Education and Urban Society

The Role of Social Network Locations in the College Access Mentoring of Urban Youth
June Ahn

The online version of this article can be found at:

Published by:
$SAGE

Additional services and information for *Education and Urban Society* can be found at:

Email Alerts: http://eus.sagepub.com/cgi/alerts

Subscriptions: http://eus.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

The Role of Social Network Locations in the College Access Mentoring of Urban Youth

June Ahn[1]

Abstract

This study uses social network analysis to describe the social network of college mentors in a college access program. Urban students in the program are paired with college mentors-students, professors, and other institutional agents-to help improve their college going process. The study analyzes the social networks within which the mentors are embedded, and highlights how different mentors have varying levels of social capital.

Introduction

Recent increases in the number of high school graduates enrolling in postsecondary education have done little to decrease the persistent enrollment gap between White and minority students or high- and low-income students (Brewer, Stern, & Ahn, 2007). One way that governments and private organizations have attempted to decrease the enrollment gap is through supplemental programs focused on college preparation. A particularly popular format for such programs is college mentoring. Mentoring is characterized by

[1]University of Maryland

Corresponding Author:
June Ahn, University of Maryland, College Park, College of Information Studies & College of Education, 4105 Hornbake Building, South Wing College Park, MD 20742
juneahn@umd.edu

a one-to-one (or one-to-a-few) relationship between someone possessing knowledge and skills and someone who could benefit from that knowledge and skill (Eby, Rhodes, & Allen, 2007). Some programs are exclusively mentoring, and others incorporate mentoring as one component amongst many.

College mentoring programs, whether implicitly or explicitly, are based on the ideas of social capital formation. The concept of social capital is diverse, and different theorists focus on disparate elements such as the role of social control, reciprocity, or membership in groups (Portes, 1998). In general Portes notes, "The consensus is growing in the literature that social capital stands for the ability of actors to secure benefits by virtue of membership in social networks or other social structures" (p. 6). One underlying assumption of mentoring programs is that the likelihood of college enrollment rises for low-income, urban, and underrepresented youth by increasing their social networks. The belief is that a larger social network of actors familiar with or involved in the process of applying to and enrolling in college allows students greater access to the information and resources they need to be successful. Education researchers have suggested that urban students, and students of color in particular, are particularly influenced by their school programs or other institutional initiatives when planning for college (Farmer-Hinton, 2008; Stanton-Salazar, 1997).

A significant research literature has examined the link between social capital and students' academic outcomes; however, few studies explore the specific network characteristics that may influence how social capital functions (Dika & Singh, 2002). For example, common theories suggest that students' access to institutional agents (i.e., school-based resources) is positively related to educational attainment (Farmer-Hinton, 2008; Stanton-Salazar, 1997). However, the general research literature has not yet measured how these actors may be different. In addition, extant research often treats all institutional agents as positive relationships when theorists have understood relationships to be both positive and negative (Portes, 1998). This article directly explores this gap in the literature and introduces the concept of *network locations* as one way to understand the variability of social capital present in a group of institutional agents: mentors in a college access mentoring organization.

The site of this study is a college-mentoring organization affiliated with a large, urban university. The program, henceforth referred to as CollegeMentor, seeks to provide low-income, urban, minority students with access to a mentor—typically a university student, staff, or faculty—well versed in the intricacies of the college application and financial aid processes. College-Mentor serves high school juniors and seniors who are college eligible, but who exhibit risk factors that make it likely they would not enroll in college or would enroll at an institution that does not match their ability level. The goal

of the program is to provide participating students guidance through the complex processes of applying to college and obtaining financial aid. Mentors provide students with expertise and advice. The program considers the transactional relationship between the mentor and the student to be a form of social capital. The mentor is also a member of numerous social networks, both within and outside the program, which affords the mentor the potential to mobilize multiple resources to assist his or her student.

The primary research question in this study asks:

> *Research Question 1:* What social networks do the mentors reside in and how do their locations within the network signify unequal levels of social capital?

In this article, I first frame the study within a network-analytic, social capital framework (Borgatti, Jones, & Everett, 1998; Lin, 1999; Stanton-Salazar, 1997). I utilize insights from social capital theory, and social network analysis, to understand how mentors' positions within a web of social networks are related to social capital formation. Second, I use social network analysis to examine the structure of mentors' social networks. Third, I present the findings of the study highlighting how mentors exhibit differential positions within their own social webs. This article provides a theoretical discussion of the importance of network location in social capital formation. Furthermore, I demonstrate how network locations may be measured and visualized using social network analysis. Understanding how mentors reside in different social networks, and thus differing levels of social capital, offers potential implications for mentoring interventions aimed at urban, minority youth.

Conceptual Framework

The value of social networks is most often connected to the notion of social capital. Social capital theory seeks to explain the unequal distribution of resources among individuals and the material consequences of such inequality. Different scholars focus on separate components of social capital (for a review see Dika & Singh, 2002; Portes, 1998), but Bourdieu (1986) outlines the particular view of social capital as the differential distribution of social resources that reproduce societal inequality. His perspective on social capital and social networks are most salient to the issue of college access mentoring. For example, college-access mentoring can be viewed as an intervention for underrepresented youth, which seeks to counteract their unequal access to the critical information and social contacts needed to successfully enroll in college.

