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

- Results and educational implications from a research project exploring new immigrant and low-income parent and student voices on the relative utility of educational technology.

Specifically, The Study Aimed To

- Reveal opinions about and attitudes toward educational technology, and the substance of opportunities made available to parents and students who intentionally chose to learn and experience more through and via technology.

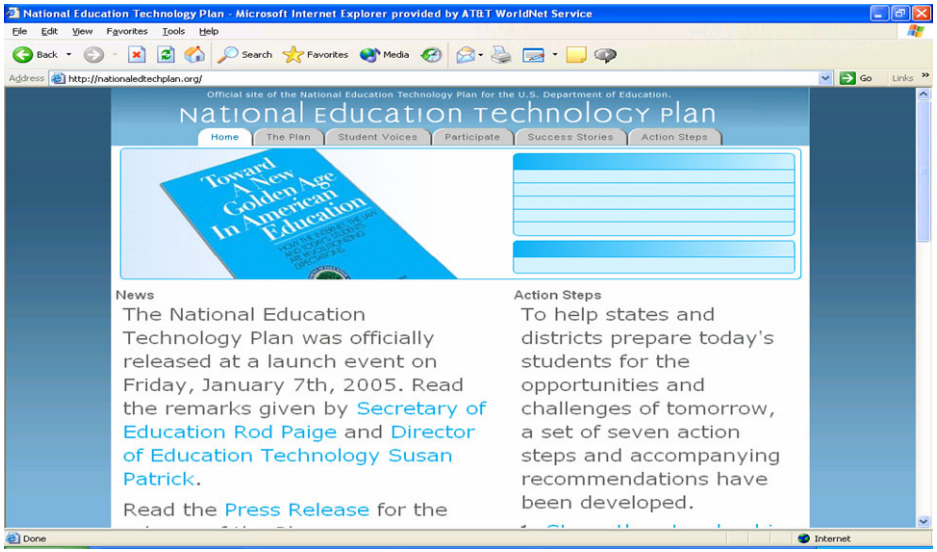
Questions

- Questions of interest include:
  - What role did educational technology play in their social, political, and economic hopes and dreams?
  - How did educational technology serve their economic, educational and social interests?
  - What skills did they hope to acquire?
  - How could the classroom teacher and educational community serve their needs better?

Significance

- Both formal and informal educational systems faced with preparing children and young adults to succeed in competitive society where proficiency in technology is a requirement
- The *No Child Left Behind Act* of 2001 requires all students to be technology literate by the eighth grade

Significance



- *National Education Technology Plan 2004: The Future is Now* lists seven action steps and **recommendations** including: all teachers and students should be adequately trained in the use of online content, and all students should have ubiquitous access to computers and connectivity (US Department of Education, 2004).
- *2004 Maryland Business Roundtable Report* and the National Advisory Commission on Educational Excellence for Hispanic Americans Report (2003) suggests the need for **targeted educational technology programs specific to low-income families, and labor and employment training** which includes educational technology issues.

Background on a Discipline of Opportunity Divide Studies

- Familiarity and knowledge of technology use has been shown to result in several **positive education and employment patterns**.
  - Krueger (1993)
  - Kulik and Kulik (1991)
  - Glennan and Melmed's (1996)
  - Dwyer (1994)
  - Means & Loson (1994)
  - Collins (1992)
  - Davidson and Ritchie (1994)

- Maryland State Department of Education and the US Government (US Department of Commerce, 1995, 1998, 1999, 2000) **pointed to a growing gap between "technological haves and have not's."**
- 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.
- Same concept referred to as "opportunity divide" in technology access for workers, or the general population.

The Disconnect

- 2002 National Telecommunications and Information Administration's (NTIA) report *A Nation Online: How Americans are Expanding their Use of the Internet*
  - Internet access up by thirty percent
  - Internet use up in all categories regardless of income, education, age, race, ethnicity or gender.
- Helped justify Bush Administration's funding cuts

The Disconnect

- Many argue report presents an **inaccurate assessment of a complex social situation**
- **Presumes** 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
- If access is the primary means to end all problems—then social inequality should not be an issue in the US as the public libraries would fill this role.

