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The Educational Effects of Rural Adolescents' Social Networks

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This study explored the social networks and sources of social support for rural high-school adolescents and how these are related to educational and psychological outcomes. We examined quality, frequency, and nature of social relationships of high school students to understand how size, density, heterogeneity, compositional quality of social network, and frequency of interaction affected educational aspirations and academic engagement of rural youth. Results showed that academic support and emotional support provided by network members explained a significant, though moderate, amount of variance in educational outcomes.

Educational researchers have long recognized that the experience of rural education is unique, contributing to differential outcomes for rural youth. Students living in rural areas of the United States have lower levels of educational aspirations, achievement, and attainment than their nonrural counterparts (Blackwell & McLaughlin, 1999; Roscigno & Crowley, 2001). In addition, rural adolescents both perceive and achieve lower returns to education; that is, further education does not translate into a significantly improved standard of living (Blackwell & McLaughlin, 1999; DeYoung, 1995; Roscigno & Crowley, 2001; Seal & Harmon, 1995). The rural-nonrural discrepancy in educational and other developmental outcomes has been attributed both to divergence in socioeconomic status between the two groups and to differences in family and community dynamics (Haller & Virkler, 1993). Other structural reasons advanced for differential educational outcomes include low institutional resources in rural schools such as fewer course offerings, fewer faculty to teach advanced courses, and fewer academic opportunities in general.

Current research offers some clues into how these factors impact the educational outcomes of rural youth. The economic and social stratification of rural communities is reflected as school-level resource disadvantages; therefore, many rural youth rely on limited institutional resources, have fewer opportunities for advanced course work, and thus participate in fewer curricular and cocurricular activities than nonrural youth (Roscigno & Crowley, 2001; Seal & Harmon, 1995). Extracurricular activities and jobs may be given as much as or more importance than academics in rural communities (Kannapel & DeYoung, 1999; Stern, 1994). Unfortunately, the consequences of leaving school may be more severe for poor, rural youth than for their nonrural counterparts, as they are less likely to return to complete their education after dropping out (Khattri, Riley, & Kane, 1997).

In this manner, researchers have advanced structural rather than process-related reasons for the underachievement of rural youth. While this research has provided some important insights, it offers little direction for educators and policymakers for how to affect changes in educational processes and outcomes. In recent educational literature, the concept of social capital—the resources available from social networks—has emerged as an important explanatory construct in educational outcomes of adolescents. The study of social capital has drawn attention to the social networks and sources of social support for adolescents in the home, school, and community. Social capital theorists (e.g., Coleman, 1988) suggest that social capital can be instrumental in the creation of human capital—i.e., educational achievement, attainment, and occupational success. Thus, the social bonds and social networks of adolescents affect their educational and psychosocial development.

While there has been some excellent research linking the diverse social networks of urban, minority youth with educational and psychological outcomes (Stanton-Salazar, 2001), the same connection for rural youth has not been explored. The school and community factors associated with rurality may be quite different than those for suburban and urban youth. Staying close to family and friends is more important to many rural residents than relocating for higher paying jobs (DeYoung, 1995; Seal & Harmon, 1995). Rural communities are often homogeneous in terms of socioeconomic status and ethnicity (Nachtigal, 1982), and the social networks of rural adolescents are likely to reflect their communities and their proximity to kin. The social resources these youth can obtain from their networks may look very different from the resources available to suburban and urban youth, suggesting the need for a separate exploration of the personal networks of rural youth.

The transition to adulthood for adolescents is facilitated by positive relationships with adults. Relationships and the social competencies developed within them can help

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young people secure instrumental needs (e.g., information about postsecondary education or graduation requirements and occupational opportunities) as well as existential and emotional needs (Larson, Wilson, Brown, Furstenberg, & Verma, 2002). Research that specifically explores the personal social networks of rural adolescents and the relationships of adolescents with their network members is needed for further understanding of the social capital available to rural youth, based in personal networks, and the functions such personal networks have in the social, psychological, and educational development of youth.

The purpose of the present study is to deepen understanding of what rural adolescents' personal networks look like, as well as how those networks affect students' educational and psychosocial outcomes. Although it is important to acknowledge the influence of peer networks on adolescents, we focus specifically on the network of important adults, to get a snapshot of the social resources embedded in that network. We examine network qualities as measures of influence that adults are likely to exert on adolescents. Furthermore, we examine psychosocial and educational constructs that are considered functions of the quality, frequency, and nature of relationships. The study is guided by the following questions:

1. What are the characteristics of the important adults in adolescents' personal networks in terms of relationship to adolescent, occupation, age, and gender? What is the quality and nature of the relationship of these adults with the adolescent in terms of frequency of interaction, intimacy/emotional support, academic support, and interpersonal support?