I employ Bourdieu's (1986) explication of cultural and social capital to understand how a specific university mentoring program helps urban high school youth improve their college access prospects. First, Bourdieu introduces the concept of cultural capital as resources possessed by an individual. Cultural capital may come in the form of habits and states of mind, material possessions, or institutionally accepted symbols of status such as a college degree. In the mentoring program explored in this study, university students, faculty, and staff mentor urban, high school seniors through the college application process. The mentors in this program possess types of cultural capital that may assist these high school students. Mentors may help students schedule their time to meet application deadlines, construct college essays that adhere to the norms expected by admissions counselors, or assist in understanding the language of financial aid documents. Such knowledge, habits, and experience are forms of cultural capital that can be transmitted to these high school seniors.

Education scholars have identified particular types of cultural capital, in the form of college knowledge, which are positively related to college access and enrollment (Bloom, 2007; Deil-Amen & Turley, 2007; McCarthy & Kuh, 2006; Paulsen & St. John, 2002). These areas are generally college selection, application, financial aid, and institutional knowledge. High school students need critical information to help them compare institutions and select a final list to apply. They also need critical skills to complete a college application such as writing a personal statement. Students, especially low-income students, must further understand the process of applying for, interpreting an offer of, and accepting financial aid if they are to be successful in enrolling in college (Paulsen & St. John, 2002). College knowledge does not only apply to precollege processes. There are myriad institutional procedures, such as selecting classes or paying a tuition bill, which students are required to complete once on the campus, successful completion of which requires cultural capital.

Bourdieu (1986) distinguished social capital as an entirely different concept than cultural capital:

> Social capital is the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition—or in other words, to membership in a group—which provides each of its members with the backing of the collectivity-owned capital. (pp. 248-249)

Social capital then is the value of a network of relationships. One's relationships with others may be more or less institutionalized and requires some level of mutual acquaintance and recognition of each other. Mentors

and students in a college-mentoring program are involved in an arranged relationship of mutual acquaintance. They also recognize their roles in this mentoring situation, where the mentor assists and the student receives. Social capital is the value of this dyadic relationship between mentor and student.

According to Bourdieu (1986), social capital is also the collective resources of the entire group. The concept of collective resources extends the definition beyond the dyadic relationship, and into the realm of group processes. Viewed in this manner:

> The volume of social capital possessed by a given agent thus depends on the size of the network of connections he can effectively mobilize and on the volume of the capital (economic, cultural, or symbolic) possessed in his own right by each of those to whom he is connected. (p. 249)

He calls this process a *multiplier effect*, which means that the value of one's social capital is related to how well one's immediate connections can, in turn, mobilize their own networks for benefit. Bourdieu's explanation of a multiplier effect illuminates how high school students, via their connection with one university mentor, can benefit from a wider network of contacts. Whereas the mentor may directly transmit cultural capital, he or she may also mobilize his or her own contacts to help the student.

Social capital as the relationship between two individuals is fairly simple and clear to envision. Numerous examples of education research utilize the dyadic definition of social capital, measuring such variables as number of interactions between parent and school, the number of English-speaking friends present in Mexican Student networks, or the number of institutional agents (such as teacher, counselors, etc.) present in the social web of minority youth (Pascarella, Pierson, Wolniak, & Terenzini, 2004; Perna & Titus, 2005; Stanton-Salazar, 1997; Stanton-Salazar & Dornbusch, 1995; Stanton-Salazar & Spina, 2000, 2005). However, evaluating the role of group-level social capital or the factors leading to a multiplier effect proves to be much more difficult.

To examine social capital beyond the immediate dyadic relationship, the empirical questions of this study employ a network-analytic perspective to understand the *web of relationships* created in a mentoring organization (Lin, 1999; Stanton-Salazar 1997). A network analytic framework uses insights from social network analysis to define social capital as "resources embedded in a social structure which are accessed and/or mobilized in purposive actions" (Lin, 1999, p. 35). This definition compels researchers

to distinguish between the first level, immediate network resources of an individual, and a second level of social capital, which is the ability of one's immediate contacts to subsequently mobilize resources from their networks.

I use this perspective to examine the importance of *network location* as a factor that affects the impact of one's social networks for a benefit. Alejandro Portes (1998) observed, "The most common function attributed to social capital is as a source of network-mediated benefits beyond the immediate family" (p. 12). He reviews several social network studies that illuminate the differential locations of individuals within a network of relationships. He highlights a study of artist and intellectual communities in Germany that clearly showed a core web of relationships between the elites with limited connections to them for those who are located in the periphery (Anheier, Gerhards, & Romo, 1995). Being located centrally or in the periphery of a social group may have impacts on the social capital of an individual. Portes also finds that the network of relationships rather than the immediate contacts of a person mediate many consequences of social capital. For example, in studies of youth employment he observes that teenagers rarely find jobs on their own. Instead, information and job opportunities come to them through their parents and other adults in their communities.

