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Technology Bridge to Employment: A Community Technology Initiative

“Submitted as a Capstone Project Report in fulfillment of a Master of Science Degree in Professional Studies at the Center for Multidisciplinary Studies of the Rochester Institute of Technology.”

Rosalind Bain

5/20/07

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I. Abstract:

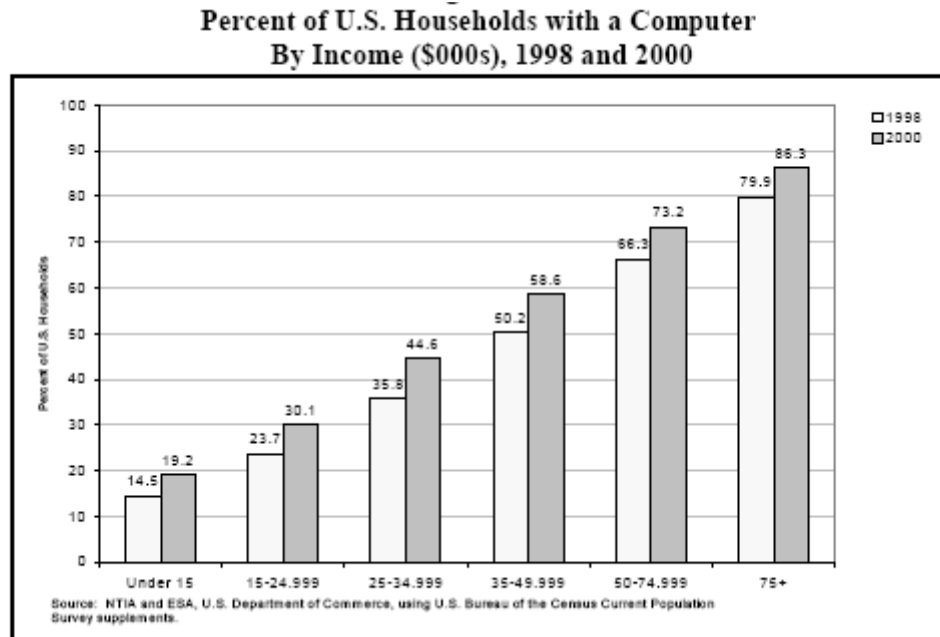
As the economic gap continues to widen between the rich and poor, we will continue to see people (primarily the poor) experiencing a number of social problems, including being cut off from accessing modern technology. In many small cities and rural areas throughout the United States, there is sufficient evidence that shows poor people are not as connected to or knowledgeable about modern technological advances and their application within the wider society. This puts them at a disadvantage and hinders their chances for both professional and economic growth. The author involved in the capstone served as the volunteer lead instructor and coordinator of *Technology Bridge to Employment*, an eight-week, intensive computer-based job skills and life skills training program at the Baden Street Settlement, Advanced Technology Training and Information Networking (ATTAIN) Lab, and accomplished the following objectives:

- ✓ Increased utilization of technology within an urban population with limited. Technology access, thus helping bridge the digital divide.
- ✓ Increased personal and professional development of program participants.
- ✓ Increased program services.
- ✓ Increased Baden ATTAIN Lab usage, particularly during evening program.

II. Problem Background:

A “digital divide” affects low-income citizens sociologically, economically, educationally and politically. Former United States Assistant Secretary for Commerce Telecommunications, Larry Irving, Jr., is credited with coining the term “digital divide” referring to “the existing gap in access to information services between those who could afford to purchase the computer hardware and software necessary to participate in the global information network and low income families and communities that cannot” (Dragulanescu, 2002, p.139).

Falling Through the Net: Toward Digital Inclusion: A Report on American’s Access to Technology Tools (October 2000), a collaborative study by the US Department of Commerce, Economic and Statistics Administration and National Telecommunications and Information Administration (NTIA) is an exhaustive study of Information Technology (IT) access in America comparing primarily years 1998 and 2000. Examined are three main types of computer and Internet access (cable and digital) in America: Part I – Among Households which includes factors such as geographic location, income, race, and household type; Part II – By Individuals relative to age, gender, and labor force status; and Part III – People With Disabilities that affect mobility, hearing, sight, manual dexterity, and learning comprehension. Their data shows that economically advantaged tend to have household computers and Internet access. On the other hand, economically disadvantaged people made less use of household computers and Internet access. In 1998 the percent of U. S. Households with a computer were less than 20% but increased to over 80% in the year 2000 (Shapiro, and Rohde 2000), (See chart below).



(Shapiro and Rhode 2000)

Hence, it is not difficult to realize that there are severe economic consequences for people who do not have computer or Internet access.

According to the Center for Urban Policy Research, “Data from the most recent (NTIA) survey show that ‘households with incomes of less than \$20,000 and Black households are twice as likely to get Internet access through a public library or community center than are households earning more than \$20,000 or White households. [Additionally,] the same households that are using community access centers at higher rates are also using the Internet more often than other groups to find jobs or for educational purpose” (Center for Urban Policy Research, Rutgers University 2006, p.81). Even though some might believe the poor are not concerned with adopting modern technology or with the application of technology in their general or working lives, this is not necessarily always the case. Poor people are going to the libraries and community centers to get connected. They, like people who are better off financially, realize the

long-term benefits of becoming computer literate. It is undoubtedly a step in the right direction when one, regardless of income, can successfully navigate different types of information devices.

Robinson 2007 states, “Internet usage increases with individuals with higher income levels and decreases with those with lower income levels.” Again, we have seen that one’s income directly correlates to one’s access to Internet usage (pg.1)

In order for everyone to have equal access to technology, various tools need to be implemented. According to Roach 2007, “In March 2004, President George W. Bush called for the national adoption of universal, affordable broadband access by 2007. The purpose of the initiative was to stay on the cutting edge of the technological change” (pg.1) interestingly, we are seeing that it is not only income that creates the gap in Internet usage; geography also plays a crucial role. Thus, the combination of low income together with rural geography puts people at a greater technological disadvantage. I conclude that access to technology and broad band access should be a fundamental right of all citizens regardless of race, gender, economical background, or geographical location and not be construed as a luxury. I suggest one way to accomplish this task is by educating under-represented populations.

Nicholson 2007, discuss strategies that educational professionals can implement to encourage “under-represented populations” (that is, minorities and females) to enter computer-related studies and the economic implications of doing/not doing so are stressed. The three main reasons given for increasing diversity within IT fields are: 1) Continued Industrial Growth. In the US, considering the increased minority population, a desire for industrial growth will necessitate adding females and minorities the ranks of IT profession also; 2) Technological Innovation. Cultural and gender diversity enhances the range of ideas, thus lessening industrially and technologically biased inventions; and 3) Economic Disparity Reduction. IT fields are

expected to generate higher incomes and therefore, minorities and women will need to enter these fields to be economically viable in this IT era (p. 123).

According to Mossberger 2006,

“Technology inequalities based on race and ethnicity presents a paradox. African-Americans and Latinos have lower rates of access and skill, even accounting for socioeconomic factors. Yet African-Americans, and to a lesser extent, Latinos, also have more positive attitudes toward information technology than similarly situated whites. Because attitudes cannot explain lower rates of access and skill, the study hypothesizes that racial segregation and concentrated poverty have restricted opportunities to learn about and use technology (p.583)”.

Financial equity is extremely important for low-income families not knowing how to access financial resources online. According to Barr 2004,

“The consequences of not having access to mainstream financial services can be severe. High-cost financial services reduce disposable income for those least able to afford it. Such services reduce the value of government transfer programs, including the EITC, and may undermine federal and state initiatives to improve workforce participation and reward work. Lack of access to mainstream financial services also undermines the ability of the poor to save and to access credit, reducing their long-term wealth. Low-income people using check cashers may be more susceptible to robbery because they tend to cash their entire paycheck at regular time periods. Additionally, reducing inefficiencies in the payments system for the poor may have modest positive effects on the economy” (p.121).

