

To Be or Not To Be: Computer Equity and the Struggle of the Have Nots

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Abstract

The potential for universal computer access is something we must all believe in and strive for before our global village can be truly blind to difference. As the work force becomes more specialized, the technology gap between those who have access to communication technologies and those who do not becomes a critical issue. This paper lists and describes the circumstances which can cause individuals or groups to become "have nots". It will then look towards solutions to the computer equity problem by outlining models and criteria for computer access centers set out by the CTCNet. These models will then be used to evaluate a case study compiled on the Saskatoon Food Bank's GRAS Center's computer access center. To be or not to be computer literate is a question which should concern us all as we face the rapid increase of technologies at the turn of the century.

Potential is defined as that which is possible; not actually existing, but imaginable or expectable. **1.** For each potential, a criterion is set and must be fulfilled in order for the possibility to become a reality. Each one of us has potential and each one of us faces a unique set of criteria for fulfilling it. Someone who has the potential to become a professional baseball player faces the need for physical fitness, mental and emotional stamina and the need to be mobile. The potential criteria for someone owning a first house is a steady job, financial stability, good credit rating and a down payment. Potential is often seen as being determined by a person's convictions and desires; "if you want it bad enough..." Yet, we would probably agree that it is easier for some people to meet their potential than others, so perhaps a person's convictions are not the sole determinate of success. Why is this so, what are the opportunities and the barriers, and where is the line drawn between those that have fulfilled their potential and those who have not.

Introduction

To be or not to be computer literate, that is the question on which this paper will focus. In his State of the Union address on February 4, 1997 the United States President- Bill Clinton stated that by the year 2007 every household in America will own a computer. **2.** This statement was made in a North American economic environment where a third of the population do not own phones. It is nice to imagine universal computer equity; we definitely have the right to expect it, but beyond our imagination and expectations lies a social and economic milieu which makes the potential for universal computer access complex.

The desire for universal computer access is a recent struggle. A paradigm shift from the industrial age to an information based society has led to the rapid increase in technology. Just as the technology increases so does the language involved to explain and define it. These words and phrases are new and as such are not definitive; technological rhetoric tends to move and distort depending on whose power and interest is involved. None the less, I intend on using the language found in the literature and will therefore define the terminology from a cultural theorist perspective.

Terminology

Computer Literacy	Computer literacy is the ability to perform basic computer skills consistently, it also includes the ability to apply these skills to home, education, or employment environments.
Computer Equity	Although computer equity is used in discussions ranging from gender biased language in software to computer programming as a white male domain, I am using the term generally to mean fair access and the means to access computers and information.
Computer Access	Computer access refers to the ability of individuals to gain physical access to computers- it does not necessarily mean computer ownership.
Have and Have- Nots	Haves are people who are comfortable with computer technology and have access to computers, while have-nots are interested in becoming computer literate but do not have access at home, school or work.
Technology Gap	Technology gap refers to the difference in economic opportunities between the haves and the have-nots due to the rising importance of computer skills in the global market.
Universal Service	Universal service traditionally centered around telephone penetration, it is now used in the context of home computer ownership and information literacy through the Internet.
Community Technology Centers/ Computer Access Centers	CTC's or CAC's are computer labs that provide equipment and training for low income communities. The United States have a network of CACs connected through the Computer Technology Center Network (CTCNet), Canada on the other hand does not have a connected network and many of the facilities that could be considered a CAC do not realize it. CAC is often used to define regional bulletin board sites where residents can engage in commercial and non-profit advertising and exchange. In this paper I will use the acronyms CAC and CTC interchangeably.

learn computers. As part of her workshop programming, she feels the need to add computer training into her curriculum, but she feels that she is too far behind to learn the skills. Yvonne believes computer skills are as important as reading and writing, and extremely important for finding and applying for jobs. She is scared of computers and afraid that she will ask stupid questions. Although her two son's have computers, she believes her sons are too busy to assist her. She is convinced that she will be a slow learner and take too long to catch on. Yvonne is feeling very "out of touch" and doesn't see any way of working computers into her budget or into her schedule.