2. Are network qualities—size, density (% nonkin), heterogeneity (% female), compositional quality (maximum occupational status), and frequency of interaction—related to educational and psychosocial outcomes such as educational aspirations, academic orientation, academic effort, academic apathy, self-concept, and trust?

3. Are network processes—intimacy/emotional support, academic support, and interpersonal support—related to educational aspirations, academic orientation, academic effort, academic apathy, self-concept, and trust?

To contextualize the study, we elaborate the idea of social networks as social capital. In addition, we summarize the current literature on the social networks of youth and the social networks of rural youth in particular. Finally, we explore the relationship between social networks and educational outcomes. The literature provides a framework for our analyses and informs our interpretations of the results.

Social Networks as Social Capital

Most scholars agree that social capital can be defined as the resources embedded in a social structure, which points to the study of person-centered social networks as an important way to understand social capital. Recently, several scholars in sociology and organizational theory have emphasized the role of social networks in social capital (Adler & Kwon, 1999; Borgatti, Jones, & Everett, 1998; Burt, 2000; Lin, 1999a; 1999b). Measures of social network characteristics are proposed as measures of social capital. Typical network measures such as size, density, heterogeneity, and compositional quality are directly linked to the social capital available to the individual (Borgatti, Jones, & Everett, 1998). Size, heterogeneity, and compositional quality are positively related to social capital. That is, with greater numbers and diversity, the network provides more social resources. Density is seen as being negatively related to social capital; if network members are tied to one another, they become redundant. Lin (1999a) points out that closer ties serve to preserve or maintain resources (i.e., reproduction function) while looser networks can serve to help seek and obtain resources that are not already possessed.

In this study, we distinguish between network qualities and network processes. Network qualities are network characteristics and may be considered as indicators of potential social capital. Network processes refer to what goes on in networks, specifically the types of support they provide. While network qualities are suggested by social network theorists as social capital indicators, social network processes may be a more accurate way of determining the social resources embedded in personal networks. Stanton-Salazar (2001) studied perceived support from teachers and counselors as social capital for Mexican-American adolescents. We suggest that both perceived and actual social support represent social resources for adolescents.

Social Networks of Youth

Interest in the study of adolescents' social networks peaked in the late 1980s and early 1990s. The study of social networks grew out of the ecology of human development framework (e.g., Cochran, Larner, Riley, Gunnarsson, & Henderson, 1990) and researchers' desire to understand the adolescent experience of disengagement from and movement beyond family networks (e.g., Salzinger, Antrobus, & Hammer, 1988). Most of this work employed name generator methods of determining social network size and characteristics, where adolescents are asked to list names

of people, both adults and peers, in their networks. More recently, researchers have used ethnographic and other qualitative methods to understand the multiple social worlds of adolescents (e.g., Phelan, Davidson, & Yu, 1998).

The social networks of rural youth may have different characteristics than those of adolescent networks in general. There are few studies that focus on rural youth. The Rural Great Plains Collaborative Project (Voices for Children in Nebraska, North Dakota KIDS COUNT!, and South Dakota KIDS COUNTY Project, 2001) was undertaken to study the issues affecting rural children and their families. Focus groups were conducted in a variety of rural communities, with questions related to economic opportunities, social networks, and services and supports. Respondents indicated there is a strong sense of community associated with living in rural areas; however, recreational opportunities for youth are scarce. Ethnic minorities and newcomers expressed feeling prejudice and discrimination, while isolation was a theme across all respondents. These results suggest a paradox for rural youth: While they may have very close community connections, they are also isolated from connections outside the immediate community.

Bø (1996) provides an insightful synthesis of research on adolescents' social networks as the basis for her study of the social networks of Norwegian adolescents. She notes that most of the early research (1960s to early 1980s) on the social networks of adolescents was descriptive in design and has become obsolete given the changes in youth values and lifestyles. Galbo's (1984, 1986) literature reviews on the significant adults in adolescents' lives reveal limitations in the depth, breadth, and methodology of these studies. Many of the studies used survey instruments specifying putative relationships, (i.e., relationships determined significant by researchers rather than by respondents). Furthermore, Bø criticizes the snapshot/survey method as failing to capture the breadth of adolescents' networks. While important aspects and functions of adolescents' social relationships were identified through research, Bø asserts that the current body of research does not provide a comprehensive picture of young people's social worlds.

Social Networks and Outcomes

Recently, research on adolescents' social networks has been more analytical in design. It is generally agreed that personal networks can be viewed as social capital; that is, as a resource to promote cognitive, psychological, and social development. In the mid-1990s, social capital appeared in the educational literature primarily as a concept to explain educational outcomes. This work, arising mainly out of Coleman's (1988) concept of social capital, focuses specifically on the parent-child relationship and network closure as network indicators of social capital. Research purely from a social network perspective tends to link social networks with psychosocial and behavioral outcomes, while research from a social capital perspective links network characteristics with educational outcomes. This is likely due to the emphasized connection between social and human capital in Coleman's (1988) work on social capital.