According to Kuttan 2003, “Computers and the Internet give us more chances to move more people out of poverty more quickly than at any time in all of human history. The key lays in access to the proper IT training for those who could benefit the most: minorities, women, and the poor. With access to IT training, minorities, women, and the poor can take advantage of the current and future boom of IT Jobs. Because IT Jobs have higher average salaries minorities, women, and the poor could quickly catch up in income to the rest of society and if minorities and the poor do not receive better access to IT training today not only will they miss out on an historic opportunity, so will society as a whole.” In addition the author further elaborates, “1)There is a closing window for social and economic parity; 2) the technology haves and have-

nots are diverging and that today's information poor will be tomorrow's information-impooverished; 3) the future of America's economic development and the soundness of its democracy are at stake." (Pp.53-54)

Davies 2003 defines Community Technology Centers (CTCs) as nonprofit, locally-based organizations that provide IT to groups that do not get access to it in other ways. They cover a wide range of types of organizations, including: 1) Stand-alone centers created explicitly to address information technology (IT) and digital divide issues, such as access, training, and content; 2.) multi-service agencies in which CTCs are part of organizations or institutions such as a public library, a YWCA; and 3.) Networked CTCs connected by a larger organization such as the Austin FreeNet which provides technology training and access for the community. (Pp.7-10)

In 1998, Science Linkages in the Community (SLIC) (housed at the Rochester Museum and Science Center) began to recycle computers for use in non-traditional learning environments (e.g. non-profit organizations). This led to a three-way partnership between the SLIC, United Way Gifts in Kind, and Nortel Industries in Rochester for recycling and distributing refurbished computers received from area corporations, businesses, and individuals. Later, SLIC conducted community focus meetings to increase the availability of computer learning for youth; this resulted in the Community Computers for Rochester (CCR) concept. In 1999, Microsoft Corporation was the first company to award "Connected Learning Community" (CLC) grants, which supported technology access projects at 12 nonprofit organizations across the country. The grants were to provide cash and software locally, with the goal of enhancing learning and communication using IT in disadvantaged communities. SLIC was a recipient of one of the \$ 15,000 grants, which was used to support the establishment of a dedicated lab at the Rochester

Museum and Science Center for training community organization staff and teen computer coaches in the content and delivery of age-appropriate computer learning activities.

In 2000, SLIC was awarded a 3-year grant from the US Department of Education to fund and establish 30 CTCs, ten per year at non-profit organizations throughout the city. By 2004, the end of the funding cycle, SLIC CCR attained its goal of establishing and training “Project champions” for 30 CTC’s within non-profit and faith-based organizations. Baden Street Settlement was a cohort in the first group of CCR participants and former Baden employee Alicia Ward was its “Champion.” The success of the CCR project at Baden Street Settlement led the agency to seek additional funding to upgrade and maintain its CTC.

Addressing the digital divide was a “hot issue” at the beginning of the new millennium. At this time, the State University of New York (SUNY) University Center for Academic and Workforce Development (UCAWD) received funding and established the ATTAIN project, a statewide technology based employment initiative. To date, there are 30 ATTAIN Labs State wide: 12 SUNY Rochester Educational Opportunity Centers and 18 non-profit community agencies. The ATTAIN Lab at Baden Street Settlement was installed in 2001 and inaugurated in 2002.

In 2000 more than 5,000 nonprofit organizations benefited from over \$39.9 million in cash and \$207 million in software given by Microsoft. As a result, these organizations were better able to fulfill their missions (Microsoft Annual Report of Giving, 2005, p.1). Microsoft believes that by providing training and tools, it can partner to create social and economic opportunities that can transform communities and help people realize their potential. Microsoft’s community investment efforts are focused on increasing digital inclusion and bringing the

benefits of technology and technology skills to a billion more people by 2015. Software Microsoft designed to broaden digital inclusion and to aid global workforce development is called the Microsoft Unlimited Potential-Community Technology Skills. This software and interactive program assists nonprofits in developing and providing technology and job skills development programs through CTC's. Its goal is to integrate and accelerate long-term global business and citizen commitment to bring the benefits of technology to those who currently receive little or no benefits from technology (Microsoft Community Affairs, 2007, p.1).

Other organizations that help to bridge the divide in the community are:

- New York State Department of Labor Workforce Development and Training Division,'
- Rochester Works, which offers ongoing job training assessments and placements,' Work Net, which is a private company that offers job placement services for the difficult to place,'
- Department of Urban Development, which offers free computers Internet services and training to low income families who reside in HUD housing divisions and homes,' and the
- Monroe County/Rochester Workforce Investment Board (LWIB).

III. Project Description

This Capstone Project, *Technology Bridge to Employment* (TBE), was an eight-week computer-based job skills training program coordinated, designed and implemented by myself and the Manager of the ATTAIN Lab, Alicia Ward. The workshops were held each Monday night from 6-8 p.m. March 2, through April 23, 2007. The goal of the project was to provide job skills training targeting unemployed and underemployed persons. In January I began meeting with Ms. Ward who, at the time, had a desire to see job assistance participants receive training in current Microsoft software. During the week, on average, more than 30 Welfare-to-Work (WTW) clients attended the Baden ATTAIN Lab to fulfill mandatory Work Experience Program (WEP) hours.

“In 1996, President Clinton signed into law “The Personal Responsibility and Work Opportunity ACT.” This was a comprehensive reform that required work in exchange for time-limited assistance. The bill contains strong work requirement, a performance bonus to reward states for moving welfare recipients into jobs. Some of the changes included: 1) After two years recipients must work while on assistance; 2) To count toward state work requirements, recipients are required to participate in unsubsidized, or unsubsidized employment, on the job training, work experience, community service, 12 months of vocational training, on the job training, work experience, or provide child care to some one participating in community service.” (The PRWORA 1996)

In response to the PRWORA I wanted to include welfare to work participants in my workshops so within the six week training program, we managed to recruit, assess and train a

total of eight participants. Program participants came for a variety of reasons and were enrolled in Monroe County Department of Human and Health Services Welfare to Work initiatives they also received Temporary Assistance for Needy Families (TANF), a program run by the State of New York, and were referred by such agencies as: Wilson Commencement Park and Baden Street Workforce Development. Other unemployed individuals who received no type of governmental assistance were just looking to increase their technology skills for a better paying job.

To further understand the vital importance of CTCs on the community of Rochester, I gained helpful information about the history of Science Linkages, and its impact on Baden Street from Jemuel Johnson, a previous coordinator of Science linkages who influenced me in creating my program. In addition, he accepted my invitation to conduct a workshop on the Internet history and the impact of the Internet on CTC's.

The Education Specialist of Wilson Commencement Park Dr. June Watkins, and Joseph S. Brown, the Career and Employment specialist, both expressed a desire to have some of the residents of the Wilson Commencement Park attend the workshops. They emailed their residents and sent a thank you letter to the Manager of the ATTAIN Lab thanking us for initiating this project. (See appendix A) Wilson Commencement is a single family housing complex, which gives emergency shelter to homeless individuals with children and women affected by domestic violence. The women live there for a period of two years and are given assistance while they work and attend school; after two years they must look for alternative housing. Due to parenting classes on Monday nights going on at the same time, in addition to some parents attending school day programs for their GED, we managed to recruit only one of their residents for the entire workshop series.

I also had the pleasure to collaborate with Earl Barnes, Job Developer at Baden Community Workforce Development, who proposed a life skills workshop. He proposed topics such as stress and time management, as well as budgeting seminars. As a result of our meeting we gained three of our participants in TBE.

The goal of TBE was to address the job skill needs of the unemployed utilizing IT. Through this initiative, a variety of computer-based job skills were presented as personal and professional development workshops. Brochures were developed and had to be approved by the State Regional Office of the ATTAIN Lab in order to utilize the logo type of the ATTAIN Lab.

The curriculum was designed according to the educational strategy developed by the adult learning theorist Malcolm S. Knowles, “the Father of Adult Learning.” Knowles popularized the concept of *andragogy*, “an emerging technology” for adult learning. Smith 2002 describes the five andragogical assumptions:

1. Self-concept: As a person matures his self-concept moves from one of being a dependent personality toward one of being a self-directed human being;
2. Experience: As a person matures he accumulates a growing reservoir of experience that becomes an increasing resource for learning.
3. Readiness to learn: As a person matures his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles.
4. Orientation to learning. As a person matures his time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his orientation toward learning shifts from one of subject-centeredness to one of problem centeredness.
5. Motivation to Learn: As a person matures the motivation to learn is internal. (p.8)

According to Dover 1999, Knowles suggestion is that educators should:

- arrange for a diagnosis of learner needs and interests

- enable the formulation of learning objectives based on the diagnosed needs and interests
- design sequential activities for achieving the objectives
- execute the design by selecting methods, materials, and resources; and
- Evaluate the quality of the learning experience while re-diagnosing needs for further learning.