Building from the idea that one's position in a social network is a vital element of social capital, Mark Granovetter (1983) distinguishes the differences between weak ties and strong ties. Strong ties are usually close relatives and friends within one's core network. However, weak ties are mere acquaintances who are a part of one's network. In his review of research that utilizes his strength of weak ties theory (SWT), Granovetter notes, "Weak ties provide people with access to information and resources beyond those available in their own circle; but strong ties have greater motivation to be of assistance and are typically more easily available" (p. 209). The mentors in this study represent weak ties for the urban, high school students. The mentors act as bridges to a different social network, one where knowledge about college is abundant, and provide information and resources to improve the college access experience of the students. Whether students are located within a web of strong and weak ties may influence their success in applying to and enrolling in postsecondary institutions.

Borgatti et al. (1998) outlined several common social network measures and their relationship to social capital formation. Their review illuminates additional ways that network locations may differ among individuals in a university mentoring organization. The authors theorize that one's immediate *network size* is positively related to social capital. The more contacts one possesses, the more social capital is available. A higher *heterogeneity* of one's

social network should theoretically offer more diverse sources of social capital, increasing the probability that someone can offer help in a given area. Group networks that exhibit more *closeness*, where the degree of separation between any two people is low, should facilitate better transfer of social capital. A contact who is far removed from one's social network should be theoretically less likely to offer assistance. The measure of *betweenness*, the number of times an individual is a bridge between two other people, offers distinct advantages to that individual. An individual with high betweenness links two actors who are otherwise unconnected. A final example is the measure of *constraint*. Highly constrained individuals are only linked to few, one, or no persons and are limited in the opportunities for leveraging social capital.

Much of the research literature on social networks, location, and social structure consider its implications in organizational theory, marketing, corporate partnerships, or innovation in business (Borgatti & Foster, 2003). In addition, a body of literature in the sociology of education has examined some social network measures in relation to schooling. For example, researchers have found that parental access to financial or time-based help was positively related to the number of years of schooling completed by students (Hofferth, Boisjoly, & Duncan, 1998). However, this positive relationship held for high-income families, with a negative relationship for low-income families. Such findings converge with general findings in other areas of network scholarship.

For example, Granovetter (1983) finds that weak ties were positively related to getting a job for higher socioeconomic groups but has a negative relationship for those in low socioeconomic communities. He posits that even if individuals in resource-poor social networks are connected to many weak ties, those peers in turn are unable to mobilize beneficial social capital. However in high socioeconomic groups, those peers are able to mobilize positive social capital to help an individual find a job. The findings of Hofferth et al. (1998) and Granovetter's review of job attainment research highlight the importance of network location. Where one is positioned in various social networks has differing effects on social outcomes such as level of schooling and occupation.

Ricardo Stanton-Salazar (1997) outlined how urban, minority students are located within multiple social networks. He particularly centers his analysis on how minority youth are differentially located within a web of peer and institutional relationships (Stanton-Salazar & Dornbusch, 1995; Stanton-Salazar & Spina, 2000, 2005). Minority, urban students are linked to individuals in multiple networks, from the home to school, church, and extracurricular programs. Stanton-Salazar particularly theorizes that productive network relationships between students and institutional agents are positively related to educational

success. Institutional agents are "those individuals who have the capacity and commitment to transmit directly, or negotiate the transmission of, institutional resources and opportunities" (p. 6). By linking students to mentors who occupy various positions in the university, the mentoring program that I analyze in this study attempts to increase students' access to institutional agents. The mentors directly transmit resources to help students apply to college, but an equally important question is whether the mentors can successfully negotiate the transmission of other institutional resources and opportunities. The dyadic relationship between mentor and student is clear, but do mentors mobilize their own contacts to assist in the mentoring experience?

The perspectives from prior work on social networks, college access, and minority youth suggest several considerations that frame this study. First, access to particular resources such as college information and institutional agents are positively related to increased college access. Second, minority student access to institutional agents—such as college mentors—increases the potential for the transmission of cultural and social capital related to college access. From this conceptual base, I focus this study on a third area of concern. The majority of education research only considers the access to resources that are immediate to the student, or the egocentric network of the student. However, merely being connected to an institutional agent does not guarantee a larger level of social capital. The concept of network location shows how the structure of social relationships may facilitate or hinder the flow of information, resources, and assistance in the college application process. Students are connected to a mentor in a university program, but the ability of that mentor to mobilize institutional resources is also a form of social capital.

In this study I do not focus on the urban, minority students who are matched with mentors in a college access program. They are already linked to an institutional agent—a college mentor—so this relationship is a given. Instead, I move one step further down the relational path to examine whether the mentors are located in differential positions in a web of social relationships. I posit that the network locations of the mentors differ in considerable ways. This variability in network locations is identified as possible factors that may influence the transmission of social capital. Utilizing Bourdieu's (1986) conceptualization of social capital, network locations represent a social structure that may have positive of negative consequences for the mentoring experience:

> The structure of the field, i.e., the unequal distribution of capital, is the source of the specific effects of capital, i.e., the appropriation of profits

and the power to impose the laws of functioning of the field most favorable to capital and its reproduction. (p. 246)

In this exploratory, descriptive study of college mentors, I examine the question: What social networks do the mentors reside in and how do their locations within the network signify unequal levels of social capital? The article further illuminates a network-analytic perspective on social capital, urban youth, and mentoring, a perspective that Dika and Singh (2002) note is a promising path that has not been pursued in the education literature.