Social Networks and Educational Outcomes

A significant body of research has linked social capital with educational outcomes. Social capital, measured by parent-child relationship variables and network closure, has been positively linked with educational achievement and attainment (e.g., Carbonaro, 1998; Hao & Bonstead-Bruns, 1998; McNeal, Jr., 1999; Sun, 1999; Teachman, Paasch, & Carver, 1996; Yan, 1999). In most studies on community social capital, access to social capital from people outside the family has been approximated using residential stability and community involvement measures. Smith, Beaulieu, and Israel (1992) used data from High School and Beyond to study the effects of family and community social capital on dropping out in the South, finding that location of school (urban, suburban, rural) was not a significant predictor of dropping out. They found that number of moves since grade 5 and involvement in church activities, indicators of access to community social capital, were significantly related to dropping out in the expected direction (i.e., greater number of moves, greater likelihood of dropping out; greater involvement in church activities, less likelihood of dropping out). In a more recent study, Israel, Beaulieu, and Hartless (2001) examined the influence of family and community social capital on educational achievement using data from the National Educational Longitudinal Study. High socioeconomic capacity and limited time spent alone were associated with higher math and reading composite scores for rural students. However, increases in residential stability were associated with lower grades for these students.

While measures of community involvement and residential stability may approximate the amount of social capital available to young people, they are not specific and accurate measures of the resources available from network members. Little research has explored the relationship between social capital, based in broader social networks, and educational outcomes. Bø's (1996) work with rural and metropolitan Norwegian adolescents represents one of the few attempts to link these processes. In this research, network size contributed positively to the explanation of school achievement, after taking family SES and neighborhood milieu into account. Bø also found that stronger ties, more frequent exchanges, greater intimacy, and higher density were related to poorer achievement and adaptation in school. Little is known about the connections between network characteristics and educational outcomes in the American context.

Social Networks and Psychosocial Outcomes

In recent years, researchers have considered the relationship between adolescents' social networks and psychosocial outcomes, mainly in the context of social network as a social support structure. Social networks have been studied in relation to self-esteem/self-concept (Blyth & Traeger, 1985, 1988; Coates, 1985; Feiring & Lewis, 1991), psychological adjustment (Vondra & Garbarino, 1988), and social competence (Fischer, Sollie, & Morrow, 1986). Researchers have also looked at connections between social networks and deviant behaviors, including smoking (Ennett & Baumann, 1993) and marijuana use (Blyth, Durant, & Moosbrugger, 1985; Foster-Clark & Blyth, 1987). A shortcoming of this body of research is the failure to control for socioeconomic status and other social structure factors (Bø, 1996).

Summary

The network perspective on social capital has the potential to expand the current paradigm to understand and examine the impact of the social world on adolescents' psychosocial and educational trajectories. It further creates a framework to understand the notions of choice and constraint related to differential access in creating social networks and how these processes are dynamic. While we know relatively little about the social networks of youth, we know even less about youth in rural settings. Given the economic and social differences between rural and nonrural communities, the factors surrounding social capital formation are also likely to differ. The current body of research does not provide sufficient theoretical or empirical support for hypotheses about a positive relationship between social capital based in social networks and educational and psychosocial outcomes. As illustrated above, the literature linking social capital with educational outcomes has not incorporated the concept of broader social networks as social capital.

Our intent in the present study is to utilize network measures of social capital to examine the relationships among social capital, educational outcomes, and psychosocial outcomes in the social networks of rural adolescents. We focus specifically on adults in the social network rather than peers. While the dyadic relationships of parent-teen, teacher-student, and adolescent-mentor have been explored, little research has acknowledged the synergetic and cumulative effects of the web of adults from multiple social worlds. Potentially, adult members (parents, teachers, coaches, work supervisors, neighbors, and clergy members) provide more instrumental types of social support to adolescents than peer networks. Further, our focus is on rural youth rather than suburban or urban youth to understand the relationship between social capital and educational outcomes in this unique context. This study is necessarily exploratory due to the lack of information in this area. Prior to developing formal hypotheses about the relationships of personal social capital with educational outcomes for rural youth, we should deepen our understanding about potential relationships using descriptive and correlational analyses.

Method

Sample

Our sample comprised high school students in grades 9 through 12 ($N = 600$) who were present on the day of survey administration at the end of the 2000-2001 school year. The five participating high schools were located in three rural counties in the southwest region of Virginia. According to Census 2000, the counties range in size from 6,844 to 16,816, none of which have a metropolitan area (U.S. Census Bureau, 2002). Median household income is between $30,397 to $34,927.

Most of the students in the sample were White (94.7%) and in grades 9 (38.8%) and 10 (32.7%). Most students indicated they were in a general education (58.1%) rather than a college preparation track. There was an equal balance of males and females, at 47.6% and 52.4% respectively.

