Technology for the Poor: Revisiting "Hole in the Wall"

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Overview: This paper presents a critical analysis of an experiment in India called "hole in the wall" where corporation placed computers in Indian slums for children's use. Corporate motives for technology initiatives in slums are discussed in the light of critical pedagogical concepts such as hegemony, dialogue, corporate invasion in education, and inflation of credentials. In the end, the paper draws upon the "hole in the wall" example to caution school administrators towards the corporate technology investments in schools. The value of holistic and emancipatory education is reemphasized against the mechanical and superficial integration of computers in the name of education for poor children.

Introduction

Steven Jobs, one of the founders of Apple Computer who has distributed more computers to schools than anyone else on this planet told *Wired* magazine, "What's wrong with education cannot be fixed with technology" (Oppenheimer, 1997). Although still questioned, computers have taken their place in schools all over the world. Besides lack of evidence of academic improvement as a result of computers in schools, the issue of the Digital Divide, the gap between the haves and the have nots, is one of the concerns policy makers and administrators share.

The digital divide refers to "the perceived gap between those who have access to the latest information technologies and those who do not" (Compaine, 2001, para1). There is a big concern among policy makers that the growth in

information technology has accentuated the existing inequalities between the rich and the poor. The digital divide has furthered the rift between the industrialized and the developing societies, the rich and the poor within each nation, and the democratic divide between the Internet users those who use and those who do not use the digital technologies to engage, participate, and mobilize public life (Norris, 2001, p. 4).

Among many solutions to bridge the digital divide between the rich and the poor, are emerging Neighborhood Technology Centers (NTC). NTC are examples of how the Digital Divide may be bridged. These centers, equipped with computers are located in lower socio-economic localities marked with high illiteracy and non-English speaking populations. According to Stone (1998), NTC offers a model for technology use that is not a substitute for schools, but are part of a greater educational partnership designed to ensure that *everyone* has equal opportunity for technological enfranchisement.

One such center is the Harlem center situated in one of the lower socio-economic communities in the United States. It started as a free service, but later on a minimal charge was levied on the members. The central idea of the project was that people who come to the center leave with a product that they have made with computers as evidence of their success. The curriculum is what each person designs. Teachers emerge from the participating communities. The center is run mostly by voluntary members from the community, which gives them a sense of ownership for the center.

Another example is from Brazil, called the Passo project. This program teaches computers to slum dwelling children; however, it goes beyond teaching them just computer skills. The program is based on the educational philosophy of Paulo Freirie

who strongly believed that education should positively change social reality of its students. One of the staff members of Passo described the main goal of the program by stating, "it is not an ultimate goal to teach computers for poor children. What is more important is to change their lives." (Passo Project Home, para 16.) An example of changing social reality is stated by another project member, "AR15 is a common machine gun used inside slum areas. We can say that a computer is a real AR15. Arma Revolutionaria de 15 anos (revolutionary arm of 15 years), it means that 15 years is the age when slum boys become members of drug traffickers. But through this school they can find alternative to this. Computer is a revolutionary tool for them." (Passo Project, 15.)

In both the above examples, the centers are owned and run by the community. Learning computer skills is only one of the goals while, the overall objective is embedded in changing the social realities of its stakeholders. However, not all NTCs are built with the same ideology of community development. Unlike the Harlem center and Passo project that were community based, the phenomenon that I will now be presenting is an experiment, implemented by a corporation This experiment is called “hole in the wall” and was conducted in slums of an Indian metropolis, New Delhi. Before presenting this experiment I will describe the context in which the experiment was conducted.

Context

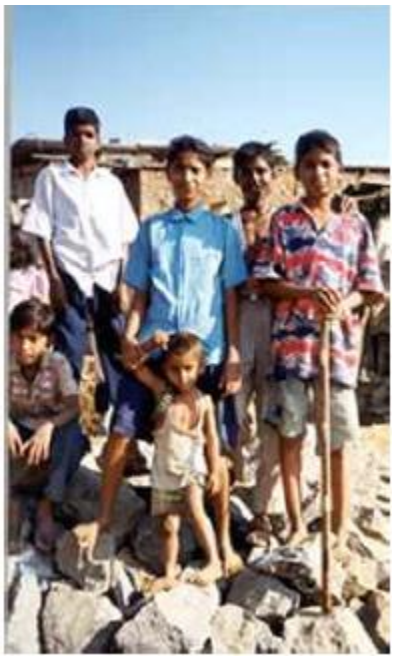
A billion people live in India-one of every six on the planet.

