participants gained their present level of computer training and the reasons why they used the Internet. Demographic variables were also gathered.

This survey instrument was mailed to 1900 prospective participants (1778 deliverable surveys); 167 responses were received, a return rate of 9%. The low response rate may be attributable to the use of a mailed questionnaire to solicit a low-income racially diverse population and the appearance of the envelope. The survey was mailed in a plain-white first-class envelope with the statement "Open Now!." Attempts to improve the appearance of the envelope were not permitted by the U.S. Postal Service.

The treatment group (n=66) was randomly selected from a low-income urban population. They received a mail questionnaire in addition to a brochure inviting them to

attend free computer classes at Drake University (Please see Appendix). Classes included computer and Internet basics, free e-mail services, and Internet search engines. Of the 66 members of the treatment group who completed the survey, only 11 attended the computer training workshops. The remaining (101) participants were a randomly selected control group.

Survey Results

The baseline data was collected, and the research group created a database of the survey results from the 2002 urban treatment and control groups. Participants in the ITL treatment group had significantly more frequent responses at both extremes of software use and had a significantly greater response rate at the “low skill” level for distance education. The control group had more access to, or made greater use of, computers, printers, scanners, CD-ROMs, and DVDs. Having used a computer in the workplace or at school, this group had gained more experience in word processing and the use of the Internet, especially accessing e-mail. In addition, members of the control group were more likely to be homeowners. Survey respondents were asked to complete a follow-up survey during Spring 2003 to evaluate the effectiveness of the program.

Spring 2002 Workshop & Survey Non-Responders

As noted above, the survey completion rate was low and so was workshop attendance. Since the project did not successfully reach the targeted audience, a focus group was conducted with survey non-responders and workshop non-attendees to learn how to make it easier for them and others to learn about and use computers (summary attached). Six participants attended the focus group because they were interested in computer training and

needed the monetary incentive. Participants noted that computers should be used for business, e-mail, and job opportunities. However, participants did not want computers being used for politics or pornography. A participant expressed concern about providing personal information on the Internet. It was concluded that most of the participants did not have access to computers and that daycare and transportation weighed heavily on participation rates. It was evident that free computer classes were not the main concern of poor inner city residents when time, money, and resources were in short supply. This allowed the researchers, students, and the serviced communities to refine interventions that promoted basic Information Technology Literacy.

COMPUTER WORKSHOP TRAINING

Interview with Teresa Larson

Larson took the lead in the development and implementation of the service-learning curriculum designed to disseminate ITL. In collaboration with Drs. Shulman and Beisser, Larson co-teaches one class per semester at Drake University and oversees the fieldwork laboratory that implements the service-learning treatment with the experimental groups. She reported that in fall 2001 the project struggled to build a workable relationship with PEP (summary attached). PEP was recruiting young African American youth to participate in the free computer workshops. Since youth did not routinely attend their scheduled Saturday sessions, the project was unable to maintain a client base that provided service learning opportunities for Drake students and project resources were ineffectively used.

Nevertheless, Larson reported that this breakdown did not influence the computer training or interpersonal relationships between Drake students and inner city youth who did

attend. She commented that the Drake students connected with the racially diverse youth and often treated them like “a younger brother or sister.” Even though the young people were energetic and difficult to keep on task, Larson shared that the youth “were just bouncing off the walls, . . . but the Drake students could keep their attention.” Other difficulties encountered were hardware and software problems that short-circuited the amount of time Larson was able to devote to teaching. Larson concluded, “I don’t think it was the spirit of the project that was at fault. I think it was pragmatics that failed to gel”

Since the recruitment of Black youth failed to generate sufficient numbers to support project goals, in the spring of 2002, organizers mailed surveys and brochures to inner city residents in the Drake neighborhood inviting them to the service learning workshops. Larson reported that the Drake students adapted easily to the “racially mixed and economically disadvantaged groups.” She indicated that there were both “logistic problems” and “design problems.” Larson discussed the pragmatic issues created by offering free classes to a population struggling to subsist. For instance, participants did not attend scheduled workshops if “a car didn’t work” because they did not have alternative methods of transportation. Furthermore, family related issues prevented participants from attending their scheduled workshop sessions. Larson stated, “They don’t have the safety nets in place to deal with these immediate needs and attend a class.”