See: Caswell, 1998, Gordo, 2001, 2002, Krueger, 1993

The Disconnect

So if the NTIA report is correct, and the digital divide has gone away, why aren't all citizens technology fluent?

Why do US employers identify lack of technology skills in the workforce as one of their main problems?

Educational Setting: The Silver Bullet?

- Public policy argues that schools make a sizable impact on eliminating this have/have-not divide.

- No Child Left Behind Act (NCLB) requires every student be technology literate by the time they finish the eighth grade.

Educational Setting: The Silver Bullet?

- 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 % of schools and 92 % of classrooms **are connected** to the Internet.
  - Ave. 94 % of schools are **connected to broadband** Internet access.
  - 95 percent of the **lowest-income schools are connected to broadband**
  - 2002, 8 % of public schools **lent laptop computers** to students.
  - In 2002, 7 % of public schools **provided a handheld** computer to students or teachers.
  - 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."

Digital Divide
No Longer Exists in the U.S.?

- 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?

Methods

- Qualitative and explanatory case study method were triangulated using different sources of evidence to include:
  - individual interviews,
  - on-site observations,
  - retrieval of program relevant documents,
  - demographic questionnaires.

Setting

- Technology program run through county ***Parks and Recreation***
- Local community center
- Participants **enroll in a variety** of technology literacy classes for a small fee.
- Sessions utilize a constructivist based **Digital Fluency Curriculum** teaching 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 also provided before and after class

Participants

- **Current and former parent and student participants** involved in a local informal community educational technology program.
- From the 80 who had participated in the program, **20** participants were selected.
- Those selected were 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**.

Participants

- **5 males and 10 female adults** ranging from ages 18-45 (Mean =31)
- **5** participants who were **children of the adults** also attending classes, 4 female and 1 male, ranging in ages from 10-16 (Mean =12).
- **All but three** adults **spoke English** (six were bilingual). These three, one male and two females spoke **Spanish**.
- By gender and country, the participants broke down to: two females – **Tahiti**, two females – **Rwanda**, three females and two males **- El Salvador**, two females – **Mexico,** one male – **Guatemala**, one male – **Sri Lanka** and one female and one male **African-American** – US.
- Only one of the child participants was foreign born (one female from El Salvador) the others were born in the US.
- **All but one adult participant had children currently enrolled or previously enrolled in the local county school system**.

Procedures: Interviews

- **Each participant** volunteered to be 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** that suggested possible questions was used to help guide the discussion when needed, 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.

Interview Protocol

Example of Possible Interview Questions

Time of interview:

Date:

Location:

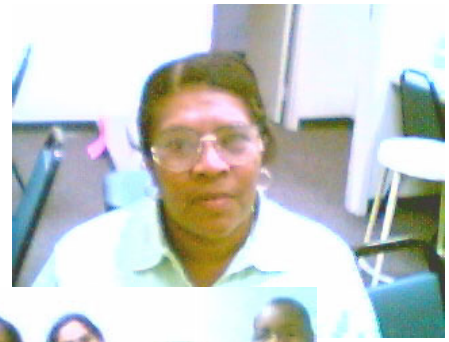
Interviewer:

Taped (tape number)/not taped

- Tell me about how you first became interested in technology? First used technology or a computer?
- How did you find out about this program?
- Is this your first technology class?
- Why did you decide to come/enroll in this program?
- What technology skills did/do you hope or expect to get from this program?
- Do you think this program is helping you?
- Are there other technology programs you have attended? Looked into? Others have told you about?
- How do you think this [informal community educational technology program] is different from others you have taken?