Half of them are literate

Only one in four has access to adequate sanitation

Some 350 million Indians live on less than a dollar a day

> Yet India is also home to some of the world's most advanced high-technology firms, and New Delhi is Silicon Valley East
>
> (Okumaro, 2002, para. 1)



Picture of children living in one of the Indian city slums, taken from The Newsletter of Washington DC Chapter of Asha for Education).

Although there is an improvement in economic and social condition in the recent years, over a quarter of India's population remains below the poverty line (World Bank, 2005). The prevalence of underweight children in India is amongst the highest in the world (World Bank, 2006). The huge gap between the rich and the poor, literate and the illiterate, is growing rapidly in India (UNDP, India). This divide is especially prominent in metropolitan cities like New Delhi and Mumbai, where at every edge of the sky-scraper lies a slum with bare minimum sanitation, an irregular water and electric supplies, sub-standard houses and tents cluttered with half-naked children. The typical slum child is poor, with torn clothes, with or without clothes, school-going but not interested in school and spending most of the time playing cricket on the street (see picture above).

One such slum also lies at the edge of a computer firm called NIIT in New Delhi.

The researchers at NIIT as cited in Information Technologies and International Development Journal claim that bridging the digital gap would provide a solution to the problems faced by the slum dwellers. Thus, they fitted a computer in the wall of the slum; "the hole in the wall" as it is known, which captured the attention of the whole world.

The first hole in the wall was built in January 1999 in the slum of New Delhi. There are more than one hundred such "holes in the wall" or kiosks in India. The funding for these kiosks comes from Indian government, world-bank, and other international finance corporation.

This experiment was first conducted in New Delhi to see if economically disadvantaged children could learn to use computers without formal instruction. A computer was connected to the Internet and was fixed in a brick wall of a nearby slum. The children started playing games, and painting pictures with it. Such kiosks were then duplicated in different parts of the country in similar localities. The children also play with various software and explore the Internet. These activities are unsupervised but are remotely recorded by the company.

The founder of "hole in the wall," Mitra, calls this experiment as Minimally Invasive Education (MIE). He defines MIE as a "pedagogic method that uses the learning environment to generate an adequate level of motivation to induce learning in groups of children, with minimal, or no intervention by a teacher." (as cited in Jha & Chatterjee, 2005, p. 2)

Picture of a typical hole in the wall kiosk taken from The International Journal of Development Issues.

Summary of theories and ideas for the analysis

The “hole in the wall” experiment described above will be analyzed in the light of the following critical pedagogy concepts:(a)“hegemony” by MacLaren (2003), (b)“dialogue” as viewed by the critical peadogist Paulo Freirie (2003), (c) “corporate invasion in to education” by Giroux (2003), and (d) “inflation of credential” by Miachel Apple (2003). The meaning and purpose of education by McLaren , Gandhi , and Rabindranath Tagore will also be described to further analyze the educational purpose of “hole in the wall”. The views of Indian educators Gandhi and Tagore are included in the

analysis as the "hole in the wall" experiment was conducted in India and most of the critical pedagogy concepts listed above are by Western pedagogists.

(a) Hegemony

Hegemony refers to the moral and intellectual leadership of a dominant class over a subordinate class achieved not through coercion (i.e. threat of imprisonment or torture) or the willful construction of rules and regulations (as in a dictatorship or fascist regime), but rather through the general winning of consent of the subordinate class to the authority of the dominant class (McLaren, 2003, p. 77).

The dominant class defines the social practices, forms and structures produced in agencies like school, state, and church in which the oppressed class unknowingly participates in their own oppression. The dominant class also dictates the "terms of reference" that is images, ideals, visions, etc on the subordinate class expecting them to adhere to this term of reference as a guideline to live their daily lives.

(b) Dialogue

According to Freirie (2003, p. 366), teachers themselves model social responsibility and construct with their students an atmosphere in the classroom marked with freedom, security and confidence that would help their students change their own social realities. According to Giroux (2003, p.380), social responsibility can be taught through "civic courage." By stimulating their intellect and imagination, teachers through dialogue and reflection can encourage students to challenge their social, political and economic forces. Some of the activities in which this can be done are class meetings and positive reinforcements of such acts by students.