Method

In this study I use social network analysis to map the relationships between institutional actors in a college mentoring program that serves urban, minority youth (CollegeMentor). The program is affiliated with a large, urban university and works with area high schools that often have few college preparation resources. The research design uses social network analysis to provide an exploratory, descriptive picture of CollegeMentor. As a descriptive study, the primary goals of this article are to show how mentors are located in different positions within a social network and how these network measures may be theoretically linked to social capital outcomes.

A social network survey was given to 62 mentors in CollegeMentor. The survey was distributed to all members and 42 individuals responded (68% response rate). The response rate accounted for 59 of the 62 volunteers (95%); that is, the 42 respondents provided enough social network data to incorporate 59 of the 62 mentors in the final analyses. I examine the sociometric data from these surveys to compute the structural characteristics of the mentors' social network.

The survey instrument consisted of three major components. First, I collected demographic information about the participants including their role in the university, and self-reports concerning their level of knowledge about four critical areas culled from the previous research literature: college selection, college application, financial aid, and institutional processes (Bloom, 2007; Deil-Amen & Turley, 2007; McCarthy & Kuh, 2006; Paulsen & St. John, 2002). Second, the volunteers were given a roster of the CollegeMentor program and asked to place a check mark next to the individuals they knew well. Lastly, the survey asked the mentors who they would turn to for advice concerning college selection, application, financial aid, and institutional processes. The survey data were coded to ensure confidentiality and entered into UCINET for social network analyses (Borgatti, n.d.).

Social network measures were computed for the entire mentor group. I first examine the overall structure of relationships within the college mentoring organization and describe several group measures. I report the average density of the group, which calculates the proportion of ties between individuals in relation to the total possible ties. A denser grouping of relationships would facilitate better communication between mentors. Second, I examine the average distance between individuals. If the average distance between any two mentors is low, then there is better communication between mentors since one does not have to go through multiple third parties. Third, I discuss the level of inter-group versus outer-group ties in this social network. A higher number of outside contacts signifies a larger pool of potential social capital.

In addition to group-level measures, individual network measures were computed for each mentor (also called *ego networks*) to compare their particular network locations within the group:

- Ego network size—this measure is the total number of contacts listed by an individual mentor. A higher number indicates a larger personal network of valuable relationships.
- Ego betweenness—an individual who is often a bridge between two other members has a high betweenness score. Being a bridge is a beneficial network location, because this individual will have access to a variety of relationships and play influential roles in connecting otherwise isolated people.
- Ego heterogeneity—the variety of other individuals that one is connected to. A higher variety of contacts denote better potential to contact someone useful.

Results

Using the social network data collected from the survey instrument, one can visualize how a high school student's connection to a university mentor may increase their level of potential social capital. Figures 1 to 3 below illuminate the growing social network created by linking a high school student to a mentor. The social network diagrams were created using the spring-embedding algorithm in the NetDraw component of UCINET. The spring-embedding algorithm iteratively locates nodes in the network and places those with the smallest distances to one another, closest in the diagram (Hanneman & Riddle, 2005). The visualization allows one to interpret
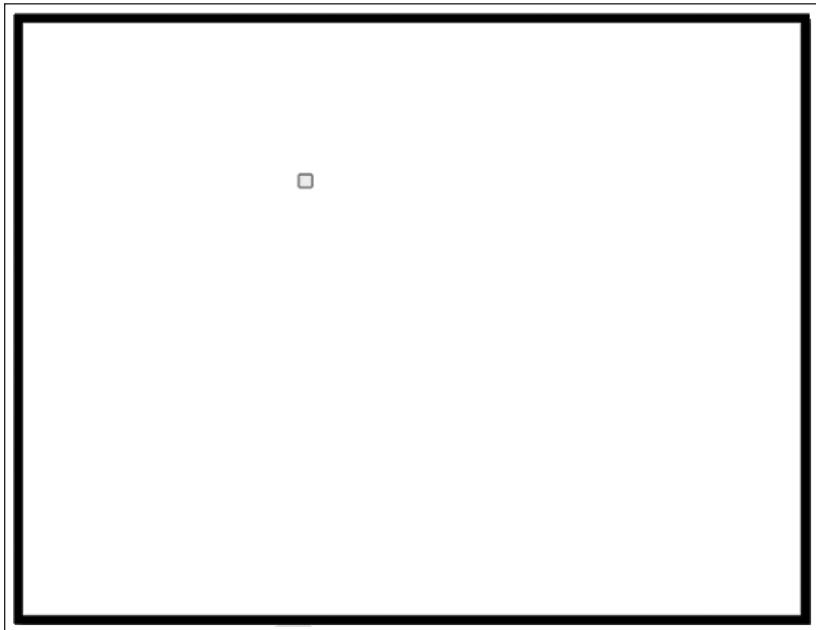
Figure 1. A high school senior

the diagram and examine which individuals are at the core and periphery of the network.