The three reasons for self-direction as he describes it are that 1) people who take the initiative in learning (proactive learners) learn more things, and learn better, than do people who sit at the feet of teachers passively waiting to be taught (reactive learners). They enter into learning more purposefully and with greater motivation; in addition, they retain and make use of what they learn better and longer than do the reactive learners; 2) Self-directed learning is more in tune with our natural processes of psychological development and essential aspect of maturing is developing the ability to take increasing responsibility for our own lives; and 3) Many of the new developments in education put a heavy responsibility on the learners to take a good deal of initiative in their own learning, students who enter a learning environment without having learned the skills of self-directed inquiry experience feelings of anxiety, frustration, and often failure. [Smith, 2002:10]

In developing the workshop series and collaborating with the ATTAIN manager, I kept in mind the strategies of Knowles and also the connection of the workshop series to policy. Any welfare to work program is measured by the extent to which it helps participants obtain and retain employment. Each aspect of the program should and must focus on job entry, including client assessments and ongoing participation in work activities. So, in designing each week's lesson I took into consideration the strategies of Malcolm Knowles in addition to the WTW work policy.

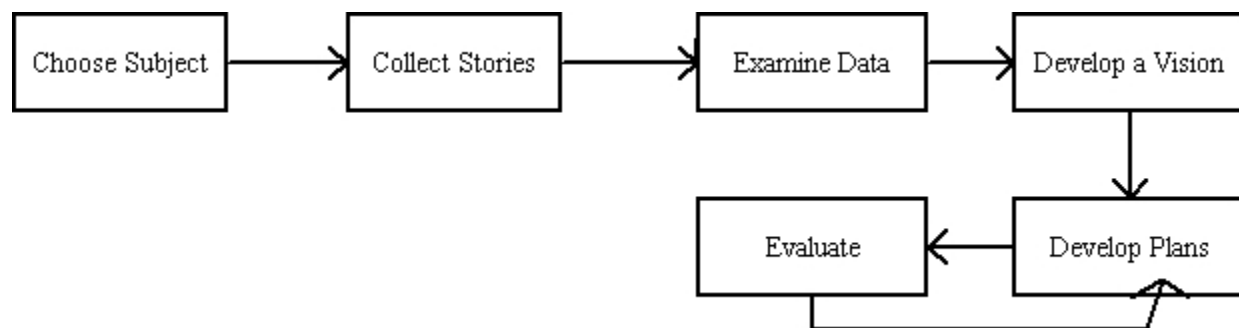
IV. Project Steps:

As a consultant, I collaborated with Alicia Ward, Baden ATTAIN Lab Manager/Coordinator, to enhance the facility's current delivery of employability skills training. By utilizing Instructional Systems Incorporated (ISI) assessment tools, we were able to develop and deliver an eight week technology skills workshop series for a total of eight individuals. To prepare myself for this training, I attended the ISI training workshop offered to Baden Street employees. The Senior Trainer/ Program Developer Sonya Maxwell covered a range of topics such as how to utilize the different software to develop a job skill curriculum for workshop attendees. This step proved to be most effective, it gave me ideas of the range of topics that could be employed in the workshop series, such as "You Can Make It Happen," a life skills training software developed by Steadman Graham. This multimedia computer-based instruction program is designed to help students develop basic reading skills and living skills, which would lead to professional development skills. The ISI Job readiness series provides basic skill instruction required for entry level positions.

In November of 2006, I would make regular weekly meetings with the ATTAIN Lab manager. These weekly visits gave me the opportunity to volunteer in the program, and to assess what skills participants would need to be successful. I noticed the majority of the participants who visited the lab attended during the day and came in needing assistance with resume writing or with accessing information online for employment. Although the software was available, lack of knowledge on how to utilize the different interactive programs prohibited some from being successful. In addition, there were no curriculum criteria for participants to follow in order to

accomplish those tasks. The ATTAIN Manager's primary function was to run the lab and assist participants with computer skills; this left her very little time to set up a curriculum to follow. With the skills I gained in the course Organizational Development and Change, I knew as a consultant that the first step to take in analyzing an organization is conducting a needs assessment. This was accomplished in the following order:

I Conducted a Needs Assessment, of the Baden ATTAIN program, utilizing the General Model of Planned Change.



(Smiley, 2001, p.1)

- a) Chose the subject, in this case the eight unemployed or partly employed participants seeking professional and personal development skills.
- b) Collected history on the organization and ATTAIN Lab and did an assessment utilizing that data to determine what the project would need to be successful.
- c) Examined data to determine useful educational strategies, tools, software, and assessments. In this case we used two. The first assessment survey was CAAELII (2003), an acronym for the Coalition of African, Asian, European and Latino Immigrants of Illinois. The CAAELII more often cited as being in the forefront of using technology as an organizing and communication tool across racial and ethnic lines. The survey determines initial software skills and skill improvement after

receiving Microsoft training (See Table C). ONET.com profile interest indicator assesses participant's hobbies, likes, and job interests.

- d) Developed plans such as: 1) curriculums instructions, and determined who would facilitate workshops in addition to topics to be taught such as Microsoft office, Windows XP, and The Internet: pre and post test of each subject was given. (See Appendices B, C, D, and E; 2) coordinated start dates and times of workshops (See Appendix F), and recruited the agencies we would want to involve in the project; 3) developed brochure utilizing the current ATTAIN Lab brochure. In this case we had received permission from the SUNY ATTAIN Lab coordinator to use the current ATTAIN lab template as the Logo for TBE. In addition we developed intake forms and surveys; 4) Implemented project.
- e) Final evaluation was based on the Hypothesis test performed (See Appendices G, H, I, J, K, L, and M.

A review of the article the “Second-Level Digital Divide: Differences in Peoples Online Skills” reported “some scholars have offered a refined understanding of the digital divide by suggesting that there are five dimensions along which the digital divides may exist:

1. technical means (software, hardware, connectivity quality);
2. autonomy of use (location of access, freedom to use the medium for one's preferred activities);
3. use patterns (types of uses of the Internet);
4. social support networks (availability of others one can turn to for assistance with use, size of networks to encourage use); and,
5. Skill (one's ability to use the medium effectively)

The goal of the study was to explore differences in Internet users' online skills. The findings of the study indicated that merely offering people a network-connected machine will not ensure that they can use the medium, but people need to be taught how to effectively use the medium.” (Hargittai, 2002 p.1)

When preparing weekly curriculums we took into consideration Malcolm Knowles's theory “The Adult learner: A Neglected Species, where he described ways to apply andragogy principles to design adult courses on the use of personal computers:

1. There is a need to explain why specific things are being taught (for example, certain commands, functions, operations, and so forth.) Each night of the workshop would begin with an overview of what topics we would cover. All information was placed on a smart board for participants to see. Then we would engage each learner by asking questions for clarification of task to be performed for the night.
2. The second part of his principle is that instruction should be task-oriented and that learning memorization should be in the context of common tasks to be performed. Once the general overview was presented we would allow individuals to perform individual tasks on their own. Such activities included pair work where participants role-played job interview or assisted each other with scoring the job interest profile.
3. The third part of his principle is that instruction should take into account the wide range of different backgrounds of learners, learning materials and activities, which should allow for different levels/types previous experience

with computers. This was accomplished by observation and pre-and-post surveys.

4. Since adults are self-directed, instruction should allow learners to discover things for themselves, providing guidance and help when mistakes are made those in the workshop who needed individual instruction were given one on one attention, and those who could work independently were allowed to advance on to the next skill level (Moreland 2003, p.2).

VI. Conclusion

The concern of the digital divide is that the underclass or info-poor may become further marginalized in societies where basic computer skills are becoming essential for economic success and personal advancement, entry to a good career and educational opportunities, and full access to social networks and opportunities (Dragulanescu, 2002, p.139).

The Report on Americans' Access to Technology Tools (October 2000) Falling through the Net, indicates that people who are economically disadvantaged have a lower rate of household computers and Internet access than those who are economically advantaged. (Rohde; Shapiro, 2000 p.6)

Furthermore, according to the author of *Social Inequalities* (2001), "The chief concern about the digital divide is that the underclass or info-poor may become further marginalized in societies where basic computer skills are becoming essential for economic success and personal advancement, entry to a good career and educational opportunities" (Pippa, 2001 p.68).