Social and Economic Change

Computer equity and the technology gap are increasingly becoming an issue because of a fundamental change in the social fabric. The latter half of the twentieth century has experienced what has been coined as a paradigm shift. Economic movement has shifted from industrial/national to information/global. **3.** The Post- Fordist **.4.** era has arrived, whereby the assembly line is no longer the most efficient means of production for an "industrialized country". "Information is gold"- the compiling and delivery of information is now as important a resource as land. After the three big auto makers, IBM- Canada's Software Solutions laboratory is the second largest exporter overall, employing 9,139 Canadians. **5.**

The nuclear family surviving on one income and one job, a job that traditionally needed less than a grade twelve education is now experiencing a shift to where the nuclear family is rare, and so is a one income, one job lifestyle. Companies have moved production of goods to underdeveloped nations because of costs. The job market in the first world nations have decreased and specialized. Grade twelve is the least accreditation needed for most minimum wage jobs, and post-secondary education is rising in cost. **6.** The economic shift has occurred so quickly that people suffer from unrealistic expectations, expectations taken for granted by past generations (such as a good home and a steady job). A large proportion of the North American population is unprepared for the economy which is unfolding before them. **7.** Many people face a lack of skills and a lack of funds to acquire relevant skills in order to enter into a specialized work force. Those with specialized skills have disproportionately high salaries and those who do not are finding their skills, once adequate- now severely undervalued. Just as a grade twelve education is mandatory for minimum wage so are computer skills. Three of the top ten fastest rising jobs in North America directly involve computers.**8.** From engineers to waitresses, basic computer skills are mandatory. So how does one acquire these skills and at what cost? The average computer, although declining in cost, bottoms out at approximately \$2000.00. This does not often include a printer nor the additional cost for Internet access through the phone lines or cable, another \$50.00 per month. **9.** Computer training, where available, can cost hundreds of dollars. The price to pay for computer literacy and access is steep , especially for those who are unemployed or under-employed and have to contend with feeding, clothing and housing themselves and their families. The technological gap between the haves and the have nots is becoming an epidemic. The job market has slowly closed off access to people without computer skills.

The Have Nots

It is generally agreed that computers and computer technology are still created by and for white middle-class males. Only 36% of Canadians own a home computer and 13% are connected to the Internet. **10.** It is not surprising that the have-not's represent a wide range of individuals, both in visible interest groups and individuals joined together situationally. The costs involved in owning a computer, the lack of relevant material on the Internet, the cost of training, and the predominately English and text content on the Internet are all factors which determine who become the have and have nots.

Unemployed or Under-Employed: The cost involved in owning and training on a computer is prohibitive for most individuals and families struggling to get by on minimum wage or assistance. Of households that made less than \$10,000/year, only 8.1% owned computers, of those households making between \$25,000-35,000- 15.9% owned computers and those households that are making over \$75,000- 64.4% own computers. **11.**

Racial Minorities: As with many other statistics such as employment and home ownership, racial minorities lag behind in computer ownership. White and Asian populations own 64% of household computers. In the United States, racial minorities especially Blacks and Hispanics have high representation at community technology centers. **12.**

Women: Although statistics of women and computers are on the rise, the statistics usually document application users. Traditionally excluded from manufacturing and production employment, women at 3,247 fall behind men at 15,605 in the production and manufacturing of computer hardware. **13.**

Elderly: The elderly face the difficulty of catching up with a technology that was not apart of their home, education or employment environment. For those still in the work force, the elderly face steep learning curves or obsolescence. **14.**

Disabled: People with disabilities are rarely looked at in computer statistics. Access is a huge barrier to the physically handicapped. Visually and mentally challenged individuals face difficulties in software and Internet navigation due to it's heavy graphic/text nature.

Rural: Due lack of institutional support and the isolation factor, the rural population fall behind in computer access and home ownership compared to urban statistics

Under- Educated, Low Literacy, English as Second Language: Although not interchangeable the under-educated, individuals with low literacy skills and the English as Second Language population all face the barrier that most software packages and Internet sites are in the English language. The readability rates on most software packages range from grades 8-10 and many Internet links have readability levels as high as second year university. **15.**

Saskatoon Food Bank's GRAS Center- Case Study #2

Roland is 36 years old, aboriginal, and a former inmate. He volunteers at the Food Bank as part of his Early Release Program. His youth was spent in and out of detention centers and prison. He has recently embarked on a healing journey and has found renewed interest in learning. Roland has played computer games and has typed on obsolete computers but feels that the technology is racing too far ahead for him to catch up to. In the past he has had the need for computer skills in training programs, but has avoided it. He knows that he can not keep up this avoidance behavior forever. Roland believes computers are as important as grade twelve. As a former inmate, he is experiencing difficulties in finding work and believes having computer skills may give him an advantage when seeking employment. Except for the Gras center, he only has access to computers at a friends house and at the library, unfortunately no training is provided at these locations. Roland is unemployed and can not afford to buy a computer. He would like to learn how to surf the Internet and how to create computer graphics.

