New Immigrant & Low-Income Parent and Student Voices on Technology

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Abstract: Results and educational implications from this research project exploring new immigrants and low-income parents and students voices on the relative utility of educational technology, indicate that computer and Internet Access in the classroom alone do not help in bridging the equity gap. Educational and community policies must extend beyond the classroom for this transformation to occur. The educational community must understand that the true definition of "ubiquitous" as defined by Webster's dictionary and others is *existing or being everywhere, or in all places, at the same time; omnipresent.* This article will share parent and student raised concerns regarding such things as teachers' and the education systems' naiveté to this definition, and the need for teachers utilizing Internet activities and other classroom projects to embrace the "Least Common Denominator" model, rather than the "what's new and the latest software the school has" model.

Key Words: educational technology policy; informal technology education; digital divide; immigrant; minorities; transcultural, transmigrant

Introduction

For a select group of individuals—that tend to be well educated, more affluent and technology savvy—the computer and the Internet has provided unfettered mobility. For those who have been less socially and economically fortunate, computer and Internet use has had little impact on lifestyle options and opportunities – or has it? This study explores new immigrant and low-income adult/parent voices on the relative utility of educational technology. Specifically, the study reveals opinions about and attitudes toward educational technology, and the substance of opportunities made available to parents and young adults who intentionally choose to learn and experience more through and via technology. Research questions of interest include: What role does educational technology play in their social, political, and economic hopes and dreams? How does educational technology serve their economic, educational and social interests? What skills do they hope to acquire? How did they make use of program content? How can the classroom teacher and educational community serve both parent and children's needs better?

In order to systematically explore the perspectives of this group of people about the relative utility of educational technology, this study relies on several different approaches to data gathering. Inductive research and use of the qualitative and explanatory case study methods help merge different sources of evidence to include: individual interviews, on-site observations, retrieval of program relevant documents, and demographic questionnaires with sufficient safeguards to ensure study reliability and validity. Following the data collection, the study identifies and categorizes socio-cultural/transcultural themes that resonate across diverse cultural backgrounds, within a theoretical framework that are applicable to enhanced learning in formal educational classroom settings and informal technology enrichment programs.

Consideration of cultural influences, and transcultural phenomena, as well as an introduction of inequality issues surrounding low-income communities as viewed through the lens of sociotechnical changes (reform), are explored.

Purpose of the Study

Since the mid-90's several studies and reports have tried to document and analyze the impact that the information revolution could have on the lives of U.S. citizens (The Children's Partnership: America's Children & the Information Superhighway, 1994; U.S. Bureau of the Census, Population Survey, 1994;

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Internet and Computer Use, 2003; Pew Internet and American Life Project, 2001; American Community Survey, 2003; U.S. Department of Labor: Bureau of Labor Statistics, 2004; U.S. Department of Commerce: Education and Training for the Information Technology Workplace, 2003). Consensus of report findings indicate: information and communications technology (ICT) or "technologies" has spread faster than any previous communications invention and has begun to affect nearly every aspect of today's U.S. citizens; technologies have begun to change the way opportunity is provided to citizens across the fields of educational achievement, improved health, economic opportunity, and community participation; and gaps in groups who are missing out on certain benefits technology can offer, particularly low-income, and ethnic minority populations. These gaps document a disturbing inequality in terms of reaping the benefits of digital opportunity.

The purpose of this study is to explore whether, and in what ways, as viewed by participants, an informal, community based technology education program can help serve low-income and new immigrant populations and thereby help narrow the "digital inequality gap". This study constitutes a chapter in the ongoing efforts of new immigrants and refugees in the United States to manage the transition from one culture to another, one education environment to another, and one economic, political, social and cultural context to another. Specifically, the study aims to reveal the substance of opportunities made available to participants when they choose to join an informal community based educational technology program. Answers to questions like these promise to generate a database from which it becomes possible to assess appropriate approaches to educational technology policy making for diverse minorities. The study can serve as a springboard for action and further investigation.