Bridging the divide will take not only training individuals in technology, but also quick government action when it comes to policies to address the digital divide. Important issues policy makers would need to address are family income and ethnicity. According to the authors Kuttan, and Peters, "The term Marshall Plan is a convenient shorthand phrase that is sometimes used to suggest that society needs quick and massive government intervention to solve an urgent problem. When it comes to developing policies to address the digital divide, policymakers have tended to overlook the important compounding effects of the divide such as family income, ethnicity, and how technology can provide greater access to adult education, skill development, and lifelong learning (2003, p.92).

VII. Overall Accomplishments

Within the eight weeks of the Technology Bridge to employment program, ATTAIN manager Alicia Ward and I were able to successfully train eight people in the areas of Microsoft Office, Windows Xp, and the Internet, which are all valuable skills for entry level employment in today's workforce. The results of the project led to successful employment for two of the participants: one was hired at Wendy's restaurant and felt the skills gained would give him the opportunity to be promoted to an higher position; the other a single mother expressed that she was glad she had participated in the workshops it gave her entry level skills for a receptionist position.

Project outcomes: 1) TBE Program participants skill levels increased in IT and job readiness skills. 2) TBE Participants gained skills in job search, obtained employment, and/or upgrade present employment ranking. These gains were measured utilizing pre and post-survey materials developed by CAAELII and job skills ranking surveys. 3) The awareness and usage of the Baden ATTAIN Lab by unemployed/underemployed adults within the Rochester community increased.

Prior to the project only one participant attended the Lab on Monday nights and now more than eight individuals attend. In addition, participants expressed that they would continue utilizing the Lab during the day hours. 4) TBE curriculum and assessment tools served as a basis for improved adult employability training within the Baden ATTAIN program. 5) The Paired T-test results shown that participants' skill levels did increase after taking the pre- and post-test. Those who benefited the most were the one who entered the program with the lowest skill sets. TBE can now serve as a model technology-based job skills training program duplicated throughout the ATTAIN Lab system. Early exposure to the lab via workshops as Technology

Bridge to Employment will give citizens in the community experience with technology with hopes in hopes of establishing a future career. 6) TBE workshop series can now serve as a general template for CTC job skills training programs within organizations in the Rochester community. 7) Because the Baden ATTAIN Lab is considered a “One Stop Center” developed to provide core services to all individuals, those who take advantage of the current software offered can increase their knowledge of not only Microsoft software but also they can explore the Internet, and the various self interactive software such as O’Net, GCF learning, and the multi-faceted tools of technology.

The highlight of our project was when we had the honor of inviting Jemual Johnson, the former Science Linkages coordinator, and Judge Mia Dickson, a Rochester City Court Judge, to make presentations to our workshops. I felt by doing this, participants could see that ordinary individuals can grow into successful professionals. Jemuel Johnson shared his story on the history of Science linkages and he explained how technology has played a major role in his growth. Also, he has been an advocate for Community Centers in the city of Rochester and continues to encourage the implementation of CTCs in the Rochester community. Judge Mia Dickson’s topic was “From Poverty to Prosperity.” She shared her experiences as a former welfare recipient. What was motivational about her topic was as being an Afro-American woman she never thought she would overcome the public welfare system. Through hard work and perseverance she defied the odds. Many tears were shed that evening. For me, work with the participants reminded me to be humble and thankful for the hurdles I overcame in my life.

VIII. Recommendations

My recommendation to the Manager of the ATTAIN is to continue using the Technology Bridge to Employment workshop, to increase the technology skill levels of unemployed, low-skilled individuals. In addition, it is best to schedule workshop hours during the day when a majority of the participants from the WEP program attend for resume writing and job assistance. By incorporating this project during the daytime hours, more participants can gain professional and personal development skills for future employment, including networking. By doing this several things can happen, such as: a) increased utilization of technology within an urban population with limited technology access, thus bridging the digital divide, greater awareness of the potential of information technology, and job increase.

My experiences in the Baden ATTAIN Lab have allowed me to see how individuals can grow professionally and on a personal level when given the resources and the chance to accomplish their goals.

Another recommendation would be to implement Malcolm Knowles's theory into praxis when developing curriculums for the adult learner. Malcolm Knowles describes self-direction as, "a process in which individuals take the initiative, without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, and choosing and implementing appropriate learning strategies, and evaluating learning outcomes."

According to the author Cilia Conrad, “To affect a system for skills development, curriculums should be designed to enable learner to gain skills that are in demand with the labor market by employing training and education that integrates basic skills, employability skills, technical skills and deliver curriculum that is tailored to the learners’ context.” Another recommendation would be to rely on external and internal sources to enable participants to benefit from the skills development; the author further states, “rely on visionary leaders at the local level who have clear ideas of the mission and who can motivate staff and participates. (Conrad 2004, p.143) and finally recruit trained volunteers from the community to assist with the training of technology skills.

One other recommendation is that the manager of the ATTAIN Lab target area employers to forecast future employment needs. Customize curricula with specific occupations in mind to meet the needs of employers and participants. Develop a career plan with the involvement of the participant. And finally develop a tracking system to keep in contact with participants after they are successful with career goals and plans.

IX. Plans of Study

My plan of study benefited me in a number of ways in completing this project. Organization Development and Change helped me to strengthen my skills as a consultant. I was able to utilize the Model of Planned Change to assess the basic needs of the ATTAIN Lab. The model gave me a step by step process to follow such as assessment, collecting information on the organizational history, deciding which strategies to employ, and giving and receiving feedback throughout the whole process when assessing an organization.

In Tech Innovation I learned there are two types of organizational systems: Opened and Closed. In a closed system organizations rely specifically on internal sources for expert knowledge, where as in an open system, information is exchanged and organizations accept feedback from other sources outside the system. The Baden ATTAIN Lab relies on a variety of sources and stake- holders for its daily functioning. In planning the project we had to take into consideration the various organizations within the Baden lab for information and knowledge.

Context and Trends was the very first of several classes I took at RIT which helped me to understand my self and individuals who find it hard to overcome obstacles.

Power and Influence was a course that I took that allowed me to see that it is more than the resources within the organization that helps it to function, but also the individuals within can make or break the project influences can be negative or positive.

Economics for Managers was a course that I took that pertained to today's economy. There is more technology than people trained to use it therefore, managers

must understand how micro and macro forces must be considered when making business and organization decisions.

In Public Administration and Management, I learned a great deal about working within a bureaucracy and the government agencies that impact policy decisions. Although I wanted to see a variety of courses taught to aide the unemployed I had to take into consideration certain policies such as the WIA the primary goal of which is to get people working in as little time as possible, and that decisions within organizations are generally decentralized.

Information and Communication policy influences agencies in that the government implements funding in programs like the ATTAN lab to give low income citizens equal access to IT. With that in mind, our goal was to train as many people as possible with technology.

The study of Science and Technology Policy made me aware of the importance of training individuals in technology. The strength of the United States economy lies in the people and their ability to acquire skills in IT and further creates conditions for socio-economic uplift. Being that the majority of the participants of the project were either employed or receiving some kind of government assistance, their ability to compete in today's society is based upon nonprofits provided adequate technology workshops and seminars.

Electronic Communication in Society, the Pace Competitive Edge Act makes it clear that the United States is at a disadvantage when it comes to technology in comparison to other nations. Implementing more funding for IT training in non-profit

organizations would give the United States the competitive edge it needs. This will put a number of Americans back into the workplace with the technology skills needed.

Crafting the message was a course which helped me to design brochures and get the message out regarding the Technology Bridge to Employment Project. In addition to networking, I was able to meet a lot of prominent individuals who shared the same vision of using technology to transcend a community.

The Organization Behavior and Leadership course prepared me to a certain extent when it came to dealing with individuals who had resistance to change. In addition, this course prepared me to instruct, lead and design courses conducive to the adult learner.

(“Appendix A”)



WILSON COMMENCEMENT PARK

Family Support Services
251 Joseph Avenue
Rochester, NY 14605

February 27, 2007

Dear Resident:

This is to inform you of a new 5-week Advanced Technology Training and Information Networking (ATTAIN) program. This is a new series of job readiness and skills development experiences that are being offered at Baden Street Settlement.

This is a great opportunity to develop a range of job and career skills relative to;

- effective interviewing
- resume writing
- dress for success
- basic computer literacy
- interpersonal skills (just to name a few)

Please review the enclosed brochure and feel free to contact Dr. June or me to address any questions that you might have concerning this opportunity. You can call or drop-by any evening. However, you can, also, utilize the contact information provided for making direct contact with Baden Street Settlement to take advantage these learning and development opportunities.