Possible Resolutions

The need for low-cost or free access is the single most important factor involved in computer equity, followed by inexpensive training. One solution is the establishment of a community technology center in poor or low income neighborhoods. CTC/CAC are generally defined as places where a certain population can access computers and computer training for free or a minimal charge. CTC's usually are located in areas of easy physical access for the target groups. The target groups being any number of individuals selected from the Have Not category. Sometimes CTC's are broad based and attempt to provide access for groups such as the urban aboriginal population, the elderly or low- income neighborhoods. CTC's can be specific in nature and attempt to provide access for groups such as the low literacy population of a certain neighborhood or kids at risk on a certain street. As mentioned the CTCNet in the United States has created a network of CTC's and in doing so have established certain models and criteria for establishing and running a computer access center. CTC's tend to follow one of four models:

<p>1) General Public-Oriented Technology Centers</p>	<p>These centers provide access and training on computers and telecommunication technology. Such centers are open to anyone in the community without restrictions. These centers often offer business and commerce programs. Training starts at beginner levels and moves to advanced classes. Computers are available for drop in use as well.</p>
<p>2) Particular Population-Oriented Centers</p>	<p>Such organizations provide services to a particular population with particular needs. These centers usually offer a wide range of services, depending on the needs of the constituents. Computer training tends not to be the main purpose of the center, instead it becomes a conduit to obtain other objectives such as feeding the hungry or housing the poor.</p>
<p>3) Multi-Service Centers</p>	<p>These centers provide a range of services like child care, after school programs and housing advocacy. Computer access and training is just one of many services offered. These centers are usually located in a neighborhood house, a church or a community center.</p>
<p>4) Community Technology Program Networks</p>	<p>These centers not only operate their own computer access and training labs but also support and initiate similar programs among other community based organizations.</p>

Donations	Donations are usually provided to CTC's from individuals, private industry and other organizations. These donations can be of money but more often than not tend to be of technology. Because of donations most CTC's are not in need of computer equipment, they are in need of updated systems.
Grants	Private computer companies have plenty of "good-will" grants to offer underprivileged communities. Government community and employment development grants are available for the establishment of a CTC. It is generally easier to find funding for a project's initial set up costs and for short term projects. Moneys for operation, building costs and repairs and staff (unless the staff is part of the target population) are generally hard to get or are non-existent.
User Fees	In absence of grants and donations CTC's must often charge user fees to offset costs. In order to provide access for under privileged individuals, CTC's try to keep user fees as low as possible. Some CTCs ask for a \$2 donation, while others charge \$10 annual rate with discounts for families. Some CTCs charge as much as \$100 for classes.
Curriculum	CAC curriculum are usually broad in range due to clients with multiple skills and needs. Such issues as the inclusion of both hardskills (Windows Basics) and softskills (self esteem) are often debated. The quality of instructors are also an issue because of the need to rely on volunteers.
Public Access	Some CTC centers allow open access time for the general population to explore interest and develop skills at their own pace. These centers usually proceed on a drop-in and first come first serve basis. These centers also allow access to the Internet and e-mail accounts.

Structured Classes	CTCs usually offer classes in rudimentary computer skills, as well as the basic how-to skills in different programs such as word-processing, data processing and spread sheets. These centers will also offer more advanced classes in computer graphic applications and web design. Most classes at a CTC will be connected with other programs or classes offered such as job preparation classes, adult basic education, youth programs and family literacy.
Technical Support	Some CTC provide assistance for low income families to purchase computers or distributes older computer hardware to households who would not be able to afford it.
Outreach	One of the most important factors involved in CTCs is letting the target population know that the center exists. Out reach usually consists of education on the importance of technology and about the centers facilities. Media coverage, mail outs and community meeting are some of the strategies used to created awareness.
Physical Space	Although CTCs can exist with only one computer, usually the effective minimum is ten computers. A CTC must have a dedicated space for the lab and provide it target population with appropriate and relevant software and manuals. A printer is needed and public interest is increased when the centers provide such multimedia tools as scanners.
Staff	At a minimum a CTC needs a coordinator and one or two instructors to run efficiently. An assistant coordinator is often hired to carry the financial generating and awareness work load. The best case scenario would include the hiring of full or at least part time instructors who could create curriculum that was appropriate to the target population. But in most cases such centers can not afford to pay instructors and many centers rely on volunteers. 15.

