
Using Design Thinking to Empower Ethnic Minority Immigrant Youth in their Roles as Information and Technology Mediarities

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Abstract

In the United States, almost one in nine people are foreign born. Further, children of immigrants and refugees accounted for the largest segment growth rate, between 1990 and 2008, in the United States for children who are younger than eight years of age. While diversity brings incredible richness, it also brings responsibility for helping immigrants participate fully in American life and culture versus isolating themselves within ethnic communities.

We propose an experimental multi-disciplinary framework that uses design thinking combined with perspectives from computer science, information science, and information behavior. Our approach seeks to deeply understand how ethnic minority youth serve as information and technology mediaries within their social networks, and blends these perspectives into a community-based, multi-day workshop format called "teen design days."

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Immigrant Youth and Community Participation

In the United States, almost one in nine people are foreign born. Nearly one in four children in the United States younger than the age of eight have immigrant parents [4]. Their ability to understand English fluently, cultural understanding, and technology competency will more than likely lead these children to take on mediary roles within their families and often within their ethno-linguistic communities.

While diversity brings incredible richness, it also reinforces the communal responsibility for helping immigrants participate fully in American life and culture versus situating themselves entirely within ethnic communities. However, the needs for help with everyday life, particularly through effective information services and technologies, are acute, due to an influx of immigrants from new countries, settlements outside traditional gateways, and increasingly complex language, technological, cultural, social, physical and financial barriers (See Figure 1).

Study Aim

Our proposed multi-disciplinary experimental approach

aims to better understand how young immigrant mediaries of all types help to overcome many of the existing barriers and increase the level of participation for themselves and their families in local communities that later can be situated both in the US and in their countries of origin.

Our past mixed-methods research—funded by the U. S. Institute of Museum and Library Services and the Bill & Melinda Gates Foundation—of 50,000 public library computer users showed two-thirds were searching for information and carrying out instrumental activities on behalf of someone else online [1]. Regression analysis identified these Information Mediarities (Info-Mediarities) as young (14-18), non-white, and non-native English speakers, suggesting ethnic minority youth are key for surfacing and understanding the information needs of their respective populations, passing on needed information to otherwise hidden users (especially non-English speaking, non-library users), and identifying the greater range of how libraries, search engines, information services and web applications can help.



Figure 1. Study participants at home.

InfoMe Study Approach

In our current research, entitled "InfoMe" (operating over two phases supported by Microsoft, the U.S. Institute of Museum and Library Services, and the University of Washington), we are employing a design thinking framework to gain a deeper understanding of how ethnic minority youth serve as information, technology, language, and cultural mediaries within their social networks and larger communities. The concept of design thinking originated from the design discipline and was coined by Dave Kelly and Tim Brown of IDEO in 2001. In the later part of 2009 the concept was popularized in a Harvard Business Review article written by Tim Brown [2] when IDEO was called to solve a variety of problems outside the traditional realm of most design firms. Since then, design thinking has been used to solve problems in business, address social issues (e.g., equitable public housing), support international development (e.g., sanitary water to rural villages in India), as well as in product design spaces. Design thinking involves three major steps: unspiration, ideation, and rapid prototyping [2].

Our proposed multidisciplinary experimental approach brings in the perspectives of computer science, information science, design, and information behavior; it uses research methods such as participatory design, action research, social networking analysis, rapid prototyping, and engineering. Our method integrates these perspectives and methods into a multi-day workshop format called "teen design days." These workshops are designed to gain an understanding of how and why immigrant and refugee youth act as Info-Mediaries to members of their social networks, especially their ethnic communities (and elders), and

how they can be supported through technology and information services.

Phase One: Teen Design Days

Though experimental, the core theoretical framework used in the design day workshops is based on a modified version of Meyers, Fisher and Marcoux's Tween Day Methodology [8] to understand how:

- (1) Ethnic minority youth surface the needs of others, communicate/provide information and technical help, and how they create, remix and manage information;
- (2) How elders and others engage with youth and benefit from provided assistance; and,
- (3) How these behaviors can be supported by design thinking .