Please note this is a very time sensitive opportunity. The first class of this series begins on Monday, March 5th and will continue thru the next four successive Mondays through April 2nd. Each session will start at 6pm and end at 8pm. ACT NOW, DON'T HESITATE!

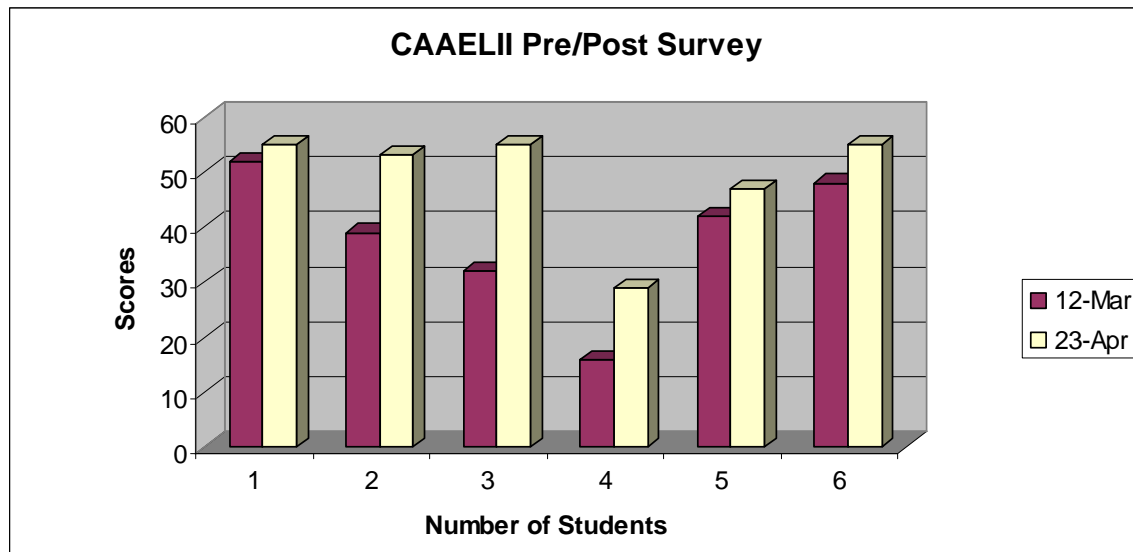
Do not hesitate to let us know how we can support your participation.

Sincerely yours,

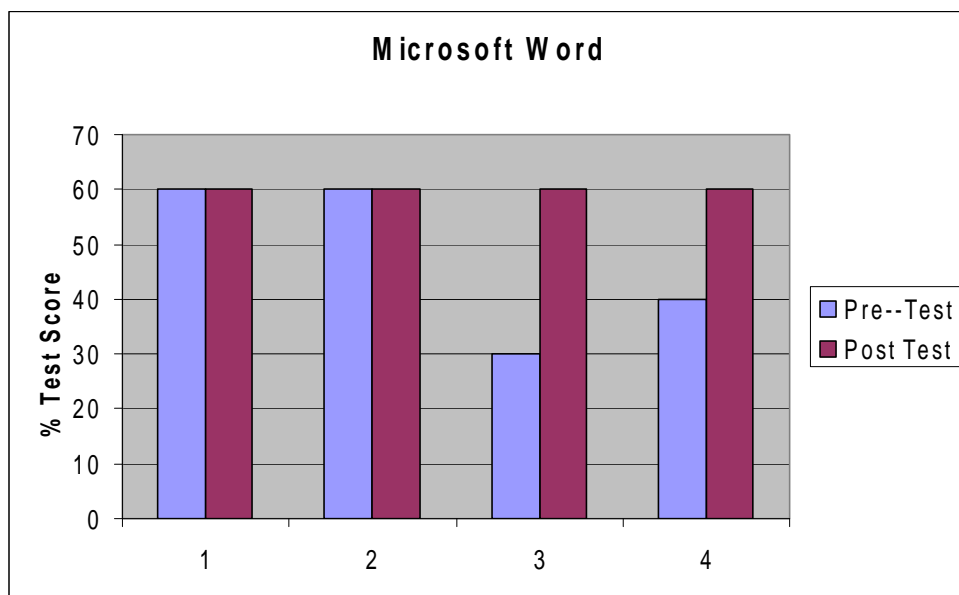
Dr. June Watkins,
Education Specialist

Joseph S. Brown,
Career/Employment Coach

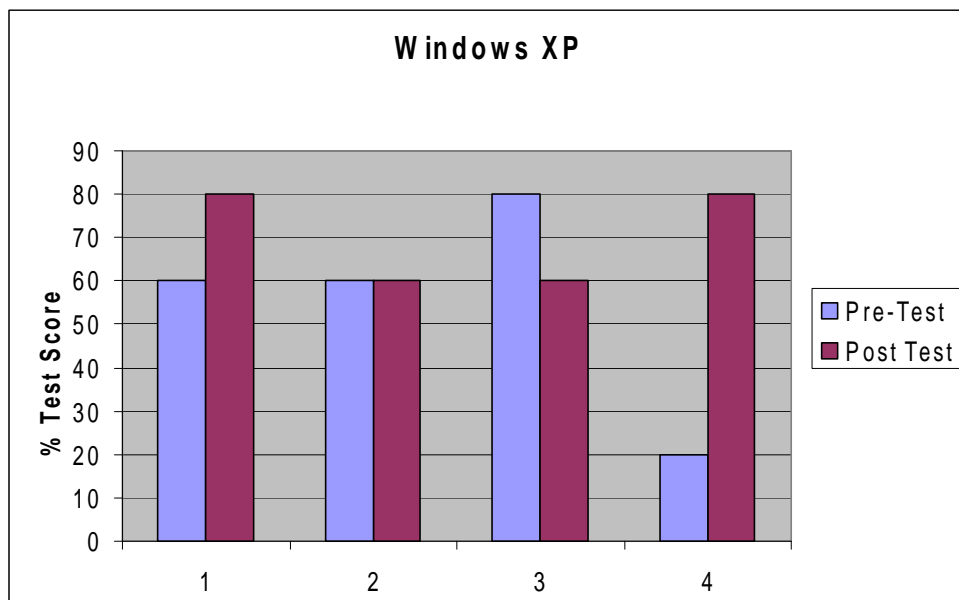
(“Appendix B”)



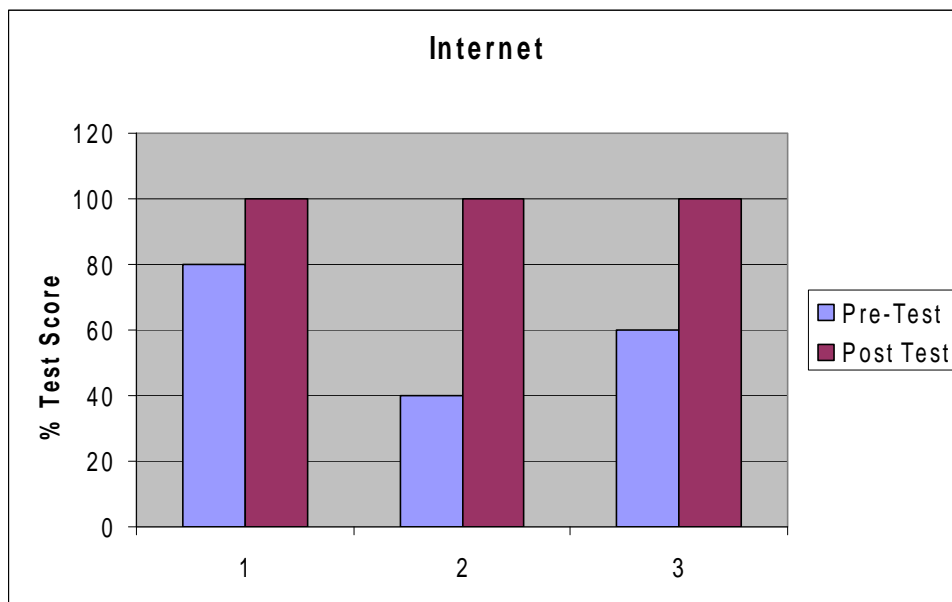
(“Appendix C”)




(“Appendix D”)



(“Appendix E”)