Observations

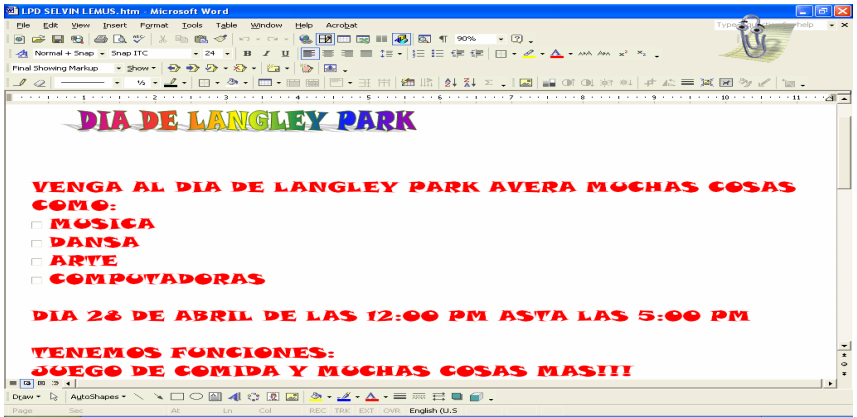
- Data were gathered through observation techniques at events taking place at the local community technology center.
- Allowed me to see social patterns: how participants managed to succeed and attend, sites and activities they choose, interactions etc…

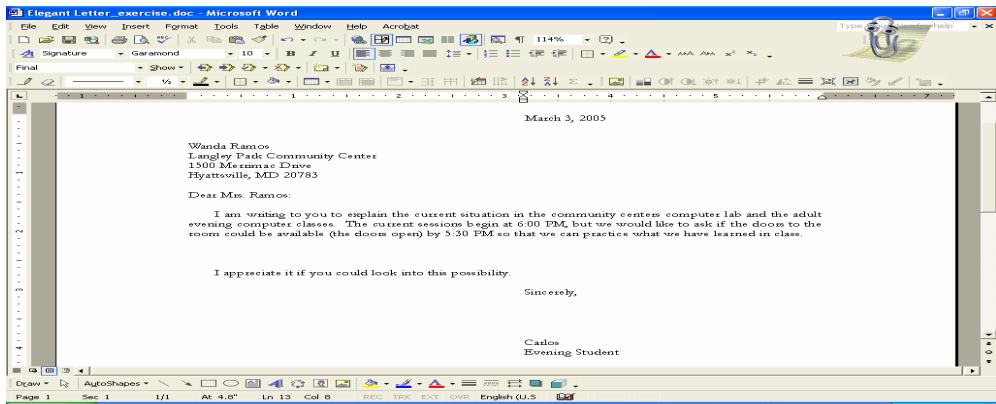


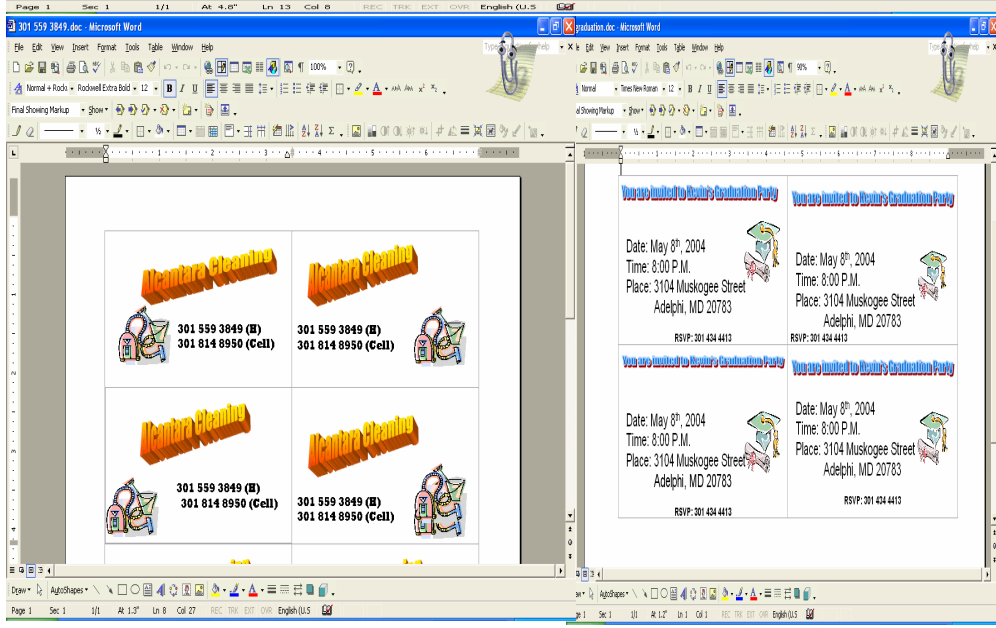
Documentary Evidence

- 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.
- All documentary materials were returned to each of the participants.
- Several items were given to the instructor as gifts (posters, invitations, business cards created, and poems).