Figure 1 shows one hypothetical high school student. The mentors in CollegeMentor work with up to three high school students, but for this demonstration I locate one hypothetical student.

Figure 2 shows how a connection to a mentor further links the student to another world of institutional agents.

Figure 3 shows the ever-increasing social network as one incorporates the mentors' own contacts, which include additional institutional agents such as professors, financial aid counselors, admissions officers, university staff, friends and family.

From the series of social network diagrams, two developments become clear. As students connect to this mentoring organization, their potential amount of social capital increases quite rapidly. The mentors in this organization link urban, high school students with potential institutional agents who could play integral roles in helping these students transition to higher education. In addition, whereas having a mentor *potentially* increases a student's
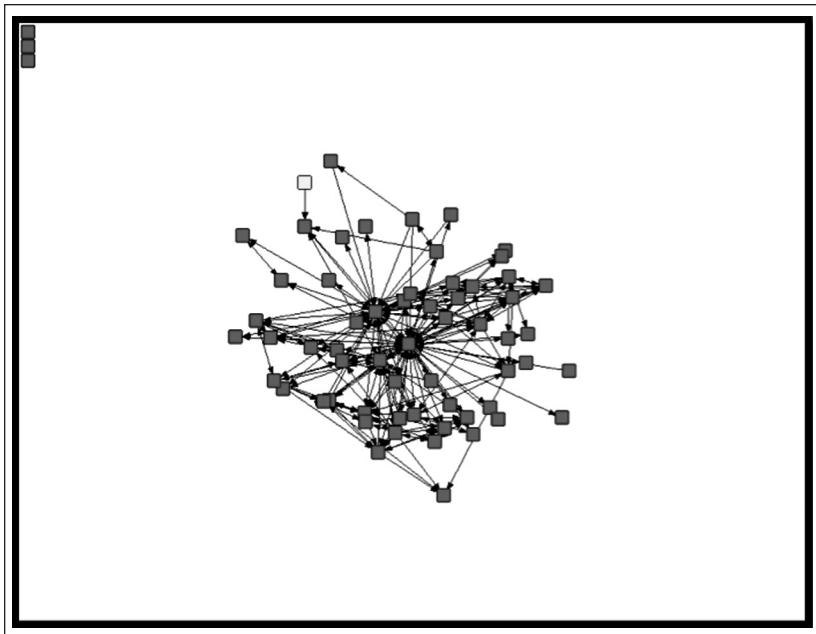
Figure 2. Connected to a network of college mentors

social capital, each individual mentor represents very different entry points into this institutional social network. Every mentor is located in a different position and is connected to varying levels of other institutional agents. Some mentors are centrally located, and others are on the periphery. Clearly, where a high school student connects to the network offers differential access to social capital.

I highlight three social network measures of the group that may also influence the social relationships inherent in this organization. First, I computed the overall density of the network. A density score measures the proportion of all possible ties between individuals that are actually realized (Scott, 2000). For example, in a group of three individuals there are three potential ties. If two individuals know each other, but the third is not related, there is one actual tie out of three possible ties. The resulting density is 33%.

The density of this mentor network (Figure 2) is 0.0730 or 7.3%. Such a small density score indicates that the mentors in this network do not know each other very well. Most mentors may communicate with a few others in
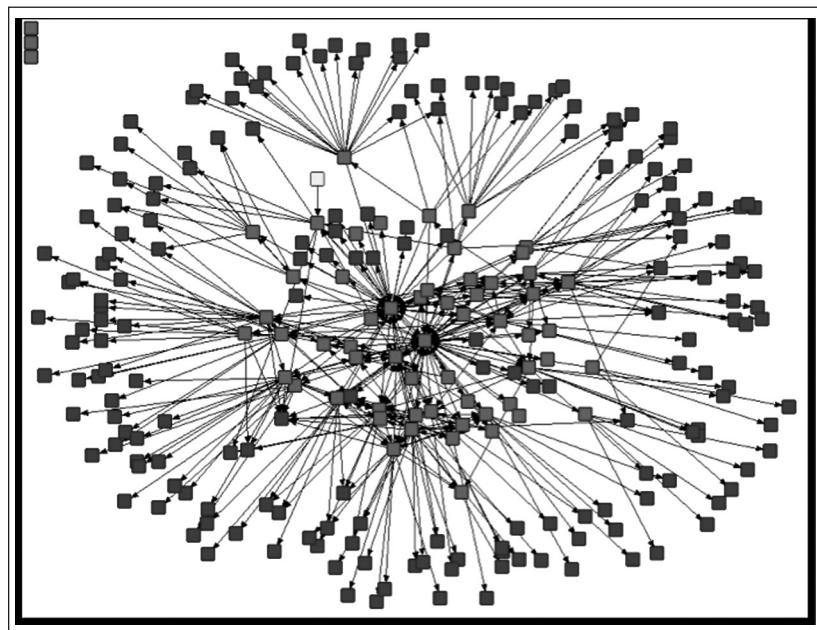
Figure 3. Additional networks of institutional resources

the program, but for the most part they are not intimately connected with a large proportion of the group. If one examines Figure 2, the density of the lines connecting individuals illuminates the low density of this group. A high density of lines connects the central individuals of this organization, who happen to be the directors of the program or professors connected to the program. However, there are numerous mentors who reside in the periphery, with few lines connecting them to others.