Measures

Students completed the School and Social Experiences Questionnaire (SSEQ), a 45-question survey designed by the researchers. The questionnaire includes items on (a) school and classroom factors; (b) social capital or social resources in the school, home, and community; (c) individual variables such as interest, attitude, and motivation; and (d) background characteristics such as gender, race/ethnicity, socioeconomic status, and science achievement. Many of the items and scales were adapted from existing instruments. In the final section of the survey, students were asked to list up to 10 adults that are important in their lives and to provide detailed information about each of these adults. The items in this section are based on the work of Blyth and Traeger (1988) on social support networks. Important adults are described in the survey as (a) people you spend time with or do things with, (b) people who like you a lot or who you like a lot or both, (c) people who make important decisions about things in your life, (d) people you go to for advice, (e) people you would like to be like, and (f) people who will help you.

The following items and scales were used for this study.

Independent variables. Table 1 summarizes the item wording, scoring, and alpha coefficients for the independent variables used in this study. Respondents indicated the relationship, occupation, age, gender, race, frequency of communication, emotional support, academic support, and

Table 1
Item Descriptives for Independent Variables

Composite	Item Wording and Codes	*M*	*SD*
Network size	List the initials of up to 10 adults (people 21 or older) that are important to you. (count 0 to 10)	7.51	3.04
Density (percent nonkin)	Relationship to person (adults 1-10) (kin = mother, father, sister, brother, aunt, uncle, grandmother, grandfather, cousin, other family member; nonkin = teacher, counselor, coach, other school person, neighbor, friend)	0.31	0.28
Heterogeneity (percent female)	Gender (adults 1-10) (1 = male; 2 = female)	0.52	0.22
Compositional quality (maximum occupational status)	Occupation or most recent job (adults 1-10) (used Duncan's codes 1-16)	11.31	3.05
Frequency ($\alpha = .90$)	How often do you talk to this person . . . (mean adults 1-10) at home? at school? other places? (1 = almost never to 9 = more than once daily)	14.50	3.74
Emotional support ($\alpha = .80$)	How much does this person . . . (mean adults 1-10) understand what you are really like? accept you no matter what you do? (1 = not at all; 2 = somewhat well; 3 = quite well; 4 = nearly completely)	2.96 3.29	0.76 0.70
	How much do you . . . (mean adults 1-10) get advice from this person? share your feelings with this person? (1 = almost never; 2 = occasionally; 3 = sometimes; 4 = quite often; 5 = most of the time)	3.28 3.06	1.00 1.09
Academic support ($\alpha = .83$)	This person . . . (mean adults 1-10) pushes me to do a good job in school. pushes me to learn on my own in school. serves as a role model of achievement for me. gives me constructive criticism about my schoolwork. (1 = strongly disagree to 4 = strongly agree)	3.27 3.07 3.15 2.76	0.70 0.72 0.73 0.82
Interpersonal support ($\alpha = .87$)	This person . . . (mean adults 1-10) helps me learn to respect other people. helps me when I encounter problems in personal relationships. is a role model in getting along with other people. helps me understand my feelings toward other people. (1 = strongly disagree to 4 = strongly agree)	3.30 2.91 3.18 2.96	0.69 0.78 0.71 0.80

interpersonal support provided by each individual network member. Network-level variables are computed across all network members listed by the adolescent. Creation of the composites is more fully discussed, where applicable, in the following subsections.

Size of network was assessed by counting the number of important adults listed by the student. Students could list a maximum of 10 adults, creating a range restriction in this variable. This is taken into consideration in the interpretation of the data analyses.

Percent of nonkin members in the network was used to measure *density*, where greater percent nonkin indicates less network density. Students indicated the relationship of each important adult in an open-ended response. These responses were recoded into ten codes for familial relationships (e.g., mother/step, sister/step, grandfather) and into six codes for nonkin relationships (e.g., neighbor, friend, coach).

The *heterogeneity* of the network was measured by calculating the percentage of female members in the network. Given the homogeneous nature of this sample, racial composition of the network was not assessed, although this is a plausible indicator of heterogeneity.

Maximum occupational status was used as the measure of network *compositional quality*. Students indicated the occupation of each network member in an open-ended response. The responses were recoded into 1 of 16 occupation codes. Those codes were then converted to Duncan's Total Socioeconomic Indicator ratings (TSEI) as specified in Stevens and Cho (1985). Maximum occupational status corresponds to the highest TSEI calculated for the network members.

The measure of *frequency of interaction* was computed in a two-step process. First, total frequency of interaction across home, school, and other places was calculated for each network member. Ratings were from *1 = almost never* to *9 = more than once a day*, resulting in frequency scores between 3 and 27 for each adult. Next, a mean frequency of interaction across network members was calculated, resulting in a mean score also between 3 and 27.