Dialogue is the centerpiece of Freirie‘s teaching method. He defines dialogue as a conversation with purpose and focus between teacher and students. By discussion and extensive amount of open ended questioning by the teacher, the student engages in the topic under study. For Freirie questions and not answers are the core of the curriculum. Open-ended questions stimulate students to critically analyze their social situation and empower them to change it. In the process, the student progresses from personal reactions to social analysis, to consideration of action.

Teachers should help their students to discover that knowledge “is socially constructed, the truth is relative not only to time and place but to class, race, and gender as well” (Freirie, p. 377). Thus the teachers through dialogue and use of other creative methods should make the students realize what they read in textbooks, newspapers, and media is not always true.

(c)Corporate investment in schools: According to *Education Industry Directory* the for-profit industry represents potential revenue of about $600 billion revenue from the educational sector (Giroux, 2003, p.120). In the United States, many public schools have leased out school spaces like hallways, restrooms, and other space to corporations where children’s artwork often gets displaced by corporate advertisements. The quote from Giroux (2003) very vividly illustrates the corporate invasion in not only schools’ physical spaces but also in their curriculum:

> *Washburn Post* reported recently that McDonald’s gives elementary schools curriculum packages in which students learn how a McDonald’s

> restaurant is run and, in case they miss the point about future jobs, how to apply for employment. (p. 121)

(d)Inflation of credentials*:* Apple (2003, p. 453) contends that as the ethnically diverse groups, women, and working-class groups will gain more educational achievement, the job sector will raise the required credentials for entering the blue and white collar jobs. This structure of raising credentials maintains the class and race segregation in the society. Similarly, Apple points out that jobs requiring high level of computer expertise will be very few and with schools preparing more and more students as computer literates will simply be considered part of "functional literacy".

The meaning and purpose of education/Knowledge by McLaren, Gandhi and Tagore

McLaren (2003) states,

> Knowledge acquired in classrooms should help students participate in vital issues that affect their experience on a daily level rather than simply enshrine the values of business and pragmatism (p. 86).

However, today's schools have become factories to produce future workforce, rather than concentrating on holistic development of the students, values of business and industries today dominate the school curriculum. According to McLaren (2003, p.73) there are three forms of knowledge: technical, practical, and emancipatory. Technical knowledge is based on skills that demand empirical and hypothetico-deductive methods for learning. Practical knowledge is more liberal and is based on authentic experiences. The concept of emancipatory education as

introduced, by German social theorist Jurgen Habermas, refers to understanding of power and privilege relations in society and bringing transformation by collective action (MacLaren, 2003).

G*andhi's perspective on education*:

> It would not be appropriate for educationists today to concentrate on the development of the mind or intellect of a person, to the exclusion of his physical and spiritual faculties, since together they constitute an indivisible whole (Richards, 2001, p.13).

Unlike the narrow focus of developing math and science skills in the children that dominates schools curriculum all over the world, Gandhi's philosophy of education emphasized the overall character building of the individual, he believed that education should strive to manifest the latent talents and the qualities of the spirit. Any education that lacked depth in understanding the nature of the "self" is not true education for Gandhi (Richards, 2003). Gandhi emphasized on self realization, search for "truth" as the core objectives of education. He also believed that "Swaraj", that is freedom for the country will evolve as a result of holistic education. Gandhi also believed in "Sarvodaya", meaning 'universal uplift' or 'progress of all' thus educational opportunities that promoted holistic development of students should be availed for all people regardless of their caste or class.

Rabindranath Tagore's perspective on education "That education is a living, not a mechanical purpose, is a truth as freely admitted as it is persistently ignored" (Dutta & Robinson, 2001, pp. 192).

Rabindranath Tagore was a poet and philosopher who deeply believed in integration of art like of dance, music, sculpturing, painting, etc in the regular education. He opened an open air school called Santiniketan where music and other forms of art became the major focus of education. Santiniketan was not limited to children who were talented to be singers and painters; economist and philosopher Amartya Sen, the famous Indian film director Satyajit Ray, and Indira Gandhi, former prime minister of India, were all alumni of Santiniketan.