Second, I examined the average distances between individuals in this network. The measure of geodesic distance is the shortest possible walk from one individual to another (Scott, 2000). The average geodesic distance signifies the degrees of separation between a given individual and another social contact that may be needed. A longer distance reduces the possibility of one person helping another, since they are located further apart. Conversely, an institutional agent who is directly connected to a mentor (1 distance apart) is more likely to help that mentor.

In the social network of CollegeMentor, the average geodesic distance is approximately 2.022 relationships. The measure suggests that the mentors

could potentially be well positioned to help each other through the mentoring experience, though their density scores are low. On average, a mentor is 1 degrees of separation away from available social resources. Table 1 below lists the frequency table for the geodesic distance measure and shows that approximately 12% of relationships were 1 degree apart, 76% were 2 degrees, and 10% were 3 degrees.

The third social network measure of relevance is the Exernal–Internal (E-I) index. The E-I index computes the proportion of relationships that are within group members versus outside the group (Hanneman & Riddle, 2005). The index (presented in Table 2) takes the number of ties of group members to outsiders, subtracts the ties to innergroup members, and divides by the total number of ties in the network. The resulting proportion represents a leaning toward internal or external ties, with ranges from –1 (*all within group*) to +1 (*all outside of the group*). In this study, I examine the proportion of relationships that are between mentors in the organization with the institutional agents who are outside of the mentoring program. The E-I statistics are outlined in Table 2 below.

The results show an E-I Index of 0.110, meaning that slightly more number of network relationships occurred with outside resources than between the mentors themselves. Overall, mentors' relationships with outside resources constituted approximately 55% of the total relationships in this social network. Such distributions may bode well for the potential social capital created in this mentoring program, as the mentors are potentially connected to a wider network of institutional agents (as previously shown in Figure 3).

Individual Differences Between Mentors in Network Location

The preceding analyses show that (a) the number of relationships to institutional agents expands rapidly when taking into account the networks of mentors, and (b) clear structural characteristics are present such as the low density of the mentor group, and the high level of contacts to outside resources beyond the mentoring program. In this study, I also posit that where students enter into the mentoring group itself will vary considerably depending on which mentor they are paired with. To explore this question I examined whether the individual mentors differ in where they are located within the institutional social web.

Table 3 outlines several network measures of the 62 individual mentors (ego network measures) to demonstrate the differential levels of social capital

Table 1. Frequencies of Geodesic Distances

Geodesic distance (shortest degree of separation between any two individuals)	Percentage of total ties
1	11.8%
2	76.3%
3	10.1%
4	1.6%
5	0.2%

Table 2. External-Internal Index

	Frequency	Percentage
Internal ties	372	0.445
External ties	464	0.555
Total ties	836	1.000
External-Internal Index	92	0.110

each may possess. I note the total network size of each mentor and also present the internal (within the mentoring program) and external (outside institutional agents) ties that each mentor reported. The second measure is a normalized *betweenness* measure. This measure sums the proportion of time an individual is between two other individuals, acting as a bridge. The normalized measure is the betweenness score divided by the maximum possible betweenness an individual can have. Individuals with a higher score are in more favorable positions because they connect more individuals to each other.

To explore the concept of heterogeneity I computed an *effective size* and *efficiency* measure. These measures are related to the theory of structural holes, which posits that individuals who are located in certain positions in a network are more powerful than others (Burt, 2004). For example, effective size takes one's total number of contacts and subtracts any contacts that are redundant. Thus, individuals with a higher effective size score are linked to individuals who cannot be reached in any other way. Higher numbers of unique relationships may lead to diverse contacts and a beneficial network location. The efficiency measure indicates the proportion of one's ties that are nonredundant. Higher efficiency ratios suggest that one's relationships are proportionately unique and diverse (Hanneman & Riddle, 2005).

Table 3. Egocentric Social Network Measures

	Network Size			Betweenness	Heterogeneity	
Mentor	Internal	External	Total	Normalized	Effective size	Efficiency
1	4	7	11	0.659	9.923	0.902
2	8	8	16	0.479	13.717	0.857
3	13	13	26	0.631	22.5	0.865
4	7	3	10	0.208	6.885	0.688
5	1	0	1	0.000	1	1
6	7	6	13	0.406	10.563	0.813
7	2	7	9	0.264	7.955	0.884
8	8	12	20	0.713	16.808	0.84
9	3	0	3	0.000	1	0.333
10	11	6	17	0.453	12.442	0.732
11	2	0	2	0.000	1	0.5
12	4	4	8	1.547	6.95	0.869
13	51	6	57	8.680	52.744	0.925
14	13	5	18	0.314	12.58	0.699
15	2	6	8	0.326	7.6	0.95
16	1	5	6	0.322	6	1
17	3	0	3	0.003	1.5	0.5
18	2	7	9	0.340	8.636	0.96
19	11	7	18	0.405	13.52	0.751
20	2	1	3	0.064	2.2	0.733
21	2	1	3	0.064	2.2	0.733
22	2	0	2	0.000	1	0.5
23	24	0	24	0.729	17.083	0.712
24	6	10	16	0.581	13.658	0.854
25	5	2	7	0.108	4.636	0.662
26	8	7	15	0.161	10.921	0.728
27	10	6	16	0.321	11.571	0.723
28	2	0	2	0.000	1.25	0.625
29	8	6	14	0.419	11.563	0.826
30	4	3	7	1.258	5.75	0.821
31	3	4	7	0.282	5.45	0.779
32	2	18	20	1.030	19.875	0.994
33	4	0	4	0.010	1.417	0.354
34	10	5	15	0.257	9.952	0.663
35	1	4	5	0.000	5	1
36	3	0	3	0.003	1.6	0.533

