
Designing Technologies for Non-Dominant Communities to Cross Social-Cultural Borders

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Abstract

Deficit-thinking models in education hinder opportunities for non-dominant communities to build capacity to transform. In line with poly-cultural, asset-based approaches to education, we propose the design of social computing technologies for parents of non-dominant students to participate in building resilient learning ecologies. Furthermore, we seek to design technologies that can broaden parents' opportunities to *cross socioeconomic and cultural borders* and engage in meaningful exchanges with members of other social structures, such as dominant groups and teachers.

Author Keywords

resilience, education, social media, parents, Latino immigrants, equity, inclusion

ACM Classification Keywords

H.5.m [Information interfaces and presentation]: Miscellaneous

Introduction

Persistent deficit-thinking models about the academic potential of individuals from non-dominant communities hamper these communities' capacity to transform [10, 18]. Researchers such as Gutierrez (2016), Moll et. al (1992), and Barton et al. (2004) have challenged deficit notions and have argued that, as population diversity increases globally,

we need new models for educational interventions that address issues of cultural diversity, social inequality, as well as robust academics [9, 17, 2]. To assist youth from non-dominant communities in becoming agents of their communities' transformation, they propose poly-cultural solutions that allow for differences to become assets and not deficits [5] so that vulnerable groups can strengthen their cultural wealth and learn how to use it to their benefit [18]. In line with that view, researchers on educational technology have proposed and evaluated technology-based interventions that use cultural values and interest-driven approaches as assets for fostering the learning ecology of non-dominant students [1, 25, 6]. Despite the potential of these initiatives, there is still pending work on the design of forms of agency for individuals in vulnerable circumstances to build resilient learning ecologies.

In this paper, we seek to extend existing work on technology, education, and non-dominant communities by addressing the needs of an often forgotten group of actors within the learning ecology: the parents. Although parental engagement is widely recognized as a key factor for children's academic success and social development [12], very little work has focused on the design of technology to give parents of non-dominant groups agency in the learning experience of their children. Based on our own previous work with parents, we propose to address the existing gap by exploring the design of social technologies that broaden parents' opportunities to *cross socioeconomic and cultural borders* and engage in meaningful exchanges with members of other social structures, such as parents from dominant groups, teachers, and other information holders within the learning ecology. Our previous findings lead us to believe that parents need to bridge their social capital to effectively participate in building resilient learning ecologies for themselves and their children.

To address this problem, we will narrow our focus to low-income Latino immigrant parents. Latinos are the largest ethnic minority in the United States and the fastest growing demographic [4]. However, Latino families in the United States face greater challenges on a number of fronts when compared to other families: a greater percentage of Latino children live in poverty compared to children of other backgrounds [23] and Latino youth have the highest school dropout [3]. Our goal is to design social technologies for this group that respond to their cultural and socio-economic context, as well as to their information and technology practices.

The following section describes previous educational research on the design of educational interventions for non-dominant groups. We also review the existing work on education, technology, and parents of vulnerable students. We then offer a brief overview of findings from our previous research with parents, which lays the foundation for our current research. We conclude with proposed research questions and potential methodologies for exploring the design of social computing technologies for parents, also highlighting how our work would benefit from engagement with the HCI Across Borders community.

Background

Education, Technology, and Non-Dominant Communities
Deficit thinking models have traditionally misconstrued the learning potential of communities whose culture, language or socioeconomic status differ from those of dominant groups. As such, these models have contributed to processes of deculturalization in education [20] that has systematically attempted to eliminate diversity [16]. Asset-based approaches to community development have challenged these deficit notions, and have stressed instead the relevance of looking at diversity in education for non-

dominant communities as a resource. For that purpose, many educational researchers have proposed a more ecological and situated understanding of learning that entails acknowledging home, family, culture and history as important components of learning ecologies [17, 13]. Approaches such as "funds of knowledge" [17] and "connected learning" [13] both argue that it is relevant to devise how to strategically link knowledge learned both in the classroom and at home. In addition, previous research has challenged traditional definitions of parental involvement in education and have argued that, the engagement of non-dominant parents entails a dynamic process where parents draw from non-traditional resources to issue their voice within formal learning environments [2]. We draw on existing asset-based approaches to propose technologies for supporting parents from vulnerable groups to actively and effectively participate in building learning ecologies for their children.

Although asset-based approaches have informed the design of technological interventions for children [25, 6], little work has focused on enabling parents to participate in their children's education [1, 27]. Despite the potential of these initiatives to support learning ecologies, none of this work seeks to specifically address the cultural, socioeconomic and information needs of non-dominant parents. Moreover, no existing work addresses such parents' needs and practices when engaging in their children's learning process. We address this gap by proposing the design of technologies that broaden parents' ability to develop social networks for facilitating the development and exchange of educational resources.