Questions and Issues

Using the framework of critical pedagogical concepts and perspectives on education by different philosophers as presented above, this section intends to question the motives of the "hole in the wall" researchers. Several published articles and conference presentation papers by "hole in the wall" team were compiled and analyzed. Also, websites with interviews of the NIIT researchers were reviewed. A list of these resources is provided in the reference section of this paper.

The discussion is arranged according to the following topics: role of hegemony, the educational value of kiosks, the potential of computer education to improve academic achievement, teacher free computer-aided instruction, and corporate motivations.

What is the role of hegemony?

The "hole in the wall" is the perfect example of the social theory of hegemony in action where the hegemonic corporate power makes the oppressed slum dwellers adapt to the control imposed by the powerful class. This process of hegemony is sustained, not by force, but by consensual social practices or norms. The dominant class wins the consent of the oppressed who unknowingly participate in their own oppression. The slum dwellers, without realizing the corporate political agenda, readily accepted that such an

intervention will bring bright futures for their children. They did not attempt to question the government agencies for supporting and funding the "hole in the wall" experiment over good teachers, textbooks, and access to basic amenities of living.

Although intervention by NIIT appears very philanthropic in nature, it is quite apparent that the "hole in the wall" experiment being reported in national and international journals, and covered extensively in media has served as a superb marketing strategy for NIIT products and services. On the other hand, besides kiosks that served as a tool for the experiment, there is no report of NIIT's financial or material contribution towards improving the physical or social conditions in these slums.

The "hole in the wall" researchers described their experiment as Minimal Invasive Education (MIE) for the poor children in slums which meant very little or no intervention by teachers. MIE is a "the terms of reference" as described by McLaren (2003) (that is images, ideals, visions, etc on the subordinate class expecting them to adhere to this term of reference as a guideline to live their daily lives) that was enforced by the corporate sector in which the slum dwellers readily accepted and participated in the experiment. Another "terms of reference" supplied by the corporation was a middle class ideology that technology can bring brighter futures to their children. Millions of middle class college graduates in India train themselves as "tech savvy" to occupy the booming technology jobs in India. Training children in slums to be computer literate in a MIE environment will bring better them better future is an undisputed dream or "the terms of reference" imposed by the corporate on the poor slum dwellers.

What is the educational value of such kiosks?

Some of the “hole in the wall" researchers were excited to report that, although unlettered, these children could learn the basic functions of the computer (Noronha, 2003, para.5). They also thought that language was not a barrier and the children had enough vocabulary to be proficient with computers. Thus, it seems that these researchers were mostly interested in enhancing the technical knowledge of these children and exposing them to the world of information. They had prioritized the learning of basic computer skills over learning language. Learning to read and write letters or language is an important part of education; it equips the skill of communication and helps in the process of emancipatory education.

The emancipatory education as described by MacLaren (2003) characterized by social action and change, can prepare the slum dwellers to question what is otherwise offered to them in the name of philanthropy. Instead of further instigating the fear of survival in the poor, government agencies and corporations should offer education that would help the slum children to critically understand social realities around them and take collective action to improve it.

Emancipatory knowledge makes its learners aware of the power relations that shape their everyday life in poverty. Thus, for example, Internet connected computers in an emancipatory education system would serve as a valuable asset if it would prepare these children to acquire skills and help them interact with government officials, know more about the different liberating movements around the world, and collaborate with other slum dwellers for social action.

Also compared to the concept of education by famous Indian visionaries and freedom fighters like Gandhi and Rabindranath Tagore, technical knowledge also seems

very superficial and limited in its scope. As discussed in the paper, both Gandhi and Tagore believed in holistic education, one that is not mechanical and which promises not only intellectual but also physical and spiritual upliftment of the learners.

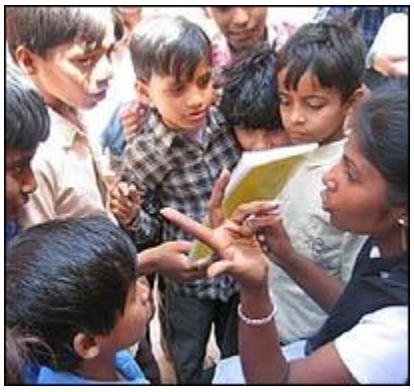
Can computer education bring academic achievement in slums?

