ICT for an Inclusive Ecology of Parental Engagement: An Asset-based Approach

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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 a study on how technology can support parents of non-dominant students, in particular Latino immigrant parents, in building resilient and inclusive ecologies with members of other social structures, such as dominant groups and teachers. The proposed study seeks to inform the design of technologies that can broaden parents' opportunities to *cross socioeconomic and cultural borders*, empowering them to engage in meaningful exchanges of information for effectively fostering their children's academic advancement.

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resilience, education, ICT, 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]. Re-

searchers 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 potential 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. Parental engagement is widely recognized as a key factor for children's academic success and social development [12]. However, very little work has focused on the design of Information and Communication Technologies (ICTs) that empower parents of non-dominant groups to actively participate in the learning experience of their children. Specifically, we propose an asset-based approach to research the current and potential role of ICTs in the connections parents build 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, for the ecology of parental engagement to effectively foster children's learning experiences, it needs to enable parents to bridge their social capital and expand their opportunities to engage in meaningful exchanges of information with others.

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 inform the design of ICTs for parents within this group that respond to their cultural and socio-economic context, as well as to their information and technology practices.

The following section describes existing work on asset-based research in the realm of education and vulnerable populations. We also review the role of technology in connecting members of different socio-economic, and cultural backgrounds. 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 opportunities for ICTs to support an inclusive ecology of parental engagement.

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 have

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 study the role of technology in how Latino immigrant parents actively and effectively participate in building learning ecologies for their children.

In the realm of educational technologies, asset-based approaches have mainly informed the design of technological interventions for children [25, 6]. A substantially smaller number of initiatives have proposed technologies for supporting parents engagement [1, 27], none of which have explored the cultural, socioeconomic and information needs of parents from non-dominant groups. We propose to address this gap by studying the information practices of Latino immigrant parents when connecting to other social structures, the barriers they face when needing to develop and exchange educational resources with other parents and teachers, and the strategies they use to overcome existing constraints.

Technology for Bridging Social Capital

Social media and social networking technologies, such as Facebook, Twitter, and Instagram, have shown potential to enable individuals and communities to cross socioeconomic 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 effectively help Latino immigrants in

the United States to connect across social borders. Our goal is to identify possibilities for ICTs to foster an inclusive ecology of parental engagement that support the academic advancement of children from non-dominant communities.

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 (both managed by schools and parents) 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 that support the ecology of parental engagement: *(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 lead us to propose a study of how ICTs can support Latino immigrant parents to build resilient ecologies of parental engagement, given their information needs, cultural practices, and socio-economic context. Specifically, we seek to understand how ICTs can harness parents' information practices so as to build connections with other parental networks, and to exchange diverse information 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 schoolteachers and low-income Latino immigrant parents? (3) What assets do low-income Latino immigrant parents have that can be leveraged into the design of ICTS for supporting an inclusive ecology of parental engagement?*

In order to answer these questions, we will conduct two sets of studies working closely with parents and teachers from an suburban elementary school we have established trust with. The first set will entail a mix-methods situated study in the households of Latino immigrant families, to understand the role of culture, information technology, and finance in how 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 supporting resilient learning ecologies, where these ecologies may include Latino children, but also, more broadly, traditionally vulnerable and marginalized communities, with a view to engage more equitable participation and wider information exchange in the realm of education. 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 learning ecologies so that available resources are effectively leveraged. This research has potential to greatly impact the value that digital channels bring to vulnerable communities, even after goals of bringing people online have been attained.

Conclusion

Our research proposes an asset-based approach study on how parents of non-dominant communities find their way into dominant social structures to foster resilient and inclusive ecologies of parental engagement. In particular, we seek to 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 workshop. We look forward to learning from other participants in regards to the sociocultural boundaries that their work brings unto light.

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