Three variables assessed support provided by network members—*emotional support*, *academic support*, and *interpersonal support*. Each variable was measured with four items. First, each item was averaged across all adults in the network. The support scale scores were created by standardizing the item averages, then averaging the four item means to create a standardized mean score. Items, item means and standard deviations, and alpha coefficients for each support variable are shown in Table 1. The three network support variables show strong, positive intercorrelations (see Table 4). While it is possible that a generalized support variable exists, it is important to separate academic support from other types of support to understand whether the nature of this support is unique.

Dependent Variables

Table 2 outlines the items, scoring, and alpha coefficients for each of the dependent variable composites. Means and standard deviations for each item are also provided.

Educational aspirations were assessed by items asking students how far they expect to go in school and asking how far each parent expects him/her to go in school. The parental expectations score was computed as the highest expectation of father's and mother's expectations (range 1-5). If information for only one parent was provided, this score was used.

Academic orientation, effort, and apathy were the three engagement related factors assessed. *Academic orientation* (7 items) relates to students' valuing and enjoyment of school while *academic effort* (4 items) indicates students' effort in schoolwork. For each scale, the items were averaged (range 1-4). *Academic apathy* (6 items) was measured as the frequency of disengaged behaviors. Three items focused on how many times the behavior (e.g., I missed school) had occurred in the past four weeks using a 5-point scale (from *none* to *more than 10 times*). The other three items assessed the students' preparedness for class by asking how many times the student comes to class without certain things (e.g., books). These items were scored on a 4-point scale from *never* to *usually*. The items were standardized then averaged to create a standardized mean score for academic apathy.

Confirmatory factor analyses (Dika & Singh, 2002) provide validity evidence for the engagement constructs. There appear to be two distinct dimensions of academic engagement in subject related learning—one cognitive and one behavioral. GFI, a measure analogous to R^2 in multiple regression, was .98 for the two factor model. Construct validity is evidenced in the significant negative correlations between academic apathy and each of the two constructs: -.23 with academic orientation and -.26 with academic effort (see Table 3).

Self-concept and *trust* were each measured with 4 items. For each scale, the items were averaged (range 1-5).

Procedure

Students completed the SSEQ in their science classrooms under the supervision of their regular classroom teachers. Directions for completing the survey, including emphasis on the complete confidentiality of the responses and voluntary participation in the research study, were provided by the researchers and read aloud to students by teachers prior to survey administration.

Results

Nearly half of the students did not provide complete adult network information (which was elicited at the end of

Table 2
Item Descriptives for Dependent Variable Composites

Composite	Item Wording and Codes	*M*	*SD*
Academic effort	I feel I am responsible for my learning.	3.16	.78
(α = .80)	I always try hard, no matter how difficult the work.	2.84	.84
	When I fail, that makes me try that much harder.	2.88	.86
	I always try to do my best in school.	3.01	.85
	(1 = strongly disagree to 4 = strongly agree)		
Academic orientation	Enjoy school because learning things that will help in future.	2.72	.77
(α = .85)	Academic success is important for success in life.	3.23	.82
	Look forward to school because I like subjects I study.	2.36	.81
	Participation in classes is fun.	2.61	.80
	My teachers encourage me to learn.	2.99	.78
	I often study things that interest me.	2.99	.82
	My school experiences are generally positive.	2.78	.77
	(1 = strongly disagree to 4 = strongly agree)		
Academic apathy	Number of times late for school in past 4 weeks.	1.69	.95
(α = .73)	Number of times missed school in past 4 weeks.	1.83	1.01
	Number of times skipped classes in past 4 weeks.	1.32	.87
	(1 = none to 5 = more than 10 times)		
	How often come to class without pencil or paper.	1.80	.92
	How often come to class without books.	1.64	.87
	How often come to class without homework done.	2.16	.89
	(1 = never to 4 = usually)		
Self-concept	I feel good about myself.	3.63	1.20
(α = .91)	I feel I am a person of worth, the equal of other people.	3.79	1.24
	I am able to do things as well as most other people.	3.87	1.16
	On the whole, I am satisfied with myself.	3.69	1.29
	(1 = hardly ever true to 5 = almost always true)		
Trust	Other people understand me.	3.33	1.29
(α = .77)	The world and the people in it are basically good.	2.92	1.21
	In need, I know people who care enough to offer help.	4.02	1.20
	On the whole, I am satisfied with my social life.	3.75	1.26
	(1 = hardly ever true to 5 = almost always true)		

the survey). To determine whether the subgroup providing complete network information was representative of the entire group, we compared the educational and psychosocial outcome variables of interest between those providing and not providing network information. There were significant differences between the groups on nearly all of the variables, with those providing network information reporting higher academic orientation, academic effort, and trust than those who did not provide network information. The network subsample also reported significantly lower academic apathy than the subsample who did not provide network information. There was no significant difference in self-concept and aspirations between the two groups.