Technology for Connecting Across Communities

Social media and social networking technologies, such as Facebook, Twitter, and Instagram, have shown potential to enable individuals and communities to cross socioeco-

omic and cultural borders. These technologies have created room for people to increase their awareness of diverse perspectives and information by facilitating access to weak ties so as to bridge otherwise separated groups [11]. Indeed, social media's ability to propagate information across diverse audiences has played an important role promoting civic participation, which in turn has fostered resilient communities [24, 19]. However, previous research shows that not all groups have benefited equally from social media's ability to enhance information exchange across diverse networks. Uneven power relationships and socioeconomic, educational, and racial inequalities shape how people integrate digital media into their lives [26, 21].

For example, groups like Latinos in the United States connect to social media and Internet-based technologies at similar, and sometimes higher, rates than other groups of Americans [22]. However, their use of these technologies differs from that of their White and African-American counterparts. Language barriers, cultural differences, apprehensions about technologies revealing their immigration status, and fear of rejection by their host culture have a critical impact on their online participation [8, 14, 7]. As a result, Latino families use social media as a tool to communicate with those that share their culture, but feel disconnected from other Americans [7]. Such disconnection limits Latinos' possibilities to effectively build heterogeneous social ties that can widen their participation [7, 8] and improve their chances to advance in social status [15].

In this paper we propose to explore how technologies such as social media can be designed to foster the resilience of non-dominant communities, such as Latinos in the United States. More specifically, we seek to examine how social media can effectively connect individuals of vulnerable populations to cross social borders via educational channels.

Prior Research

This work is grounded in findings from research conducted in early 2016 on low-income parents and technology. Given the strong role of technology in schools these days, we studied how technology facilitates parents' engagement in their children's education. We collected and analyzed data from interviews with both high- and low-income parents, as well as observations of parents' online interactions with schools/teachers. Our findings showed that technology is not currently supporting diverse groups of parents to connect and exchange information beyond the homogeneity of their networks. As a result, not all parents are given the same opportunities to build resilience for helping their children advance academically.

To address this issue, we derived the following interaction design guidelines for technology platforms within the school environment: *(1) support equitable opportunities for parents and teachers to initiate interactions, (2) avoid being constrained by real-world community boundaries such as grade levels or schools, (3) provide a unified, organized and searchable source of school and parent-related information, (4) enable parents to easily find academic and non-academic information that fits their family's needs and context.*

Proposed Work

Findings from our previous work encouraged us to focus on designing, building and evaluating technology that could strengthen the resilience of low-income Latino immigrant parents, given their information needs, cultural practices, and socio-economic context. More specifically, our goal is to study how *social computing technologies* can be designed to enable Latino parents build connections with other parental networks so that they can *cross socio-economic and cultural borders*, and exchange diverse informa-

tion on how to effectively engage in their children's education.

To achieve our goal, we will explore the following research questions: *(1) What is the role of culture and socioeconomic status in the information practices parents use to make decisions regarding parental engagement strategies? (2) What are the communication practices between school-teachers and low-income Latino immigrant parents? (3) What assets do low-income Latino immigrant parents have that can be leveraged into the design of social media for supporting their parental engagement process?*

In order to answer these questions, we will conduct two sets of studies working closely with parents and teachers from an elementary school in the city of Atlanta we have established trust with. The first set will entail a mix-methods situated study with parents to understand the role of culture, information technology, and finance in how these parents engage in their children's education. The second set will entail a series of participatory design activities with parents to generate design insights and opportunities for technological initiatives that fit participants' goals and needs.

The results of this research will contribute towards technology design for community resilience, where these communities may include Latino children in learning contexts, but also, more broadly, traditionally vulnerable and marginalized communities, with a view to engage more equitable participation and wider information exchange. By examining the example of low-income Latino parents as they attempt to shape their children's academic potential, our research aims to identify culturally and socioeconomically acceptable opportunities for technology to integrate different communities so that available resources are effectively leveraged. This research has potential to greatly impact the value that digital channels bring to communities, even after goals of

bringing people online have been attained.

HCI Across Borders

Our research focuses on how non-dominant communities find their way into dominant social structures via educational channels. In particular, we examine the role that technologies might play in assisting parents as they participate in their children's learning experiences. We emphasize the role of harnessing diversity as a resource in this process, studying how this benefits both non-dominant and dominant communities. We believe that the challenges and opportunities that underlie the making of these connections will resonate with others at the symposium. We look forward to learning from other participants in regards to the sociocultural boundaries that their work brings unto light.

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