(continued)

Table 3. (continued)

Mentor	Network Size			Betweenness	Heterogeneity	
	Internal	External	Total	Normalized	Effective size	Efficiency
37	2	6	8	0.346	7.6	0.95
38	2	3	5	0.193	4.429	0.886
39	8	13	21	0.708	18.76	0.893
40	2	10	12	0.643	11.769	0.981
41	9	12	21	0.728	18.161	0.865
42	41	12	53	4.635	49.149	0.927
43	7	7	14	0.277	10.611	0.758
44	2	0	2	0.000	1	0.5
45	4	0	4	0.000	1	0.25
46	5	0	5	0.000	1.4	0.28
47	4	0	4	0.000	2.5	0.625
48	0	0	0	0.000	0	0
49	0	0	0	0.000	0	0
50	1	0	1	0.000	1	1
51	4	0	4	0.000	3	0.75
52	6	0	6	0.000	2.917	0.486
53	1	0	1	0.000	1	1
54	6	0	6	0.000	1.167	0.194
55	4	0	4	0.000	1.75	0.438
56	1	0	1	0.000	1	1
57	0	0	0	0.000	0	0
58	1	0	1	0.000	1	1
59	1	0	1	0.000	1	1
60	1	0	1	0.000	1	1
61	9	0	9	0.000	2.889	0.321
62	2	0	2	0.000	1	0.5
M	6	3.742	9.74	—	—	—
SD	8.514	4.42	10.8	—	—	—

As the various measures show, the distribution of network locations varies considerably on an individual basis. For example, Mentor 13 and Member 42 had the largest personal networks, with 57 and 53 contacts, respectively. One can see that a high school student, who had Mentor 13 or Mentor 42 as a mentor, has potentially more social capital than a student connected to Person 5 (who listed only 1 contact). Person 13 and Person 42 also had the highest

betweenness score, which signifies that they are often a bridge between two other individuals. This location in the network is highly beneficial because Mentor 13 and Mentor 42 often have access to a wider variety of information. A lot of people in CollegeMentor go through Mentor 13 and Mentor 42 to reach others.

Finally, having a higher number of contacts does not always indicate more social capital. Looking at the efficiency scores of each mentor shows that Person 1 has 11 contacts, but an efficiency score of approximately 0.9. Person 13 has 57 contacts with a similar efficiency score of 0.9. Thus, Person 1 may also provide a significant amount of capital to his or her high school students, since their contacts are highly unique. Merely having a high number of contacts does not ensure high social capital; the quality (or uniqueness) of one's contacts also is a form of social capital. This analysis of individual mentor locations suggest that even though each person in CollegeMentor is deemed a "mentor," each has differential positions that offer unequal access to capital. I highlighted the highest scoring members of CollegeMentor, but a look at Table 3 also reveals many mentors who score low on these social capital measures.

Discussion and Limitations

This study illuminates several themes in relation to mentoring programs for urban youth. First, networks analyses visually show how giving youth access to mentors can rapidly increase their potential social capital. In this study the context was a college mentoring program, but any mentoring program will increase students' access to resources. Second, having access to a "mentor" does not ensure that a student has more social capital. This study highlights how each mentor is located in different positions in the network and thus offers unequal access to social capital. In the college mentoring context, merely providing access to institutional agents does not necessarily lead to increased social networks or capital. Different mentors, each an institutional agent, also possess variable access to other individuals and sources of college-knowledge information.

Understanding the role of network location in social capital formation offers several implications for urban, mentoring programs. A network-analytic perspective highlights how mere access to mentors may not increase the social capital of urban, minority, and underrepresented youth. Leaders of college mentoring programs can consider ways to maximize the features of the social networks inherent in their organizations. For example, leaders could consider ways to increase the social ties between their mentors to create more *dense* social networks. More dense networks may characterize organizations where

members are more willing to share information and assist each other. In addition, program leaders may also consider strategies to encourage their mentors to mobilize their abundant outside contacts, increasing the heterogeneity of resources available to students. Understanding network locations underscores the importance of both organizational policy tactics.