These subsample characteristics necessarily limit the generalizability of the results of the study. The results will reflect the experiences of students who are more academically engaged and trusting than their peers. It is unclear whether the less academically engaged students were simply less interested in completing the survey, or whether they did not feel they had important adults in their lives. There may

Table 3
Correlations Among Network Qualities, Educational Outcomes, and Psychosocial Outcomes (N =303)

	Aspirations	Academic effort	Academic orientation	Academic apathy	Self-concept	Trust	Network size	% Nonkin	% Female	Max. occupation status	Frequency of interaction
Academic effort	.27**										
Academic orientation	.28**	.65**									
Academic apathy	-.18**	-.26**	-.23**								
Self-concept	.20**	.27**	.32**	-.32**							
Trust	.22**	.32**	.38**	-.25**	.72**						
Network size	.03	.14*	.13*	-.11	.06	.15**					
% Nonkin	.13*	.17**	.17**	-.02	-.03	.02	.13*				
% Female	.01	.12*	.04	-.10	.02	-.02	-.12*	.08			
Max. occupation status	.17**	.16**	.17**	-.17**	.11	.09	.26**	.32**	.03		
Frequency of interaction	.15**	.06	.03	-.04	-.00	.05	-.12*	.05	.01	.06	
M	4.15	3.12	2.91	1.65	3.86	3.63	7.71	.31	.52	11.49	14.50
SD	.98	.57	.51	.54	1.00	.87	2.74	.28	.22	2.85	3.74

*$p < .05$. **$p < .01$.

be a method effect, in that academically oriented students are more likely to feel comfortable filling out a paper-pencil survey.

The results reported here reflect our attempt to explore and understand the nature and influence of personal networks as social capital for rural adolescents. Our primary goal was to explore the relationship of social network qualities and processes to educational and psychosocial development of adolescents. The characteristics of social networks considered were size, density, heterogeneity, and frequency of interaction. The processes examined were perceived emotional, academic, and interpersonal support. Results are described in three sections: Typical network, network qualities and educational outcomes, and network processes and educational outcomes.

Typical Network

The typical network of adolescents in this sample has between 7 and 8 adults ($M = 7.51$). In a typical network of 8 adults, 5 are male and 3 are female; 6 are family members and 2 are nonkin. The adults are from 31 to 50 years of age. At least one of the adults is a professional such as an accountant, nurse, engineer, or social worker. Interaction with network members is more frequently at home or other places rather than at school. Overall, the network provides support to the adolescent in three areas: emotional, academic, and interpersonal. Mean responses on the emotional support items were $M = 2.96$ and $M = 3.29$ for feeling understood and accepted, respectively, corresponding to "3 = quite well" on the rating scale for these items. Means for getting advice and sharing feelings on a 5-point scale were similar ($M = 3.28$ and $M = 3.06$), however, three corresponded to a rating of "sometimes" on the scale for these items. The means for three academic support items all corresponded to "3 = agree": pushes me to do a good job in school ($M = 3.27$), pushes me to learn on my own in school ($M = 3.07$), and serves as a role model of achievement for ($M = 3.15$). Students indicated that network members are slightly less likely to give constructive criticism about schoolwork ($M = 2.76$). Finally, the interpersonal support items also had means corresponding to "3 = agree": helps me learn to respect other people ($M = 3.30$), helps me when I encounter problems in personal relationships ($M = 2.91$), is a role model in getting along with other people ($M = 3.18$), and helps me understand my feelings toward other people ($M = 2.96$). The patterns of responses on these items indicate that students feel a general sense of emotional support and acceptance and academic press, but on items that asked for more specific involvement in emotional and academic life (e.g., help on personal problems, constructive criticism about schoolwork) the mean responses were lower. On the basis of these descriptive analyses, we can draw a tentative inference that, in general, adolescents feel supported and accepted by adults in their lives (implicit support) but are less likely to seek or receive specific help on academic work or personal problems (instrumental or explicit support).

Some tentative conclusions can be made about the network of most important adults. Frequency of interaction with these adults at home is quite high, although the content of the interaction may be routine in nature and not specifically related to support. The most important factor in terms of emotional support seems to be perceived acceptance. Across all adults, adolescents are not highly likely to get advice or share feelings. For academic support, the most important factor across all adults is the push to do a good job in school. Constructive criticism is clearly the weakest factor in academic support. Finally, for interpersonal support, helping learn to respect other people is the most important factor. Helping with problems in personal relationships and helping to understand feelings toward others are the weakest factors. For most adolescents, these adults are role models both for academic achievement and interpersonal relationships.