Significance

Both the formal and informal educational systems are faced with the task of preparing children and young adults to succeed in an increasingly complex and competitive society where proficiency in technology is becoming a requirement for success. The 2002 Maryland Business Roundtable Report and the National Advisory Commission on Educational Excellence for Hispanic Americans Report suggests the need for targeted educational technology programs specific to low-income families, and labor and employment training including educational technology issues. Many in the educational arena suggest that these goals will be difficult for many ethnic groups because minority student's academic and motivational influences are complex. These influences include family, peers and cultural interactions, socioeconomic factors, as well as other external factors that education whether formal or informal "will not be able to influence." Research is needed to help educators and policy makers appreciate and understand technology's impact on minority, low-income and new immigrant achievement.

Theoretical Framework

Introduction

We are living through one of the most fundamental technological and social changes in history. "The revolution in technologies that took shape in the early 1970's, and diffused throughout the economy, society, and culture in the last quarter of the twentieth century, has profoundly transformed the way we live, work, produce, consume, communicate, travel, think, enjoy, make war and peace, give birth and die" (Castells, 1998, p.27). This revolution has restructured community demographics, and has reshaped urban communities, educational settings, workforce skill requirements, and political arenas. Thus, technology has caused a multidimensional transformation as technology interacts with businesses, economic strategies, social interests, cultural values, political environments, community demographics, and immigration. To examine the foundations of such change, an interdisciplinary literature review is necessary to shed light on the complex quilt that is woven by such interactions. The Internet is now universally referred to as the World Wide Web, thus implying complex interactions and connections between information. Similarly, the effects of technology are complex and have impacts on and are impacted by a variety of fields. Several disciplines form the framework of this research and are described below.

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First, a brief description of critical and transcultural theories and the advantages that influenced selection for the current study. A background briefing on the discipline of opportunity divide studies provides the landscape the investigation lives within. This is followed by an overview of the literature on technology's current and potential future impact on low-income individuals and communities. This includes studies that investigate cultural capital, social economics, urban issues, and policy implications. Next, inequality issues surrounding low-income communities as viewed through the lens of sociotechnical changes are discussed. This relies heavily on work done in the fields of social policy, economics, family and community studies, and urban development and planning. While the burgeoning literature on social economics contains information on community empowerment through technology, it falls short of explaining how different communities view technology from a cultural perspective. Literature focusing on the results of technology inclusion at the macro level helps provide a better understanding of its use in community empowerment, but fails to tie technology to individual needs at the micro level. This study examines individuals to provide answers to fill this research gap. To help guide the "cultural technology" connection this section will include a review of cultural studies (not necessarily technology related, but applicable), an exploration of immigrant literature (as this makes up a large percentage of the population the community is situated in), followed by a review of scholarly work on transnational/transculturalism theory. This section of the literature review will provide insight into the variety of directions research on cultural differences, immigrant perspectives and transcultural/transnational perspectives has taken, and the lack of focus on technology use. The concluding portion of the literature review describe how each of these pieces needs to be interconnected as each forms a critical piece in understanding the complex puzzle.

Theoretical Lens

Understanding the complex impacts of technology on society requires one to recognize and investigate an interrelated set of historical, cultural, political, social and economic conditions. This research's conceptual base is found in literature that cuts across several fields of study. Specifically, the theoretical framework of this study is grounded within critical theorist work and transculturalism. These bodies of research can be used to focus our understanding on technology's impacts on individuals and communities, and participant perspectives on its use.

Critical theory positions itself as oppositional to the modernist interpretations of life as equal, fair, and democratic for all (Carr-Chellman & Savoy, 2003). Critical theory allows one to uncover the "contradictions, social inequalities, and dominances" (Nichols & Allen-Brown, 1996) about ideas that society is to believe without question. Educational critical theorists (Apple, 1986, 1988, 1990; Bromley, 1992) have continually challenged the status quo with questions such as who really benefits, does the gap actually narrow or does it become even wider, and what are the economic implications of a given educational policy or innovation?

This research argues the ideas that society believes without question, such as does access to technology resources equate to technology literacy and in particular, does it requires insight from those who are impacted the most: new immigrant and low-income parents and their children. Critical theory attempts to view through a variety of lenses, and most frequently privileges the perspectives of disempowered populations. This privileging aligns closely with the basic values of this study in several ways. First, action research, and in particular participatory action research is a central foundation for critical research. Participatory action research is a research model with a purpose to improve an organization, individual or group with particular applications (Whyte, 1991). Participatory action research empowers those that have traditionally had research done to them instead of actually participating in the design, implementation, and subsequent application of the results of research.