Two limitations of this study are that (1) it did not examine the flow of information or mentoring activity present in this social network, and (2) no outcome data were collected to link the social network measures to college access consequences. The current article only considers the structure of relationships at one point in time. However, the theoretical concept of network locations and its measurement offer considerations for future research. Future studies of social networks, social influence, mentoring, and college access might monitor the flow of capital (information, favors, advice, etc.) over time through the network. Future studies will need to explore the relationships between network locations and the ability to use social capital for beneficial outcomes such as successful college enrollment or retention.

The limitations of this study suggest the need for more research from a variety of perspectives to understand the relationship between social networks and college access. Future analyses should monitor the flow of communication, along with social and cultural capital, through various social networks to understand how such capital is mobilized. Furthermore, the role of network-mediated social capital for academic outcomes remains an open empirical question. This article calculated various measures of network location (network size, heterogeneity, betweenness, etc.). Future studies that examine the relationship between these characteristics and outcomes of college access would make an important contribution. Organizational theories and sociopsychological perspectives are also needed to understand how mentoring organizations might facilitate the creation of positive social networks and encourage the mobilization of those networks. As an exploratory study, this article informs such future research and focuses attention on finer-grained examinations of social networks and college success.

Declaration of Conflicting Interests

Funding

References

Anheier, H. K., Gerhards, J., & Romo, F. P. (1995). Forms of social capital and social structure in cultural fields: Examining Bourdieu's social topography. *American Journal of Sociology, 100*, 859-903.

Bloom, J. (2007). (Mis)reading social class in the journey towards college: Youth development in urban America. *Teachers College Record, 109*, 343-368.

Borgatti, S. P. (n.d.). UCINET: Social Network Analysis Software (Version 6.191) [Software]. Available from http://www.analytictech.com/ucinet/ucinet.htm.

Borgatti, S. P., & Foster, P. C. (2003). The network paradigm in organizational research: A review and typology. *Journal of Management, 29*, 991-1013.

Borgatti, S. P., Jones, C., & Everett, M. G. (1998). Network measures of social capital. *Connections, 21*(2), 27-36.

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241-258). Westport, CT: Greenwood.

Brewer, D. J., Stern, S., & Ahn, J. (2007). An introduction to "early college". *Education Finance & Policy, 2*, 175-187.

Burt, R. S. (2004). Structural holes and good ideas. *American Journal of Sociology, 110*, 349-399.

Deil-Amen, R., & Turley, R. N. L. (2007). A review of the transition to college literature in sociology. *Teachers College Record*, *109*(10), 2324-2366.

Dika, S. L., & Singh, K. (2002). Applications of social capital in educational literature: A critical synthesis. *Review of Educational Research, 72*(1), 31-60.

Eby, L. T., Rhodes, J. E., & Allen, T. D. (2007) Definition and evolution of mentoring. In T. D. Allen & L. T. Eby (Eds.), *The Blackwell handbook of mentoring: A multiple perspectives approach* (pp. 7-20). Malden, MA: Blackwell.

Farmer-Hinton, R. L. (2008). Social capital and college planning: Students of color using school networks for support and guidance. *Education & Urban Society, 41*, 127-157.

Granovetter, M. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory, 1*, 201-233.

Hanneman, R. A., & Riddle, M. (2005). *Introduction to social networks*. Riverside: University of California. Retrieved on July 14, 2008, from http://faculty.ucr.edu/~hanneman/nettext.

Hofferth, S. L., Boisjoly, J., & Duncan, G. J. (1998). Parents' extrafamilial resources and children's school attainment. *Sociology of Education, 71*, 246-268.

Lin, N. (1999). Building a network theory of social capital. *Connections, 22*(1), 28-51.

McCarthy, M., & Kuh, G. D. (2006). Are students ready for college? What student engagement data say. *Phi Delta Kappan, 87*, 664-669.

Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education, 75*, 249-284.

Paulsen, M., & St. John, P. (2002). Social class and college costs: Examining the financial nexus between college choice and persistence. *Journal of Higher Education, 73*, 190-235.

Perna, L. W., & Titus, M. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *The Journal of Higher Education, 76*, 485-518.

Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology, 24*, 1-24.

Scott, J. P. (2000). *Social network analysis: A handbook*. Thousand Oaks, CA: SAGE.

Stanton-Salazar, R. D. (1997). A social capital framework for understanding the socialization of racial minority children and youths. *Harvard Educational Review, 67*(1), 1-39.

Stanton-Salazar, R. D., & Dornbusch, S. M. (1995). Social capital and the reproduction of inequality: Information networks among Mexican-origin high school students. *Sociology of Education, 68*, 116-135.

Stanton-Salazar, R. D., & Spina, S. U. (2000). The network orientations of highly resilient urban minority youth: A network-analytic account of minority socialization and its educational implications. *Urban Review, 32*, 227-261.

Stanton-Salazar, R. D., & Spina, S. U. (2005). Adolescent peer networks as a context for social and emotional support. *Youth & Society, 36*, 379-417.

Bio

June Ahn is an Assistant Professor at the University of Maryland, College Park. He holds a joint appointment in the College of Information Studies & College of Education. His research interests include the influence of online and offline social networks on the educational outcomes of youth and the role of virtual schools in K-12 education.