Network Qualities and Educational and Psychosocial Outcomes

To understand the relationships among network qualities and outcome variables, we first looked at the correlations among these variables (Table 3). Correlations of network size with all other network qualities are statistically significant. The strongest correlation is with maximum occupational status ($r = .26, p < .001$). Percent nonkin was significantly correlated with maximum occupational status ($r = .32, p < .001$). All other correlations among network qualities are statistically nonsignificant. Larger network size and greater percentages of nonkin members in the network are associated with higher maximum occupational status. That is, larger networks with more nonkin members are more likely to have members of higher occupational status. Among the outcome variables, most correlations are modest and all are statistically significant. As expected, correlations of all outcomes with academic apathy are negative. The strongest correlations are between self-concept and trust ($r = .72, p < .001$) and between academic effort and academic orientation ($r = .65, p < .001$). Higher self-concept is associated with greater trust of others, and greater school effort is associated with a more positive orientation to school.

Regression analyses were completed to determine whether network qualities explain a significant proportion of the variance in educational and psychosocial outcomes. Table 4 outlines the standardized regression coefficients (β) and R^2 for each equation. The R^2 for these equations are very small, ranging from .02 to .07. The most influential network quality seems to be maximum occupational status, which is a statistically significant, if modest, predictor in the models for educational aspirations, academic orientation, and academic

Table 4
Regression Model of Aspirations, Academic Effort, Academic Orientation, Academic Apathy, Self-concept, and Trust on Network Qualities

Independent Variables	Aspirations ($N = 306$)	Academic effort ($N = 323$)	Academic orientation ($N = 323$)	Academic apathy ($N = 323$)	Self-concept ($N = 321$)	Trust ($N = 321$)
Network size	-.00	.11	.07	-.07	.07	.15**
Percent females	-.00	.13*	.04	-.11**	.03	.03
Percent nonkin	.08	.12*	.08	.06	-.07	-.04
Maximum occupational status	.14*	.09	.13*	-.15*	.12	.03
Frequency of interaction	.14*	.07	.04	-.06	-.00	.09
R^2	.06**	.07***	.05*	.04*	.02	.03

Note. Standardized regression coefficients (β) can be interpreted as effect sizes.
*$p < .05$. **$p < .01$. ***$p < .001$.

apathy. The effect of percentage of females in the network was significant for two academic outcomes (academic effort and academic apathy). Network size, percent nonkin, and frequency of interaction were each significant in only one model.

Network Processes and Educational and Psychosocial Outcomes

We began with correlational analyses to understand the nature of the relationships among network processes and outcome variables (Table 5). The correlations among the network processes are high and statistically significant ($p < .001$). Intimacy or emotional support correlates $r = .55$ with support for academic achievement and $r = .60$ with support for interpersonal relationships. Support for academic achievement and support for interpersonal relationships in turn are highly correlated, $r = .71$. These positive correlations suggest that network members provide multiple types of support to adolescents. Correlations among the outcome variables are nearly identical to those in the previous analysis with network qualities.

Correlations among network processes and outcome variables are modest, but all are statistically significant. All correlations with academic apathy are negative. As expected, support for academic achievement is correlated with academic orientation ($r = .34, p < .001$) and academic effort ($r = .32, p < .001$), suggesting that higher academic support in the network is associated with higher effort and more positive academic orientation. Not surprisingly, higher levels of support in all three areas is associated with higher trust of others; rs = .32 for emotional support, .34 for academic support, and .35 for interpersonal support.

As in the second research question, regression analyses were conducted to determine whether network processes explain a significant proportion of the variance in educational and psychosocial outcomes. The standardized regression coefficients and R^2 for each equation are shown in Table 6. In all cases, explained variance was statistically significant at the .01 level. Results for each of the outcomes are outlined briefly below.

Educational aspirations. The network processes explain a small proportion of the variance in educational aspirations (7%). The only statistically significant network process is support for academic achievement. Educational aspirations is modestly related to the academic support provided by the network.

Academic effort. About 13% of the variance in academic effort is explained by network processes. Both intimacy/emotional support and academic support are statistically significant predictors. Greater intimacy and academic support from the network is related to greater academic effort by the adolescent.

Academic orientation. For academic orientation, the network processes explain about 14% variance. Once again, intimacy and academic support are statistically significant. Emotional support and academic support from the network are associated with a more positive academic orientation.

Academic apathy. A very small, yet statistically significant, proportion of variance in academic apathy is explained by the network processes. None of the network processes is statistically significant.

Self-concept. Collectively, the network qualities explain about 8% of variance in self-concept. Only academic support is statistically significant. It appears that academic support has a modest positive effect on self-concept.