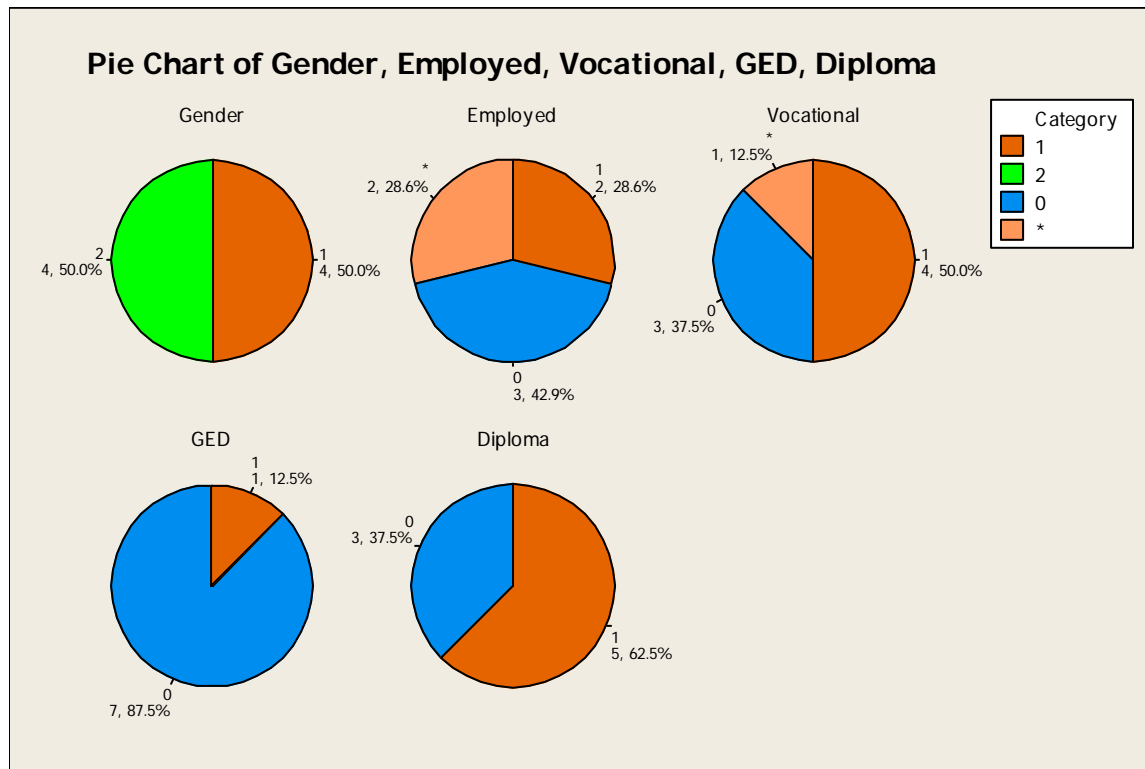
("Appendix F")

Current Week								
Weeks	03/05 to 03/12	03/12 to 03/19	03/19 to 03/26	03/26 to 04/02	04/02 to 04/09	04/09 to 04/16	04/16 to 04/23	04/23 to 04/30
Tasks								
Technology Bridge to Employment Orientation/CAAELII Pre-test								
The Success Process/Introduction to Keyboard and other output devices								
Developing Your Plan/ Intro to resume writing /Computer Basics								
Introduction to Windows XP								
Microsoft Word/Revising and editing resumes								
<i>Internet Explorer</i>								
Judge Mia Dickson Topic from poverty to Prosperity								
Job Interest Profilers CAAELII Post-Test								
Tasks	03/05 to 03/12	03/12 to 03/19	03/19 to 03/26	03/26 to 04/02	04/02 to 04/09	04/09 to 04/16	04/16 to 04/23	04/23 to 04/30
Weeks								

Project: Technology Bridge to Employment (TBE)

V. Project Outcomes

("Appendix G")



The program shows pie chart results for the 8 students that comprised the program by gender, employment, whether they participated in any type of vocational training prior to attending the Technology Bridge to Employment workshops, whether they had a General education diploma or High school Diploma. Results are as follows:

Gender=50% of the population were male; the other 50% were female.

Employment=28.6% were employed, 42.9% were unemployed, the other 28.6 employment status was unknown.

Vocational status=50% of population had received some form of vocational prior to this program. 37.5% had received no prior vocational training, and 12.5% prior vocational status unknown.

GED=12.5% had a GED.

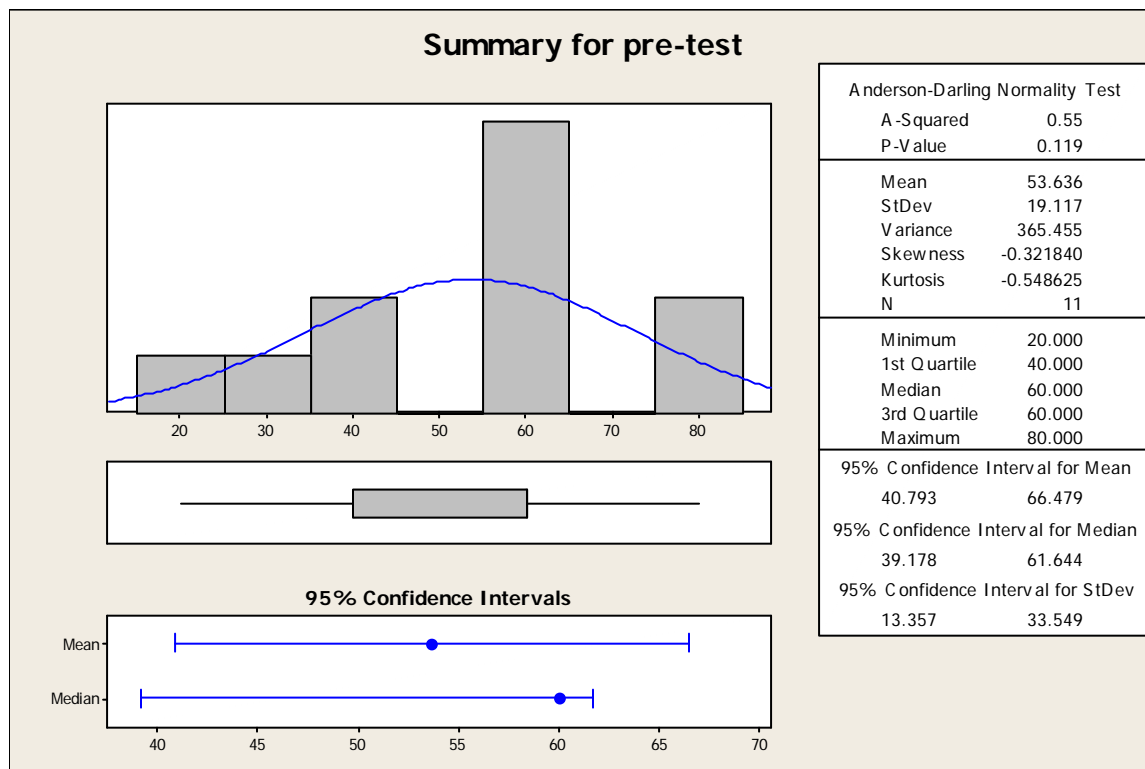
Diploma=62.5%

(“Appendix H: Anderson-Darling Normality Test Instrument”)

A pre-test was administered before instruction began to assign a measure to the level of computer abilities of the program participants. Students self identified whether they were familiar with each of Microsoft, *Windows XP*, or *Internet Explorer* specific computer skills. (See Table C, D, E.) The test of each topic was based on 5 questions each being 20 points each. 80% or higher was considered a passing grade, below 80% was considered not passing.