Secondly, social constructivism, a form of participatory action research (Jonassen, 1994) has been a significant influence in both formal and informal educational settings over the last decade. This theoretical paradigm helps describe how initiatives such as informal educational technology programs can be a force for community building and social empowerment. Social constructionism, an extension of constructivism takes into account learning in context, addresses the issues of learning and development, while having broader social implications (Papert, 1990). Social constructionism promotes true social

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empowerment, arguing that members of a group need tools, skills and knowledge to help them control and develop their own social constructs, rather than operating as a consumer of information and activities that others produce (Shaw, 1996). To properly design participatory action research, one must first understand how previous studies investigated similar populations. Thus, the literature review will examine the research on technology's impact on those of low socio-economic standing.

Transnational and transcultural studies are used to examine when cultures and nations move beyond their differences and move to common ground, transcending their cultural and national differences. Work on transnational cultural phenomena has produced a great deal of important work, but has often left out the individual experience: how people's "agencies are implicated in the making of these effects, and the social relationships in which these agencies are embedded" (Nonini and Ong 1996 p.15). This study augments previous work by adding the individual perspectives and exploring the reasons behind the choice of technology as an instrument of force and change. The study will utilize Van Hear's (2003) migration framework for considering diverse kinds of movement to examine why educational technology is chosen by these individuals.

Anthropologists and sociologists, dating back to the 1980's have narrowed down transnationalism by focusing on the category of transmigrants – the study of immigrants who emigrate to a new country but have social fields linking their country of origin and country of settlement. These persons may incorporate and maintain cultural aspects which span both host and home country. There has been a push to put an analytic framework to this concept and in "effect to conceptualize and analyze transnational migration" (Glick Schiller, 1992). Transmigrants develop and maintain multiple relations, familial, economic, social, organizational, religious, and political that span borders. Their decisions, actions, and concerns are based on social networks that simultaneously connect them to two or more societies simultaneously (Glick Schiller et al. 1992, p. 1-2). Transmigrant analysis is not yet firmly established. Smith and Guarnizo (2003) argue that this definition offers little assistance for evaluating the subject as there is not a fixed level for analysis; are you looking at families, households, or individuals as transmigrants?

Although transnationalism has been defined broadly as the ways in which "transmigrants develop and maintain multiple relations—familial, economic, social, organizational, religious, and political that span borders," (Basch et al, 1994, p. 7), the ability to transfer between localities is a centerpiece of transnationalism. Research has shown this to be true of Mexican (Kearney and Nagengast 1989, Nagengast and Kearney 1990; Rouse 1992) and Caribbean transnationals (Guarnizo 1996; Basch et al. 1994). Basch mentions "the migrants moved so frequently and were seemingly so at home in either place, that at times it becomes difficult to identify where they "belonged" (p. 5). Rouse (1991, 1992) labels this experience "bifocality"-the capacity to view the world alternatively through different kinds of lens. Others, like Smith (2003), argue that "bodily mobility" is not necessarily a requirement. Some may physically move between locations, but others maintain a connection via letters, money, and other products that maintains connections to other locales.

Research in the transnational social fields yields detailed information on a limited set of activities and practices, not a clear picture of the breadth of the social field, nor of the demographics of the participants. How representative of the transmigrant population are the participants? Most work to date has focused on race and ethnicity (Basch et al. 1994; Glick Schiller et al. 1992; Popkin 1995) and therefore, Smith (2003) argues for gathering data on transnationalism social structures, processes, identities gender, class, and regionality. Gender has been raised as an important area of inquiry by several scholars of transnationalism (Georges 1992; Hagan 1994; Sorensen 1996; Sutton 1992,Goldring 1996). Rouse 1992 and Guarnizo (1996) briefly discussed class positions. Do people of different social classes participate in similar or different transnational activities, and do different classes enjoy similar or different costs and benefits from these ties? Ogbu (1990) and Suarez-Orozco (1989) have investigated generation contributions.