Documentary Evidence







Questionnaire

- Basic demographic information was collected thorough a questionnaire technique.
  - 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
  - Care was taken not to reveal participants immigration status, nor expose the specific nature of their employer.

Discussion

- Themes emerging:
  - the role participants perceive educational technology to play;
  - skills and knowledge valued;
  - disconnect of formal education related to technology;
  - students (and children's) success in school

Role Participants Perceive Technology To Play

- 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 work wise or enabling their children to succeed in school.

Skills and Knowledge

- Parents enrolled in computer technology classes
  - "to learn more"
  - "find out more about using the Internet"
  - "so I can find stuff"
  - "email my family"
  - "to help me find a better job"
- Activities most popular
  - Resumes
  - Mapquest
  - Online translators
  - Business cards
  - Ads/flyers

Skills and Knowledge

- All adults having children enrolled in the public school system indicated the desire to learn more about technology **due to their children.** They wanted to find out more about,
  - “the risks and problems with using the Internet”,
  - “what my son [or daughter] is doing”,
  - “find out more before we look into buying one [a computer].”
  - “help my son [or daughter] with their work [school work]

Success in School

- All shared the need for their children to have skills with technology
  - “to do better in school”
  - “for a better job”
  - “to know more about it [computer use] to help” their child with their school work.
- When asked how they planned to help their child, several participants explained how their child **had to do a report or research paper** and needed to find information from the Internet, and also use it [word processor] to type up the paper.

The Disconnect

- "they [county library staff] tell you to just type it in." She and her child had gone to the library to look up information using the Internet, but even after typing in the topic they did not realize that the list of sites that appeared had to be selected to get to the information.
- "the teacher did not explain this and assumes we know…. I don't want the other kids to know" [that she didn't know how to search using the Internet].

The Disconnect

- **Parents and students believe teachers do not realize the severity of the equity and access issues which arise when technology assignments or products that require technology knowledge and access are assigned.**
  - "Those who can use the computer to complete their paper always get better grades…especially when it looks really good,"
- Parents and children expressed concern that while skills such as word processing were becoming essential, **no one really covered the how-to's in class.**
- Although in middle school they learned some basic typing skills on the word processor, there was really **no time to practice.** In addition, they wanted to know more about
  - "when I save it [the file] in the media center, I am not sure where it goes."
- Know more about printing so they could turn in the paper for a grade.
  - "While finding information and printing a paper is one thing, it can get pretty expensive when you have to print everything out".

The Disconnect

- While the media centers at schools and local area libraries can be helpful in allowing access to technology, if the student is not fluent with technology, time becomes a critical barrier.
  - "Just about the time I find something of interest, the bell rings" or "our time is up [local library]."
- Many students resort to "printing the material out." Yet, as one parent explained,
  - "no one told use how to cut and paste what we might want to look at later, or that we could just print out the one page."
- Parents and students felt that it was becoming too expensive. Many feel
  - "it's easier just to write it even though it isn't as good, and I might not get as good a grade."

The Disconnect

Teachers attempt to level the playing field by allowing extra time for reports, but equating access to solving the problem leads one to assume that access solves all problems.

One needs both access and knowledge/training.

Participants Believed Teachers Use Technology in Inappropriate Ways.

- "school software can be fun but **pretty unrealistic**"
- wish teachers "would use more applications that **we have at home** or at the community center or library".
- "I really like *Where in the U.S.A. is Carmen Sandiego?* and *Math Detective*, but it doesn't really help me with what I do at home."
- "I'm glad she gets to use the computer at school, but then I wonder **why she doesn't know enough** [about computer skills] when we go to the library or to help me."

- "Teachers are great at using PowerPoint and basic typing [Word processing], but don't **know a whole lot**."
- "I had to show my teacher how to insert page numbers."
- "One of my teachers swore up and down that double spacing could only be done by hitting the enter key twice."