By duplicating their experiments in various regions of the country, the researchers of "hole in the wall" collected data and claimed in various publications (list of publications at the "hole in the wall" website: http://www.hole-in-the-wall.com/Publications.html) that these experiments improved computer skills in these children and also their academic achievement. Although improving academic achievement was not their primary goal, as mentioned in their reports on their website, they claimed that some of these experiments can raise some level of academic achievement.

The report by Dangwal (n.d.) shows an increase in academic performance and performance on Math and English tests of the children who attend such kiosk compared to those who do not attend such kiosks in the slums. The school academic performance and two standardized tests developed by the researchers in English and Math were used to measure achievement. However, Dangwal has not mentioned of any control variables like growth and maturity in children, other interventions in the slums, etc.

There are a number of Non Governmental Organizations (NGOs) in India that work in slums, whose primary objective is to improve slum children's academic achievement. Pratham, Aasha, Mobile Crèches, are a few well known examples of NGOs working for slum children. Pratham runs remedial classes in primary schools in slums where they hire a teacher (baalsakhi) from the slum area and trains her/him to teach these

children who are at high risk of dropping out from school. In a UNESCO report called EFA Global Monitoring Report, Pratham has mentioned that their program has drastically improved academic achievement in these children. They conducted an experimental study where they recruited 15,000 children from different slums. The experimental group was given a remedial program where a remedial teacher mostly from the slum was trained to conduct small sized classrooms in slum areas. Other activities like running a mobile library are also mentioned in their report. This intervention showed a significant rise in the academic achievement as measured by school test scores of the experimental group. The picture below shows a social worker from Pratham distributing books to the children in slums. Mobile library has been a very successful program in these slums.



Picture taken from BBC, article: Runaway success of India's mobile books

Teacher free Computer-aided education

One of the researchers involved in the "hole in the wall" project said, "…slum children are deprived of school education due to parental pressure. These kids are pulled out and made to work to supplement the family income. We are trying to reach out to these children" (Kala, 2003, para). 14.)

The "hole in the wall" researchers also suggested that these kiosks could replace classrooms. Mitra mentioned, "While this approach is specifically for learning computing skills, our experiments and results suggest that the method can be easily adapted for

many other subjects as well. Using kiosks instead of classroom and collaborative, minimally invasive instructional methods form the core of the MIE model" (Mitra, 2000, para 18) One may find these comments by the "hole in the wall" team surprising considering that NIIT runs thousands of computer learning centers throughout the nation where mostly middle class and upper middle class children and youth pay significantly high tuition or fees to learn computer program from trained teachers. Furthermore, one may not help but wonder why should MIE be a pedagogy used for poor children, when the company supplies an abundance of trained teachers for the economically privileged class?

In another article in Australian Journal of Educational Technology, one of the "hole in the wall" researchers, Inamdar (2004) claimed that the Internet is cheaper than teachers. He stated, "I'm saying that, in situations where we cannot intervene very frequently, you can multiply the effectiveness of 10 teachers by 100-or-1000-fold if you give children access to the Internet".

It appears that the hole in the wall researchers considers teachers role to be very limited to one of imparting information which can be easily replaced by the Internet that can do the same job very effectively and economically than do teachers. This view of teachers is in mark contrast with that of the critical pedagogist Paulo Freirie who believed that fundamental task of teachers is a liberatory one (cited in Bower, 2003). Freirie believed that teachers can through dialogue help students understand their social reality and empower them to change their oppressed environments. In the 'hole in the wall' experiment, this empowering role of teachers is totally neglected, the powerful concept of

dialogue as described by Freirie seems to be compared and replaced by the technical computer vocabulary.

Referring back to Inamdar's comment on replacing teachers, shortage of teachers has never been a problem in Indian schools, although paid very low; even today there remains a long list of students wanting to enter teacher education programs. In terms of quality, some of the elite schools like Rishi Valley, and other international and private schools hire the best caliber teachers and also give them modern technology to support their teaching and education. Students from the elite backgrounds who attend such schools do not have to choose between machines and teachers, they get both.

On the other hand, Mobile Crèches is an excellent example of quality teaching in an economically disadvantaged setting. Mobile Crèches educates slum children and also the children for construction workers who live a nomadic life with bare minimum necessities. These crèches adopt a constructivist pedagogy where play and child centered learning drives the curriculum and pedagogy. Although, these teachers do not have a university degree, through its periodic in-service training, Mobile Crèches prepare quality teachers to teach in a child centered learning environment. When these teachers gain significant teaching experience, they train the new cadre of teachers. For more details on Mobile Crèches, please visit http://www.mobilecreches.org/pro_education.htm

What are the corporate motivations?