Transnational studies are playing a key role in illuminating multiplicity. It is a slippery concept in that it has been used historically in similar yet distinct ways (Bourne 1916 cited in Levitt 1996). It is used to describe a wide array of activities, social movement, economic relations, mass media and m grant ties to

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their homelands. To help manage such a disparate group of analyses, transnationalism is often distinguished as being either viewed "from above" or "from below." Appadurai's (1990) term "transnationism from above" describes structures and processes that transcend an individual nation, and are controlled by the elite - political, economic, or social. "Transnationism from below" describes " the ways that the everyday practices of ordinary people, their feelings and understandings of their conditions of existence, often modify those very conditions and thereby shape rather than merely reflect new modes of urban culture" (Smith, M.P., 1992 493-494). Smith's vision of transnationism from below may arise from the lower classes, but by its existence creates a form of cultural power that transcends national boundaries. Everyday people can create change. Transnationalism from below thus supports and explains the ethnoscape of migrant social movements and coalitions. Hannerz (1990) states that transnationalism from below requires, at a minimum, a sensitivity to the social relationships of its participants and in fact may empower the under class and reconfigure existing hierarchies of power to the detriment of the elite. The study of transnationalism holds the promise of shedding new insight on emerging cultural processes-identity, political and economic transformations. It can simultaneously aid in identifying cultural differences and similarities while also pointing out barriers to full integration with the society of the country they emigrated to and will serves as an additional lens.

Background on a Discipline of Opportunity Divide Studies

Proficiency in technology is a requirement for educational success and for employment within the business community. For citizens to be able to meet the demands of continuing education or future job markets, they must be competent in a wide range of technologies. Familiarity and knowledge of the use of technology has been shown to result in several positive education and employment patterns. Krueger (1993) showed that workers who use computers (other variables held constant) earn 10-15 percent higher earnings than those who do not. Studies on computer-based instruction aggregated in a meta-analysis by Kulik and Kulik (1991) indicated that computer-based instruction results in positive student outcomes. Glennan and Melmed's (1996) initial data revealed positive effects on student and teacher attitudes and student achievement. Others view educational technology as a productive tool in learner-centered, interactive environments where students are challenged with authentic tasks (Dwyer, 1994; Means & Loson, 1994). Data examined by Collins (1992), in addition to Davidson and Ritchie (1994), reveal that computers result in positive effects on student, parent and teacher attitudes. Studies by the Maryland State Department of Education and the US Government (US Department of Commerce, 1995, 1998, 1999, 2000) have pointed to a growing gap between "technological haves and have nots." The gap in the past has been referred to as the "digital divide", defined as the gap between those students who have access to and make effective use of technology for education (formal and informal) and those who do not. This same concept is also referred to as the "opportunity divide" in technology access for workers, or the general population. While the name may change, the concept remains the same, some population groups are less likely to have either computers or other technology-based learning tools at school and/or at home. Although technology use isn't the only factor that contributes to academic and career "success", it is an important one because academic success and employment are becoming increasingly dependent on one's fluency with technology. As a result, educational initiatives and policies are being designed to target this gap.

The U.S. economy is increasingly dependent on a technologically literate work force (Lenhart, 2000). As the economy grows, this need grows accordingly. Thus, the need to increase the technical fluency of all citizens extends beyond benevolence; it becomes a capitalist imperative. The economic costs to society of a technologically uneducated workforce are well documented (Tucker, 1997). Government at all levels has turned its attention to formulating policies to increase technology literacy. The National Telecommunications and Information Administration in the U.S. Department of Commerce began publishing on this topic during the Clinton administration via its *Falling through the Net* series (1995, 1998, 1999, 2000), *The Digital Workforce: Building Infotech Skills at the Speed of Innovation* (Meares and Sargeant, 1999), *How Access Benefits Children* (1999), and *The Emerging Digital Economy II* (1999). These papers showing both the growing digital divide and the importance of technology skills for the 21st Century workforce led to the first large scale federal E-rate funding programs that supported discounts on telecommunications services, Internet access, and networking for schools and libraries. Additionally, funding of Community Technology Centers (CTC) and Technology Opportunities Programs (TOPS) were created to help support the narrowing of the digital divide.