Discussion

- The need to **know and have basic technology skills** that would allow them or their children to be able to “write nice reports” and do simple tasks like filling out applications and writing resumes.
- A central theme suggested that educators in the formal setting **make use** of technology, **but** in most cases that equates to “the teacher using PowerPoint or logging in attendance.” “Sometimes we can go to the lab and play games or for math [Math Blaster].”
- These findings parallel Wenglinsky’s (1998) research which documents that **access and frequency of use of educational technology does not necessarily lead to an improved environment for students.**

Implications

Answers help to generate a database from which it becomes possible to assess appropriate approaches to educational technology policy making for diverse minorities.

- Cutting edge applications ?
- Everyday/*Least Common Dominator*
- Increase teacher comfort level to allow students TO USE

Implications

- Comparative disadvantage between students with technology “know-how” and those without this edge
- Formal school setting = digital divide narrowed?
- Low income and immigrant students still lack the knowledge to use technology = the digital divide is widening.

The technology haves use word processors and worksheets and produce “better” work in a shorter amount of time. The technology have-nots struggle to use computers when they are required, and often must still resort to pencil and paper.

Questions?

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Lessons Learned

Voices From the Field

Practice Time

- **After School/Training**
  - Don't have time
    - Work
    - Take Care of Siblings
    - Need child care
  - Not allowed or times do not fit schedule
  - No help
  - Home computer too slow
  - Home computer "looks" different
- **In School/Training**
  - Not enough time in class
  - Classes too structured
  - Don't like to use social time to make up work
  - Lab time inconvenient
  - Need more "open" time - Internet there, but we can not use it
  - No one to help – teacher/monitor unable to help with questions

Quotes About Practice

- “Don’t have no computer.”
- “[I] Had internet, then dad got mad because they started charging a lot.”
- “Can’t understand. Looks different than at school. This [menu bar is] not the same at home.”
- “I can’t [go to friends to work on computers] after school. I take care of my brother.”
- My uncle got it for us. But he doesn’t know it either.”
- “Mom and dad can’t understand the book. They’re just learning English, well they know, but not a lot of those [computer] words.”
- “Would like to practice …but need to buy a computer.”
- “The things we use [in classes/in training] I do not have at home.”

Pedagogy***

- Software used irrelevant outside of classroom
- Teachers/instructors limit activities
  - Bookmark sites
  - Little searching activities (preset searching)
  - Not allowed to “do extra”
- Activities low level and/or drill and practice
- Software and websites should be
  - More practical
  - Culturally AND gender diverse

Quotations About Pedagogy

- "They [teachers] never let us explore other things …we can only do the assignments they want…even if we could add something to make it better."
- They [the teachers] are behind the times. They have us edit things and exchange disks…or use the computer to write an assignment but then print it out for edits…why can't we use the editing thing [track feature]?"

Quotations about Pedagogy (continued)

- "One of the hardest things is finding something [on the Internet] but they never let us do that—they always bookmark it or have us type it [URL] in."
- "When are we ever going to use *Inspiration*?"
- "The things we use are good …but we don't have them at home."

Quotations About Pedagogy (continued)

- "They [the schools] need to teach things we need to know for work."
- "We took a whole semester learning how to do a business letter…why couldn't we have used these templates?" [templates in word and downloadable templates-template Gallery]

Connections to Work

- Use software not applicable outside of school setting
- Need to make use of activities and applications that can be practiced later (at school, library, home)
- Need to teach content but within framework of activities that apply to work skills

Langley Park Adult Education

Work Related Quotations

- "I'm taking this class for work."- does house cleaning and wants to learn more about invoices, brochures etc…
- "I'd like a job at the bank…a bank teller…but my friend [works there] says I need to have some basic computer skills."
- "This is great [Mapquest]." "They [school] should show us this."
- One lady uses it to map out directions for house cleaning service and can now use it for more accurate mileage logs

Future Directions

- Connections between Science, Technology, Engineering, and Mathematics (STEM) AND Education (Ed-STEM)
- 21st Century Skills
  - Teach via inquiry base techniques
  - Student Centered
  - Workforce Connected
- Teacher-student connections
- More prolonged and focused impact
  - More than 1-2 teachers/school

Future Directions (cont)

- Student as design partners
  - Ethnic
  - Gender
- Exposing and emphasizing IT employment possibilities to teachers, students, parents, and guidance counselors

Ex: Young Scholars Program