early twenties in and out of prison. Keith has not finished grade twelve and has reading and writing difficulties. Keith has no experience with computers what so ever, not even through high school or games. He believes strongly that it is extremely important to have computer skills, especially for future employability. He is scared that he is too stupid and too far behind to catch up to how fast technology is advancing. Roland sees his friends kids that are 5 and 6 years old working on computers and he feels dumb because he has never even touched a computer. Aside from the GRAS center, he does not have access to computers or computer training. Keith is unemployed, with no future employment prospects, he can not afford to buy a computer nor take computer training. Keith is motivated to learn but uncertain of success.

The Saskatoon Food Bank's GRAS Center

Interspersed throughout this report are summaries of interviews done with participants at the GRAS center. The people in these interviews are representatives of the many target groups defined as have-nots, most of them are a combination of the categories. Their stories represent the fears and uncertainties that a lack of computer literacy can cause a person especially in terms of future employment. Although there are not any hard statistics on home computer ownership in Saskatchewan, this province has one of the more depressed economies and as such experiences lower rates of expendable income than British Columbia or Ontario. Saskatchewan also has a high unemployment rate and therefore has a decreased population who can afford the purchase of or the training on computers. As mentioned before the average computer costs \$2000 and a survey of computer training available in Saskatoon produced these results: **16**.

Education and Training Institutes

- CDI College of Business and Technology- offers night classes for five weeks from \$300-\$500
- PBSC Computer Training Center- offer full day courses in operating systems or applications- \$225/per day
- Manpower Training and Support- offers one day classes in Skillware-Windows'95 for \$150

Computer Sales and Support Providers

- Micro Age- Computer Center
- Computer Warehouse
- CompuSmart
- Nuwest Computers
- Top-LogiX
- (all advertise free computer training with the purchase of a new computer)

Other

- Saskatchewan Institute of Applied Sciences and Technology
- University of Saskatchewan
- Saskatchewan Indian Federated College

(all provide computer access for free or at a minimal cost but access is for registered students only and does not provide training)

- Metis Employment and Training Institute- job room, 2 computers available for free to use for resume writing , only Metis card holders have access
- New Careers Corporation- 3 computers available for free to use for resume writing, only individuals on assistance have access
- Sask. Employment Center- 1-2 computers available for free to search for employment and update resumes, only unemployed individuals have access

In light of these figures it is obvious that there is a need for computer literacy initiatives in Saskatoon. Thankfully a group of concerned community associations and businesses formed RIACT the Riversdale Internet Access Center and Training. It's mandate is to provide Internet access and training to the economically depressed community of Riversdale. RIACT has partnered with the Saskatoon Food Bank's GRAS center. This partnership provides RIACT with a physical presence in a urban poor area of Saskatoon. RIACT has provided the GRAS center with a lab coordinator and assistance as well as computers and a dedicated line to the Saskatoon Freenet. Through a grant from New Careers- the TRAIL project was formed to create appropriate curriculum for the computer center as well as to provide additional funding and awareness of the center in order that the systems and facilities may be updated. Shaw cable has donated free Internet hookup and delivery.

Serendipitously , the computer lab at the Saskatoon Food Bank's GRAS center has or is becoming a computer access center. As with the network of CTC's across North America, the mission of the GRAS Center's computer lab is to help bridge the gap between the haves and the have-nots. The result of the spontaneous creation of the GRAS Center's computer lab is that it was unawareness of other existing models. It is therefore useful to evaluate the GRAS Center's computer lab in terms of existing models in order to understand where it's potential lies.

Saskatoon Food Bank's GRAS Center's Computer Lab.

Model

Particular Population -Oriented Center

The Gras center's lab fits this model because its computer lab and instruction are not

the main purposes of the center but one of many activities provided in order to help underprivileged clients to gain more self-esteem, confidence, job-readiness and employability skills. The GRAS center is located in Riversdale a mixed racial and ethnic low income community. Although The Food Banks main objective is to rid Saskatoon of hunger; computer literacy is one of many activities that can increase reading/math literacy, motivation and employment opportunities- all of which could ideally help in eliminating poverty.

Funding

The Saskatoon Food Bank survives on federal, provincial and municipal operating grants. It also receives support in the form of donations of moneys, food, computers and help from private and corporate entities. The GRAS centers programming, of which the computer lab is apart of, does not need to charge a user fee, so computers and training are available for free.

