Using Online Social Networks to Support Underrepresented Students' Engagement in Postsecondary Education

Christine Greenhow and Kimberly Schultz, University of Minnesota, Digital Media Center, 212 Walter Library, 117 Pleasant Street SE, Minneapolis, MN 55455, Email: greenhow@umn.edu

Abstract: Participation in elective online social networks that enhance learners' connections to their local community and to distant others they perceive as similar may be especially important to the educational attainment and engagement of low-income students traditionally underrepresented in higher education compared to their upper-to-middle income peers. This poster presents the conceptual framework for the design and implementation of an online social network aimed at increasing the educational attainment, leadership and social engagement of such students.

Needs Assessment

Today there is widespread concern about providing equitable access to higher education and equitable learning opportunities for today's youth. Changing demographics in the U.S. over the next two decades, with a disproportionate increase in low-income and minority youth, are projected to lead to a decline in the educational level and per capita income of the U.S. workforce. Research has shown that students from low-income backgrounds do not currently earn admission to college or graduate at the same rates as middle-and upper-income students (NCES, 2001; St. John, 2000). Often these students are also first-generation college students who need more academic, social and other types of supports to stay in college and obtain their degrees than do their more affluent peers (NCES, 2001; Tinto,1998). Initiatives that enhance students' engagement and connections to their local community and with others they perceive as like them, can positively influence students' academic learning, persistence and retention in college (Zhao & Kuh, 2004; Bransford, Brown, & Cocking, 2000; Tinto, 1998).

Moreover, schools and colleges are increasingly concerned with developing technological fluency and 21st century skills among all students (e.g., capacity for creativity, collaborative problem-solving, research, digital literacy, and citizenship) as innovation and "knowledge creation are fast becoming the most important sources of new material and intellectual wealth" (Hakkarainen & Muukkonen, 2006; NRC, 1999; Barron & Kafai, 2006). Online social networking and Web 2.0 technologies offer under-explored solutions to supporting students' social engagement and collaborative knowledge creation in ways we have yet to comprehend (Stahl, Koschmann, & Suthers, 2006; Paavola, Lipponen, & Hakkarainen, 2004). They represent potential changes in the former "read-only" Internet, transforming it into a "read and write" Internet: a simple definition of Web 2.0, in which Internet users have much more control over their "data" in releasing it to certain groups and not others, allowing select groups or individuals to edit or transform a user's original data. While there have been a wealth of editorials of how Web 2.0 social networking tools such as *MySpace* are advancing young people's social lives, there is, to date, a lack of theory-based models and empirical evidence that suggests the educational implications of these networks.

This poster presents the preliminary phase of a design-based research project (Barab & Squire, 2004) involving low-income high school and college students across 14 institutions in an informal online social networking environment. Our goal is to examine whether and how participating in such a network impacts students' educational attainment, leadership and social engagement. Below we introduce our emerging theoretical framework and design implications.

Theoretical Framework

In our increasingly Internet-dependent society, there has been some move away from traditional classroom-based, location-specific instruction to virtual-learning environments. At the same time, the social context within which schools and colleges operate has in some ways moved away from hierarchically arranged, densely knit location-bound groups to social networks where boundaries are more permeable and hierarchies are flatter and more recursive (Wellman, Koku, and Hunsinger, 2006). Although substantial research has been conducted to examine formal online learning communities, fewer studies have tried to illuminate the types of interpersonal interactions, exchanges of support, trust, sense of belonging, and social identity that characterize loosely bound, online social networks of interpersonal ties (not tied to a particular educational program) and how students utilize these ties to advance their education (Wellman, 2001a; Wellman & Gulia, 1999; Granovetter, 1973; Haythornthwaite, 2002).

Penuel & Riel (2007) define a social network as a set of people and the relationships among them. These relationships can be concentrated in small subgroups, and the larger network can be defined in terms of the connections between subgroups. Conducting analysis social networks helps us understand how advice, information, and resources transfer from person to person and from subgroup to subgroup in the social structure. Recently, researchers have begun to use social network analysis to examine educational practices, such as sharing of expertise in online university research networks (Koku & Wellman, 2004) and in teacher networks (Penuel, Frank, & Krause, 2006). The social network approach can further illuminate computer-supported informal learning environments: how such environments affect the structure and functioning of social systems (e.g., within educational institutions) and how social structures affect the way computer-mediated communication unfolds (Garton et al., 1997).

Our emerging theoretical foundations for an online social network architecture aimed at K-12 and college students draws on: studies of *network ties* in the social network literature (offline and online); concepts of *social engagement* and its relation to school engagement; and recent applications of *social capital* in the educational literature. First, the social, informational, or material resources a pair exchanges characterizes their *tie* (Granovetter, 1973). Haythornwaite (2002) argued that as relational ties strength increases from weak to strong, so does the motivation to communicate, the amount of support communicated, and the amount and types of information/resources exchanged. However, strong ties (as occur in families) can require much time and attention to maintain. Donath and Boyd (2004) in studying online social networking sites claim that although *online ties* have been found to be weaker than ties established in real-world settings, such weak ties can prove extremely valuable in the midst of a life change or situation where one's local network is limited. Reviewing the social network literature, Mergel and Langenberg (2006) propose four characteristics that help to predict whether ties are sustainable or abandoned over time: individual, dyadic/group, structural, and content related characteristics. For example, younger, more extraverted actors going through a transition (i.e., college entry) who share preexisting friendship ties, values, or common membership in a group are likely to sustain online ties. Structural characteristics (e.g., whether or not a person is at the core of the network and the presence of "bridge-spanners") and content characteristics (e.g., whether ties are more emotion-loaded) also relate to tie sustainability, with the core network actors and experienced bridge-spanners and emotion-loaded ties as more sustainable.

Second, concepts of *social engagement* have attracted increased attention as a solution to declining academic achievement and retention (Fredericks, Blumenfeld, & Paris, 2004). However, researchers have focused less on the peer group than on teachers as a factor in the socialization of engagement (Ryan, 2000). Students who perceive that race and class constrain their educational opportunities, but who also have social supports that promote the development of agency and strategies for confronting difficulty are more likely to remain engaged in school (Conchas, 2001; Stanton-Salazar, 2001).

Third, a review of the educational literature suggests that social capital, the economic, cultural or symbolic benefits accruing to individuals by virtue of their ties with others, is positively linked to educational attainment and educational development (engagement, motivation, identity-formation). For example, peer group academic values and expectations, number of close friends attending the same school, seeing close friends weekly, discussion about jobs and education with adults were just some indicators of social capital that could positively influence educational attainment and development (Dika & Singh, 2002).

Design Implications

From this initial (condensed) review of the literature we offer the following design suggestions: 1) Ensure that network values (e.g., to graduate from college, become a leader, and support low-income K-12 peers) are transparent and embodied in the design; 2) Organize network activities around collaborative creation of meaningful knowledge artifacts; 3) Trust is a core resource. Create a structure where members can learn quickly about and from one another; 4) Create core connectors by pairing a few team members who already know each other; 5) Ensure that bridge spanners comprise 15% of the network; 6) Ensure that the site offers easy-to-use tools for collaboration, idea-exchange, publishing success stories, and access to outside expertise.

References

A complete list of references is provided at http://christinegreenhow.net/research/cscl07paper