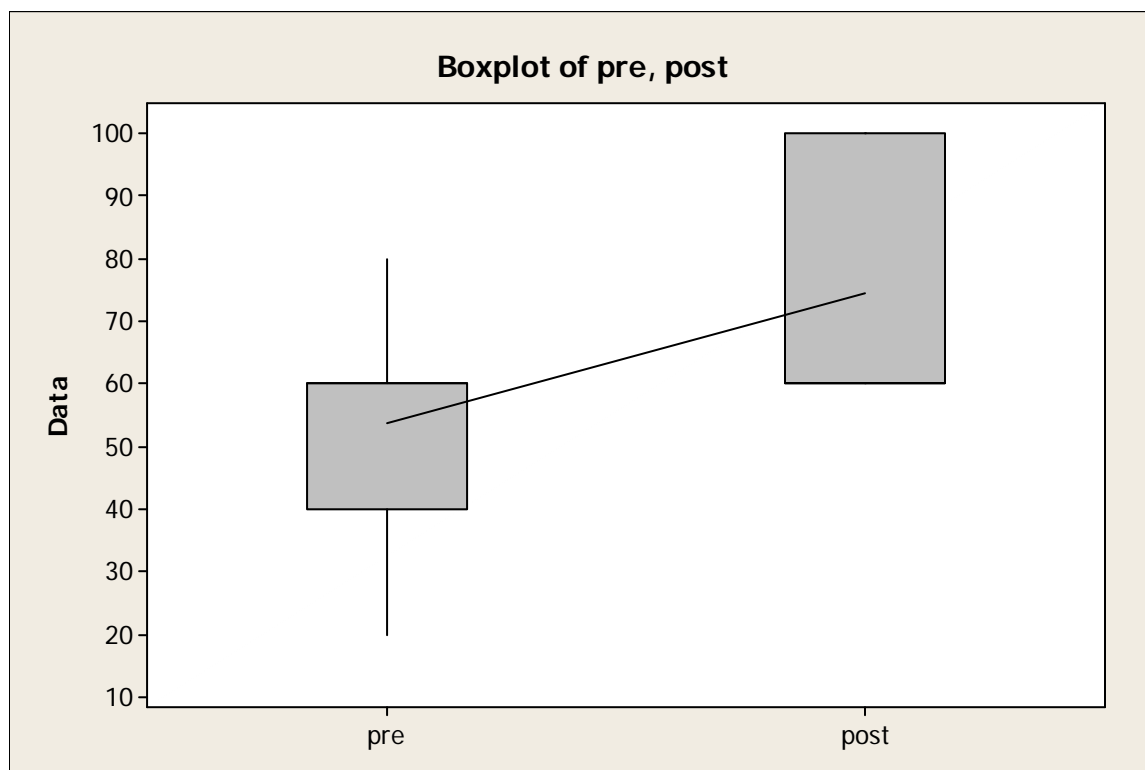
Scores on the pre-test ranged from a low of 20 to a high of 80 % with an average of 53.64. The results are summarized in the table below.

The summary of scores on the pre-test



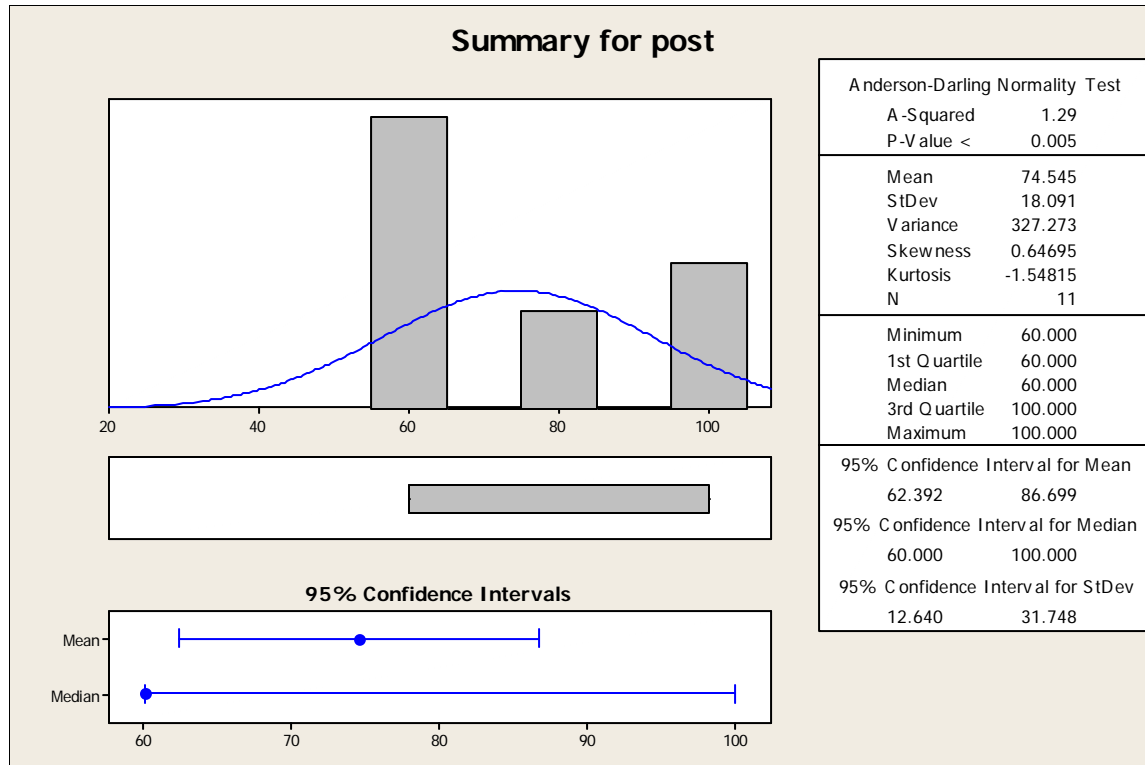
("Appendix I: Box Plot Result Instrument")

Instruction improved participants' scores on the same test at the end of the program, as is demonstrated in the comparative box plot below. The average on the test improved nearly 21 points (as is indicated by the line connecting the two box plots.)

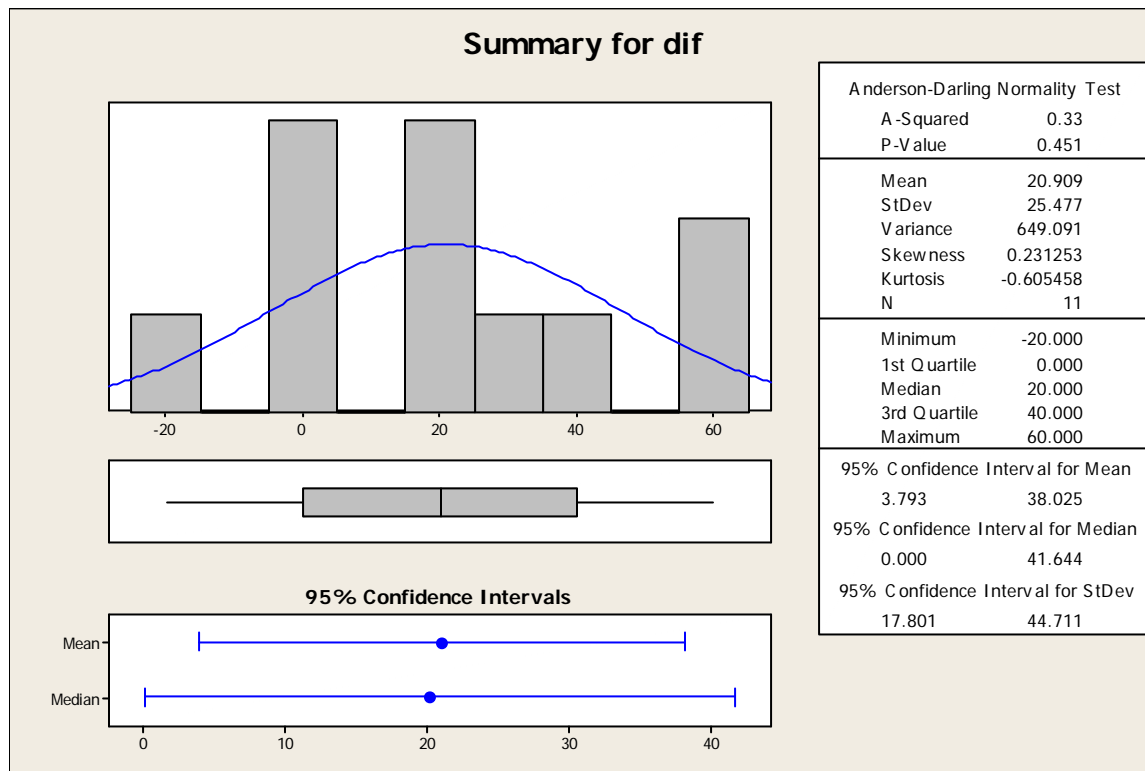


("Appendix J: Summary for Post Test Instrument")

The results for post test are summarized below. Following the supplemental instruction, the lowest test scores were 60, which is above the pretest average.