Curriculum

The GRAS center provides workshops in personal development, cooking and sewing. As of now the computer lab has no curriculum. The end of June 1998 will see the launching of a software program at the GRAS center specifically designed for it's clientele. This program will cover basic computer skills up to advanced help in Internet navigation. The computer lab will run on a first-come first serve basis, as well as scheduled class time. Curriculum will focus on practical skill building- such as resume writing and job searching. It is hoped that the curriculum will encourage the development of both soft and hard skills.

Outreach

Once all the new equipment is installed and the Internet is running, the Gras Center and the TRAIIE group plan a media blitz that will include television and radio interviews, as well as posters and brochures to be placed in relevant locations. Specific sites such as the Friendship Inn will be targeted. This media coverage will educate the population on the importance of technology and speak specifically about the programming offered at the GRAS center. "Word of mouth" has been the only outreach strategy used as of yet.

Physical Space

As of now the computer lab at the Saskatoon Food Bank's GRAS Center is located in a small, narrow room with no natural lighting. It houses six computers, one 286 model allocated to the Saskatoon Free-Net, two 386 models and three 386/486 models. The computer all have Windows 3.1 installed. The 486 model is connected to a printer.

Donations that will be received by the GRAS Center shortly (as of May'98), will go towards the purchase of a computer with a minimum 150 Mhz, an SVGA (high resolution) screen, a keyboard, a printer and a network Netscape program- this will act as a server to the rest of the lab.

Staff

As mentioned before, RIACT has hired a coordinator and assistant for the computer lab. The TRAIL group will conduct computer skills workshops until the end of June 1998, after which time there will be no instructors teaching classes. 17.

Saskatoon Food Bank's GRAS Center- Case Study #4

Penny is a 27 year old single mother of two. As a result of dealing in drugs, she has spent time in prison. She has had jobs that required word-processing and data entry skills but feels her training is obsolete. She does not have access to computers or computer training any where other than the Gras center. She needs to update her skills in order to find a decent job to support her children. She can not afford training financially or time wise . She needs to find a computer lab that has child care facilities and that does not cost her too much money.

For each possibility a criteria is set and must be fulfilled in order for the potential to become a reality. The potential criteria for computer equity starts with concerned individuals, communities and corporations coming together with the shared goal of access. Indeed our future economic growth depends on initiatives which engage the under-privileged population of North America in the skills of a specialized market. The potentials are endless when we imagine universal computer access and must certainly involve an increase in participatory democracy, an ideal we in North America cling strongly to. Universal computer access is a potential we must believe and strive for before our global village can be truly blind to difference. To be or not to be computer literate is an issue that must concern us all.

Reference Notes

1. Websters Dictionary, 1992 version
2. Rose, Susan- page 1 of introduction
3. ... as in an economy involved in the extraction of raw materials and the manufacturing of goods to an economy moving towards the manufacturing, compiling and delivery of information via communication technology in a global market place.
4. "Post-Fordism" is a term used in post-modernist theory to define an era and mentality that is associated with the economic boom in the auto industry during

the 1950's

5. Ontario- Statistics Canada
6. the current cost of a university undergraduate degree is approximately \$10,000 for a four year degree, not including living expenses
7. " The department of Labor Statistics predict that computer and data processing services will be the third fastest growing industry in the next century, between 1994-2005 will see a 69.5% change." Rose, Susan- page 1 of background
8. Systems analyst, computer engineers and electrical pagination systems workers are in the top ten . Source: United Sates Department of Labor, Bureau of Labor Statistics
9. as quoted by the University of Saskatchewan computer store
10. Statistics Canada- Household facilities and equipment
11. U.S. Department of Commerce
12. U.S. Department of Commerce
13. Mark, June
14. Statistics Canada- Labour Force
15. U.S. Department of Commerce
16. Connie Gerwing- Woodland Institute- Councilor- Evaluation Report- Readability Score of Government Website- New Careers
17. Rose, Susan
18. phone survey of Saskatoon area completed by the author
19. case study- completed by the author with support and consent of Michael Millar- Director of the Saskatoon Food Bank, Joy Starr- Coordinator of the RIACT computer lab at the GRAS Center, the Attendance Center participants, and the Personal Development Workshop participants.

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* for an extended bibliography of resources on "Technology Access and Computer Technology Centers"- <http://www.ctcnet.org/biblio.htm#first>

* for an extended bibliography on "Equity in Educational Technology"- <http://www.netc.org/equity/bibliography.html>