She said, “My perception is that when people have a computer need and a free source, they don’t typically hear anything else about the promotion. What they hear is someone will help me with my problem.” Nevertheless, successes were evident. Larson stated, “Anyone that participated in the workshops for that 1-hour time frame felt good about the experience. Most people leaving the workshops were appreciative.” Larson expressed the

concern that the participants did not get enough training to “make a significant impact on their digital fitness.”

According to Larson, students reflected on their involvement in the workshops. The Drake students did not feel the course was described very truthfully, and they “were very vocal in their criticism of the project,” stated Larson. Students argued that the requirements for this 1 credit course were excessive. According to Larson, students complained about the “amount of work and time that the workshops were delivered.” Larson indicated, “80% of the service learning sessions were conducted out-of-class in the evening or Saturdays.” Even though they were dissatisfied with aspects of the project, students offered positive observations. In their final papers, Larson reported that students were “expansive and generous” making “very thoughtful reflections on service learning” and suggesting ways “they could make a difference in the communities they would live in, in the future.” Drake students felt that they “made a difference in a person’s life.”

Focus Group Results

Spring 2002 Workshop Attendees

Drake University and Iowa State University sponsored a focus group to talk with Des Moines residents, who had been mailed the Drake Community Citizen Survey and who attended the free computer classes offered in spring 2002, about ways to make it easier for them and others to learn about and use computers (summary attached). Nine individuals accepted an invitation to attend the focus group. All participants revealed that they had computer access. They generally used IT for e-mail, searches, word processing, home

businesses, and recreational purposes (i.e., games, greeting cards, etc.). They participated in the free workshops to learn basic computer and Internet skills and desired more workshops on how to conduct their personal affairs on the Internet (i.e., pay bills, e- résumés, etc.). They enjoyed the small class size, instructors, and 1-on-1 attention. The workshop was held at a convenient location and time. Some difficulties were encountered gaining access to the facility. Participants criticized the project because the workshops were not tailored to different skill levels of clients and student instructors were not as knowledgeable as some clients expected. To recruit future clientele, they recommended hanging flyers in the library and Dahl's grocery stores. They suggested contacting local churches and advertising on the radio station KJMC. Finally, it was suggested that the program target individuals in mid-life (i.e., 50 years and older).

Focus Group Results

Fall 2001/Spring 2002 Students

The perspectives of Drake students were also evaluated in the context of a focus group discussion. Iowa State University and Drake University sponsored a focus group with six Drake students who were enrolled in the fall 2001 and/or spring 2002 digital citizenship lab (summary attached). The digital citizenship lab put in practice service-learning principles that prepared students to teach computer skills to an underserved population. Volunteerism and social agendas influenced desires to take the course. Public speaking and IT experience provided a good foundation, but students did not believe they had adequate teaching methods in place to teach IT. However, they were able to utilize effective strategies (i.e., patience, flexibility, comprehension verification, relationship building). They recommended pre-workshop assessment of clients' skills to enable students to better meet their expectations.

Meeting clients' basic computer needs set the stage for more reflective use of the Internet in the form of digital citizenship and life enrichment, but more time was needed to achieve these latter goals. For instance, one individual argued that disenfranchised citizens' "basic needs" must be met before they can use IT effectively. Students discussed whom the project should serve. Students debated whether the focus should be on underprivileged as a matter of income, race, or skill level. Another student reflected that the project developed a client base by allowing senior citizens to define themselves.