The Teen Design Days are being held at community centers in Seattle. Such centers are gathering places or "information grounds" [5] for many immigrant communities across the United States. At the Teen Design Days, participants reflect on their Info-Mediary behavior using social network mapping tools, rapid prototyping, and cultural probes [6, 7] which involve storytelling, images, and dramatic play, as well as design, prototyping, and programming principles. Smart phones, laptops, Kinect controllers, and other devices are also being used along with technology experts from the University of Washington and Microsoft Research, who together devise ways of facilitating teens' current and future infomediary behaviors.

Phase One comprises six Teen Design Days where 20 female immigrant and refugee youth (ages 14-18) from East Africa meet for six Saturdays from 10am-4pm at a community center in South Seattle. We decided to conduct Phase One exclusively with female teens based on eighteen months of pilot work with both male and female Somalia youth that suggested having mixed genders in a study might yield weaker results. Moreover, prior research conducted by PI Fisher indicated that Info-Mediary work was statistically and qualitatively shown to be predominantly conducted by women, especially with regards to such domains as health and social support. We therefore decided to focus exclusively on the young women for the first InfoMe Study, and engage male youth in future work.

The Phase One, six Teen Design Days comprise the following exploratory/supportive themes:

1st Week: Surfacing Information Needs

2nd Week: Information & Support Searching

3rd Week: Information Creating and Remixing

4th Week: Information Management

5th Week: Information Sharing & Giving

The sixth session will consist of a final design "Mess Hall" and community showcase.

At each Teen Design Day, project staff and community members assist in meeting the young women's developmental needs for physical activity, competence and achievement, self-definition, creative expression,

positive social interaction, structure and clear limits, and meaningful participation in cross-culturally and gender appropriate ways through African dance class, beading, cooking, drumming, athletics, etc. This approach expands on Meyers, Fisher and Marcoux's Teen Days [5] by adding cultural and gender-appropriate elements, by including design thinking, and by infusing a stronger research element throughout the recreational pieces.

The first phase of our Teen Design Days ends with a community showcase where the participants share their experience with their parents, project funders, instructors, and city staff, who select prototype designs for further development and implementation.

Phase Two: Large Survey; Extended Teen Design Days; and Community Agency Workshops

Phase Two broadens the use of design thinking and draws on the findings from the Teen Design Day method honed in Phase One; we are carrying out a mixed-method investigation with immigrant and refugee youth in the Seattle area that focuses on public library and community agency innovation. According to Burke [3], of the 9,214 public library systems in the United States, about 75% serve patrons from over 30 countries, some up to 200 different nationalities. Libraries are therefore poised to provide solutions and local leadership that can benefit entire immigrant communities, affect policy-making, and provide social and economic development. Our Phase Two research thus focuses on empowering immigrant youth through information literacy, computer and Internet services and other innovations at public libraries. The research

goals of our second phase are being accomplished over three stages:

(1) Broad-Scope In-person Survey with 500 Seattle youth (ages 14-18, foreign-born, first generation immigrant, or speaking non-English language at home) to generate broad understanding of the nature of immigrant teen Information-Mediary behavior, and

(2) Teen Design Days with 45 youth (groups of 15, minimum three locations, three occasions each) based on modifications to the Phase One techniques that include providing feedback on paper prototyping of Info-Mediary services. In some cases the prototypes generated from Phase One will be field tested; and

(3) Workshops with public library and community organization staff on designing services for Info-Mediary ethnic minority youth. Project partners include the Seattle Public Library, the King County Library System, Horn of Africa Services, Vietnamese Friendship Association, and the YMCA of Greater Seattle.

Our novel research approach aims to further understanding of the relationships among information, technology, design, and empowerment in immigrant youth populations, and to assist those who act as information and technology mediaries for others in their social arena. It is poised to make future contributions to the fields of information science, computer science, human computer interaction, and design. The project can make a meaningful difference to people—locally and globally—by: (1) increasing our understanding of the information worlds of today's immigrants, particularly regarding service and policy implications; (2) elaborating on the model of how and why people

engage in info-mediary behavior and its inherent micro-behaviors—little systematic examination has addressed it; (3) expanding the current paradigm of information literacy to reflect informal information flow across social relationships and how library expertise can support inherent behaviors, especially around information needs, giving, and personal information management; (4) modifying the Tween Day methodology for teens with distinctive socio-demographic characteristics to the inter-disciplinary Teen Design Day approach; and (5) conducting workshops and developing specifications for tools for library and community organization staff to use in support of immigrants and other patrons.

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