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In 2002, the National Telecommunications and Information Administration's (NTIA) report *A Nation Online: How Americans are Expanding their Use of the Internet* helped justify the Bush Administration's funding cuts for both the TOPS and CTC initiatives. The report indicated that Internet access increased by thirty percent, and that Internet use was up in all categories regardless of income, education, age, race, ethnicity or gender. While current public policy and federal mandates distributing federal funding rely on the reports' findings, many (Caswell, 1998, Gordo, 2001, 2002, Krueger, 1993) argue that the report presents an inaccurate assessment of a complex social situation, presuming that having a computer with Internet access is the means that makes possible entry into paths for achievement that ultimately will solve the problems of the poor. Indeed, if access is the primary means to end all problems—then social inequality should not be an issue in the U.S. as the public libraries would fill this role. So if the NTIA report is correct, and the digital divide has gone away, why aren't all citizens technology fluent? Why do U.S. employers identify lack of technology skills in the workforce as one of their main problems? Current public policy argues that schools have and will continue to make a sizable impact on eliminating this have/have-not divide. The 2001 No Child Left Behind Act (NCLB) requires that every student be technology literate by the time they finish the eighth grade. Through NCLB, by 2005-2006, in order to receive federal funding, school systems/states must determine their definition of eighth grade technology literacy, and must have documentation of the percentage of its eighth grade students who are considered technology literate. Other interesting facts extracted from the U.S. Department of Education's Educational Technology Fact Sheet (2005), leads one to believe we are getting closer to meeting the NCLB technology literacy by eighth grade goals. These include:

- 99 percent of schools and 92 percent of classrooms are connected to the Internet.
- On average, 94 percent of schools are connected to broadband Internet access. 95 percent of the lowest-income schools are connected to broadband Internet access.
- In 2002, 8 percent of public schools lent laptop computers to students. Schools in rural areas (11 percent) were more likely than city schools (6 percent) and urban fringe schools (6 percent) to lend laptops.
- In 2002, 7 percent of public schools provided a handheld computer to students or teachers. Schools in rural areas (10 percent) were more likely than city schools (5 percent) and urban fringe schools (6 percent) to provide them.
- 23 percent of K-12 schools are using wireless.
- The gender divide in computer use has been essentially eliminated, as there is no overall difference between boys and girls in overall use of computers. Girls however are slightly more likely than boys to use home computers for e-mail, word processing and completing school assignments than playing games.

While these statistics make a strong case that the digital divide, as defined by access, has narrowed significantly, many still argue that developing scholarship on the digital or opportunity divide is complicated by limited datasets. Comprehensive and detailed longitudinal studies have yet to collect adequate data on how technology factors affect low-income populations both in the academic arena and the workplace. While some surveys like the 2002 NTIA, collect minimal information regarding home computer access and Internet connection, little data is gathered as to who and what is being done productively with technology (Castells, 1996). Yet, because society uses technology for economic benefit, it matters greatly if one is able to productively function with and via technology.

If as the reports argue, that the digital divide no longer exists in the U.S., why do employers state that their workforce is limited by a lack of technology literacy? Why are low-income families using what little resources (time and money) they have available to pursue additional training in informal educational technology settings? What is the formal educational setting not covering? What is the value added by these informal programs? This study will provide meaningful insights and will allow me to build a qualitative model to address these research questions about the processes and experiences by which new immigrants and low-income families can benefit from educational technology. Through this dialogue I hope to guide technology's use toward vital communities, and improved economic prospects for low income families. Such a discussion requires information to be built up in layers, and to such end this proposal will discuss

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technology's impact on low-income individuals and low-income communities, barriers to technology use, informal community educational enrichment programs and finally, cultural impacts on socio-economic development.

Research Methods

Setting

The technology program is run through the county *Parks and Recreation* housed in a local community center providing inexpensive programs for community members of all ages. The program is advertised through the printed *Parks and Recreation* catalog, an online version, as well as through word of mouth. Participants enroll in a variety of technology literacy classes for a small fee. Sessions utilize a constructivist based Digital Fluency curriculum (Pruitt-Mentle, 2003), which covers basic through intermediate computer skills, focusing on tools and products that can enhance the life, education, and work experience of the attendees. No grades or tests are given. Free time for technology exploration is also provided before and after class sessions.