(Appendix K: Summary Pre and Post test differences Instrument)

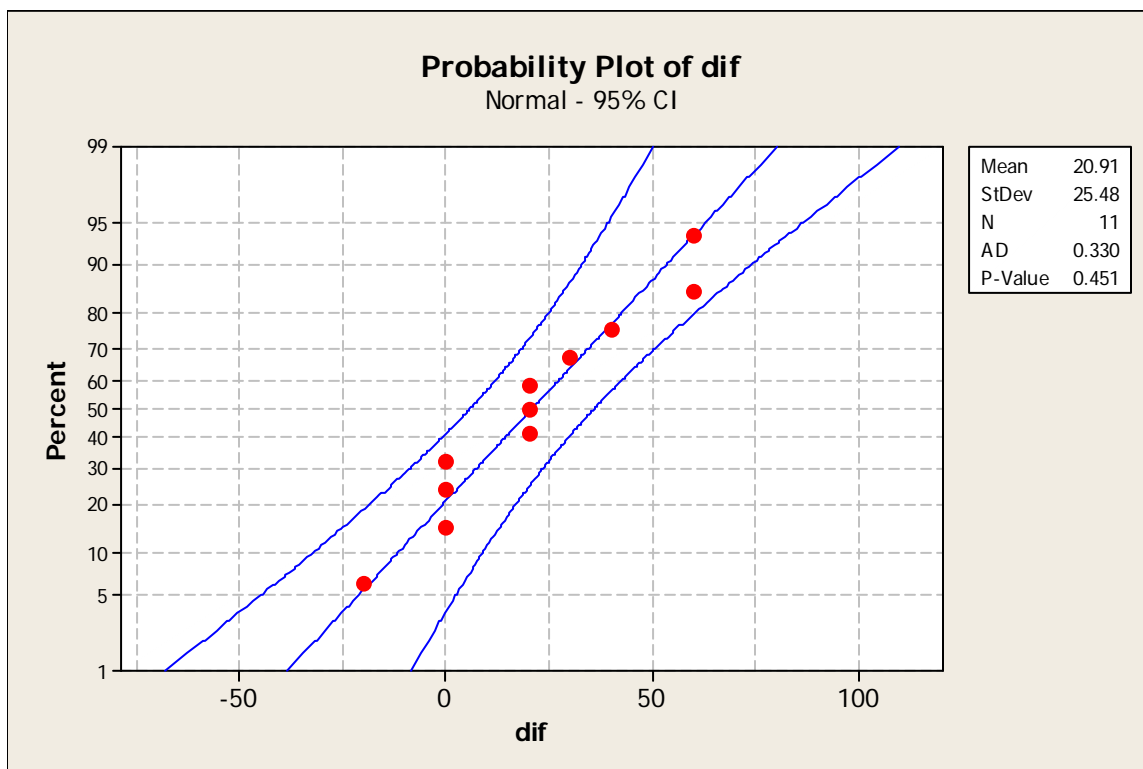


Descriptive Statistics: pre, post, dif

Variable	N	Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Pre	11	53.64	19.12	20.00	40.00	60.00	60.00	80.00
Post	11	74.55	18.09	60.00	60.00	60.00	100.00	100.00
Dif	11	20.91	25.48	-20.00	0.000000000	20.00	40.00	60.00

(“Appendix L: Paired T-test Instrument”)

To evaluate the efficacy of the educational program, I performed a paired t-test to test. While the sample size is small, the differences in test scores are statistically significant. Since the sample size was not greater than 30, in order to perform the hypothesis test, I first looked at the normal probability plot and the p-value attached to the Anderson Darling normality test. As you can see from the probability plot below, the pattern is approximately linear and the p-value is 0.451. This indicates that although there is an observed difference between a straight line and the pattern in the data, the difference is insignificant. Therefore, we can proceed with the paired t-test and be confident that the underlying data is at least approximately normally distributed.



For the paired t-test the change in the individuals scores are compared, not the change in the aggregate or average of the scores. This is important because I am interested in the effect of the training on the individuals.

Ho: $\mu_d = 0$ (There was no difference in the scores).

Ha: $\mu_d > 0$ (The scores improved).

The t-value for the difference in scores is 2.72 with a p-value of 0.011. This means that we reject the null hypothesis, that there was no difference in the scores. In other words, the data provides sufficient evidence to conclude that the scores improved significantly, that the observed improvement in scores is not just due to chance.

Paired T-Test and CI: post, pre

Paired T for post – pre

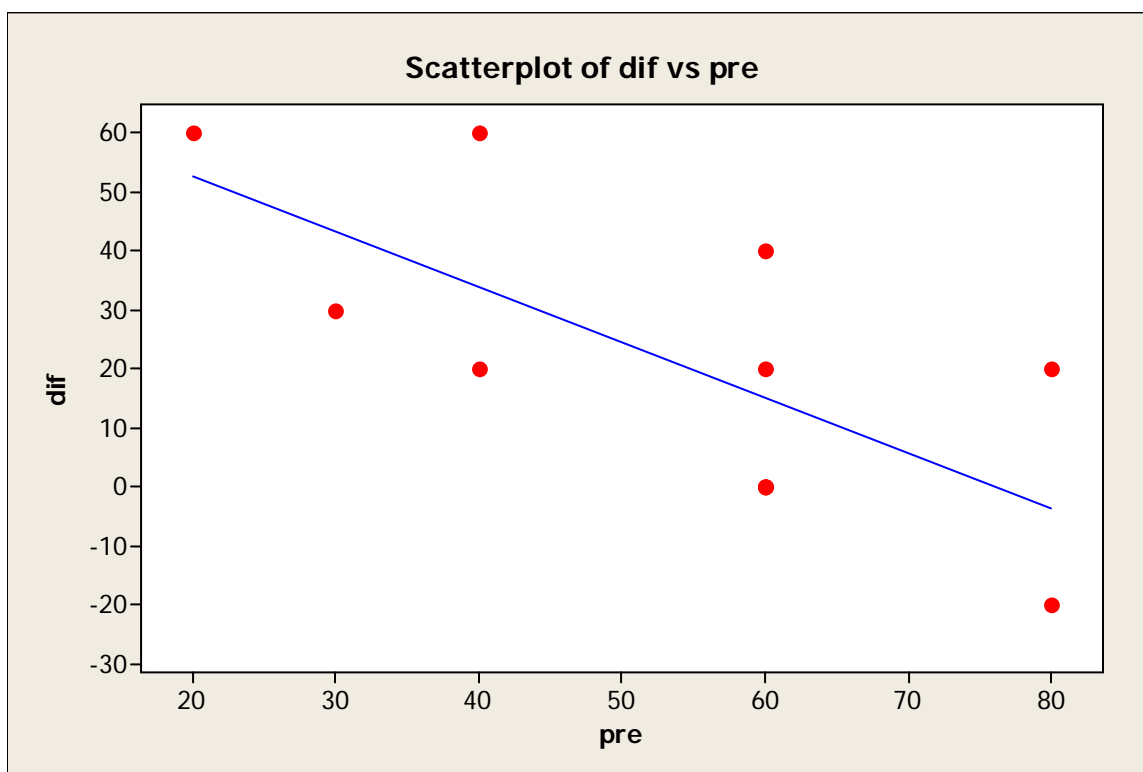
	N	Mean	StDev	SE Mean
Post	11	74.5455	18.0907	5.4545
Pre	11	53.6364	19.1169	5.7640
Difference	11	20.9091	25.4773	7.6817

95% lower bound for mean difference: 6.9863

T-Test of mean difference = 0 (vs > 0): T-Value = 2.72 P-Value = 0.011

("Appendix M: Scatter Plot of Dif vs. Pre Instrument")

Additionally, you can see that people with the lowest starting skill levels had the greatest improvement in their scores.



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Acknowledgements

I would like to acknowledge the following people who assisted me with this project.

- 1) Alicia Ward, Manager/Coordinator of the Baden ATTAIN LAB
- 2) Dr. Benadette Lanciaux, School of Mathematical Sciences at RIT.
- 3) Jemuel Johnson, former coordinator of Science Linkages of Rochester
- 4) Dr. June Watkins, Education Specialist and Joseph S. Brown Career/Employment coach
of Wilson Commencement Park.
- 5) Earl Barnes, Job Developer, Baden Street Settlement
- 6) Lori D. Nolassco, RIT Writing Lab tutor
- 7) Adawoa Botang, RIT Science and Imaging
- 8) Jennifer Freer, RIT Library Specialist

and very a special thank you to all others who supported me within the last year with this vision.