Providing computer literacy and exposure to the world of digital information enable slum dwellers to find a better future for them and their families (Noronha, 2003). Although, not explicitly communicated, this hope of good future has become a vital

question for the slum dwellers, “yeh daal-roti dega kya? (Will this give us food?)” they asked (Noronha, 2003, para.26).

“Mitra is convinced that computers can bring prosperity to poor, rural areas, and provide local jobs” (Okumaro, 2002, para. 11.) The team of “hole in the wall” researchers also claimed that “by providing IT training to economically disadvantaged sections of society, the increase in demand for skilled employees can be met” (Okumaro, 2002). Another researcher mentioned that “Once the slum people become computer-savvy, that’s when India will become the world’s premier cyber nation.” (Kala, 2003, para. 14.) India is certainly known today as a cyber nation, the boom in outsourcing has created demand for skilled employees. The question is whether the poor gets their daal roti (basic food like bread and butter) as a result of this cyber boom?

With the advent of technology jobs exported to India, every nook of metropolitan city has a call centre. Young college going, middle class youngsters work in these centers and this has brought a boost in economy. With more pocket money in the hands of the middle class there is certainly a big rush in restaurants, theaters and malls, but not having safe water to drink is still a dream for the slum children.

This is also relevant to the concept of inflation of credentials by Michael Apple (2003). As described in this paper earlier, this structure of raising credentials maintains the class and race segregation in the society. Training the slum dwellers with computer literacy will increase the supply of computer literate workers in the job market. Increase in supply of the computer literate workers will result in bringing inflation in the credentials, required for the computer related jobs. The report on CBS further reveals that only five out of 100 college going applicants are employed at call centers, which shows

that companies' demand for skilled employees is more than met, leaving no opportunity for poor school dropped children to earn their daal roti. Even if NIIT imparts computer literacy to these children in slums, they will never be able to compete with the other middle class youth with college degrees.

Another hidden benefit to NIIT could be that providing kiosks may be a good strategy to increase sales in computers and number of middle class students enrolling for computer lessons. Having the slum children using computers puts an implicit pressure on the middle class parents to buy computers for their children, so that their children are not left behind in this rat race.

Implications of the hole in the wall experiment

The striking difference between the Passo project, the Harlem center, and the "hole in the wall" is that unlike the "hole in the wall" project, Passo and Harlem centers were not an experiment to meet the needs of a corporate agenda but are managed and run by the slum dwellers themselves, for the purpose of changing their own social realities.

As Paulo Freirie (2003) rightly said, "…changing the consciousness of the oppressed not the situation which oppresses them, for the more the oppressed can be led to adapt to that situation, the more easily they can be dominated. (p.59)." Access may not necessarily bring equity but may in turn support the sustenance of the existing class segregation in the society through phenomena like inflation of credentials. With the widespread of corporate investment of computers in schools also explained by Giroux (2003) in this paper earlier, policy makers and school administrators should question the motives of corporate and private sectors' investment for technology in school. The school

administrators should not limit their focus on only developing computer skills in the students and prepare them for the job markets but should strive to adopt technology in the spirit of fostering emancipatory and holistic education. In the cautionary note below there are some objectives stated that would help school administrators, policy makers, funding agencies, and administrators and directors of the Neighboring Technology Center to get more clarity in determining whether their technology interventions are geared towards making democratic citizens or technocratic workers.

A Cautionary Note

It is very likely that with the wide spread use of computers in every aspect of our lives, will emerge many Neighborhood Technology Centers or kiosks. As a critical pedagogist how would one discriminate the good from not so good ones? "Democracy and Technology," an article by Glenn (1990) states some of the objectives technology education should fulfill. A few of these are listed below:

Democratic citizens in a technological age must:

- Understand the role of information in a democratic society and the issues related to the balance between the ideals of freedom, privacy, and the need for information
- Comprehend how data are collected, stored, analyzed and used in policy-making decisions.
- Be able to assess the quality of information being presented to them, whether it be in digital or visual databases…
- Explore topics related to technology to gain an understanding of how technology is affecting social, political, and economic issues

- Believe that they have the ability to access the information they need to make decisions (p.216)

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