Participants

Subjects were current and former parent and student participants involved in a local informal community educational technology program. From the over eighty who have participated in the program, 16 participants were selected. Those selected were program participants who were then able to answer questions and reveal the utility of educational technology, while also being volunteers who agreed to complete an information questionnaire and sign the consent agreement. To be considered for participation, participants had to be adults who had immigrated to the United States and who currently resided in the local area community (residential status is required to utilize the local community center).

Access

I negotiated access to the local community center where I conducted the study. I solicited participants from the current classes and past participants were contacted by making contact in person (several past participants frequent the community center for other related activities; child care; local festivals), by telephone, and by word of mouth through local community residents and community center employees.

Procedures

Interviews

Each participant was interviewed. Informal, semi–structured and unstructured interview techniques were conducted at locations and times based on convenience and appropriateness for the participant. All interviewees received an explanation of the study, and an informed consent form. An interview protocol was used to help guide the discussion when needed, and aided in taking notes during the interview, and helped facilitate the organization of thoughts and themes after the interview had been completed. Interviews were recorded (audio) with the participants' permission. Verbatim transcripts were done immediately after each interview. Reflective field notes were kept as they provided valuable information, which did not present itself in the transcript of a taped interview.

Observations

Data was gathered through observation techniques at events taking place at the local community technology center. This allowed me to see social patterns: how participants managed to succeed and attend, and how they negotiated their educational lives. I observed participant members while engaged in technology related activities. I was particularly interested in sites and activities they choose, what arrangements they made to balance home and education, how they interacted, how they shared computer knowledge, and how they interacted with the instructor(s). The protocol included both descriptive and reflective notes.

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Documentary Evidence

Documentary evidence also informed this study. Data was collected from documents generated by participants, for example, letters, resumes, job search activities, pictures, scrapbooks, cards, poems, homework, classroom projects and activities, etc. All documents and identification were made confidential and protected.

Questionnaire

Basic demographic information was collected thorough a questionnaire. Demographics, such as country of origin, number of years living in the U.S. and in the community, educational background, familiarity with technology, occupational status, economic conditions and cultural background, were gathered. Care was taken not to reveal participants immigration status, nor expose the specific nature of their employer.

Data Analysis

For this study, I followed Wolcott's (1994) three steps for data transformation: description, analysis, and interpretation of the culture-sharing group. Interviews were transcribed and field notes and observation data added. Coding was done through NVIVO software package.

Results

Early analysis at the time, leads itself to the following conclusions:

1. Participants view educational technology opportunities as positively affecting their lives in several major ways: job skills and access to employment opportunities, education and outlook on learning, individual technology goals, skills, and knowledge, personal efficiency, use of time and resources, civic participation and social community skills, and succeeding or enabling their children to succeed in school.

2. Parents use knowledge gained (like using the Internet) to address basic needs, and many have cultivated a renewed confidence in themselves and their ability to learn.

3. Parents and students believe teachers do not realize the severity of the equity and access issues raised when technology assignments or products that can be completed via technology are assigned (i.e., "those who can use the computer to complete their paper always get better grades").

4. Students feel that "school software" can be fun but "pretty unrealistic", and they wish teachers "would use more applications that we have at home or at the community center or library".

5. Students believe teachers use technology in inappropriate ways.

6. More women (independent of location of origin) feel the need to "better themselves" and by doing so feel they are also helping their children; men do not see how "learning" computers could really help them move ahead—although they do think it could be helpful for their children

7. Getting ahead can be seen as getting a better job, salary, education but also includes raising the bar in terms of social status in their "host transmigrant community" and in their host country

Implications for Practice

This study constitutes a chapter in the ongoing efforts of new immigrants and low-income families in the United States to manage the transition from one culture to another, one education environment to another, and one economic, political, social and cultural context to another. Answers help to generate a database from which it becomes possible to assess appropriate approaches to education technology policy making for diverse minorities.

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