Overall, students felt positive about their experiences. The most important lessons learned involved understanding and adapting to client needs as well as the importance of personal interaction in progressive learning processes. The students became more critical, reflective thinkers in areas of interpersonal communication and the role of the Internet. They evaluated the impact of the Internet on democracy and citizenship and also critiqued the project's goals. A student commented on the difficulty this project had with juggling some key issues:

There's a real question, a tough one that is looked at long term if this project continues. How you really effectively teach all three aspects. Not just digital citizenship. Not just service learning. But also teaching concepts, because there's so much about teaching. I think that has to be looked at if we are going to have effective service learners. How do those concepts get broken down, so that there is quality time spent with participants?

CONCLUSION

Throughout the first year, the project was faced with recruiting an adequate client base. The partnership with PEP failed to generate adequate numbers, so the project adapted by building rapport with a senior center and using alternative methods of client recruitment.

Seniors who participated in the workshops were satisfied with the experience, and Larson's outreach activities suggested community seniors were eager for computer instruction.

The collaboration with senior centers was invaluable when the spring 2002 mail surveys to inner city adult residents failed to achieve project goals. In a focus group with non-responders and workshop non-attendees, it was evident that they struggled to meet basic needs. It was apparent that they did not have access to computers and needed transportation and daycare in order to attend the computer workshop. For inner city residents who did attend the workshops, they generally had computer skills and wanted to learn basic IT. They made positive comments about their instructors and the individual attention they received. They suggested that the project needed to be sensitive to different skill levels to be effective.

Drake students recognized the project's quagmire of juggling service learning principles, teaching methods, and digital citizenship. The project must address these issues if it is going to have a long term impact on clients served and provide an enriching experience for students. They recognized that their clients could not become digital citizens unless they had basic IT skills. It was pointed out that clients' skill levels should be assessed before they attended the workshop. The service learning experience made them consider their privileged positions. They also reflected on how race, class, age, and the lack of ITL effectively silenced marginal voices in a democratic society. Drake students may not have felt prepared to teach IT, but they were sensitive to their clients' needs, patient and flexible, which proved to be effective teaching strategies.

As pointed out by Larson, there are many intangibles that are not evaluated by the project such as whether clients have a more positive view of the university and its future

leaders. The project achieved many successes and adapted to the challenges presented by reaching out to community groups and disenfranchised citizens.

Appendix A: Research Findings

MANUSCRIPTS UNDER REVIEW

Stuart Shulman, Mack Shelley, Sally Beisser, and Teresa Larson, "Digital Citizenship: Lessons Learned as Service-Learning Meets the Digital Divide," submitted to *PS: Political Science and Politics*

Mack Shelley, Lisa Thrane, Stuart Shulman, Evette Lang, Sally Beisser, Teresa Larson, and James Mutiti. "Digital Citizenship: Parameters of the Digital Divide," forthcoming in *Social Science Computer Review*.

CONFERENCE PROCEEDINGS

Stuart Shulman, Sally Beisser, Teresa Larson, and Mack Shelley, "Digital Citizenship: Lessons Learned as Service-Learning Meets the Digital Divide," in *Proceedings of the Second National Conference on Digital Government Research, May 20-22, 2002* (Digital Government Research Center).

CONFERENCE PRESENTATIONS

Digital Citizenship: Expanding Information Technology Literacy with a Service-Learning Approach, American Political Science Association, Boston, MA (August 2002).

Digital Citizenship: Lessons Learned as Service-Learning Meets the Digital Divide, National Grantee Workshop for Digital Government Researchers: "dg.o 2002," Los Angeles, CA (May 2002).

Digital Citizenship: A Pathway to Environmental Justice, Interdisciplinary meeting: Environmental Justice and Global Citizenship, Copenhagen, Denmark (February 2002).

Digital Citizenship: Expanding Information Technology Literacy with a Service-Learning Approach, Annual Meeting of the American Association of Colleges and Universities, Washington, DC (January 2002).