Trust. Over 15% of variance in trust is explained by network processes. Two of the network processes are statistically significant; intimacy/emotional support and interpersonal support. Trust seems to be related to the emo-

Table 5
Correlations Among Network Processes, Educational Outcomes, and Psychosocial Outcomes (N = 298)

	Aspirations	Academic effort	Academic orientation	Academic apathy	Self-concept	Trust	Emotional support	Academic support	Interpersonal support
Academic effort	.34**								
Academic orientation	.31**	.69**							
Academic apathy	-.27**	-.34**	-.28**						
Self-concept	.24**	.30**	.31**	-.31**					
Trust	.27**	.34**	.36**	-.24**	.71**				
Emotional support	.17**	.28**	.28**	-.16**	.21**	.32**			
Academic support	.26**	.32**	.34**	-.17**	.26**	.34**	.55**		
Interpersonal support	.21**	.25**	.25**	-.18**	.24**	.35**	.60**	.71**	
M	4.11	3.07	2.90	1.66	3.85	3.60	.02	.06	.06
SD	1.01	.60	.54	.55	1.00	.90	.80	.77	.83

*$p < .05$. **$p < .01$.

Table 6
Regression Model of Aspirations, Academic Effort, Academic Orientation, Academic Apathy, Self-concept, and Trust on Network Processes

	Aspirations ($N = 299$)	Academic effort ($N = 314$)	Academic orientation ($N = 314$)	Academic apathy ($N = 314$)	Self-concept ($N = 313$)	Trust ($N = 313$)
Intimacy/emotional support	.03	.17**	.15*	-.08	.09	.16*
Academic support	.21**	.24***	.27***	-.06	.17*	.12
Interpersonal support	.04	.00	-.02	-.06	.07	.17*
R^2	.07***	.13***	.14***	.03**	.08***	.15***

Note. Standardized regression coefficients (β) can be interpreted as effect sizes.
*$p < .05$. **$p < .01$. ***$p < .001$.

tional and interpersonal support provided by adults in the social network.

Summary. The most influential network process is academic support, which was statistically significant for all outcomes except academic apathy and trust. The effect of emotional support was significant for academic effort, academic orientation, and trust. Interpersonal support was significant only for trust. For three outcomes, the network processes explained over 13% of variance: academic effort, academic orientation, and trust. These results are encouraging and contribute to our understanding about the relationship between adolescents' social capital and academic engagement.

Discussion

This exploratory study examined three research questions about rural adolescents' social networks and educational and psychosocial outcomes. First, we presented descriptive analyses of network qualities and processes in a typical network of important adults. Next, we examined the relationships among network qualities and educational and psychosocial outcomes. Finally, we assessed relationships among network processes and outcomes. The results corroborate some of the earlier findings in sociological literature that a diverse and heterogeneous network is likely to be a source of social capital for individuals. These data show a trend that there are two kinds of functions of networks: One is emotional and interpersonal support, which is more implicit, and the other is more instrumental support, which is more explicit.

Based on the descriptive results, one theme is worthy of further discussion. Social support literature distinguishes between emotional and instrumental support. While the mean levels of support in all three areas are very similar (3 on a scale of 1 to 4), a closer look at the item means reveals some differences. In terms of emotional and interpersonal support, while adolescents felt supported, they were not too likely to share feelings with or get advice from the three most important adults in their networks. For academic support, the results reflect that overall, most networks provide generalized academic support to adolescents. However, network members are about 10 to 20% less likely to give constructive criticism about school work than they are to "push" students to do well in school or serve as a role model of achievement.

Possible explanations for this difference in perceived implicit and explicit support include developmental stage and the unique characteristics of the sample. Adolescence is a stage where peers become more important confidantes than family members and other adults. Thus, they may feel understood and accepted by their parents and other adults, but prefer to share more intimate feelings with peers. They may also not remember specific incidents of support, but rather the general sense of support they feel from others. Another possible explanation could be related to the demographic characteristics of the participants in this sample. In rural areas, there tends to be greater network closure, defined as parents knowing one another and their children's friends (Coleman, 1988), and closer physical proximity to extended family members. The feelings of implicit support could be related to these factors. While explicit support is not high, adolescents may have a sense that they have a supportive group of people around them. Further analysis is necessary to understand whether this perceived implicit support functions equally as well as more explicit types of support for positive educational and psychosocial outcomes. Longitudinal studies would also be helpful to understand whether implicit support is internalized by young people who leave rural areas; that is, whether perceived implicit support remains high even when frequency of interaction with network members becomes less.

The Role of Network Qualities

Maximum occupational status emerged as the most influential quality in the regression analyses to understand the role of network qualities in explaining educational and psychosocial outcomes. Maximum occupational status is a measure of the compositional quality of the network. These results support the network theory proposition that greater compositional quality is associated with desirable outcomes. At an intuitive level, exposure to persons with a high occupational status may open up possibilities for the adolescent. For this sample, the largest proportions of parents were in clerical jobs and labor or operative occupations. Network members were also highly concentrated in these types of occupations. The average parental education level was at about 2 years of vocational college. These results are expected for a rural sample, based on census statistics about lower education levels and more production/labor work in rural areas. In terms of social capital, a network member with a high occupational status would provide nonredundant information about available education and career opportunities.

Percent female in the network was also statistically significant for two academic outcomes: academic effort and academic apathy. These results somewhat support network theory, where greater heterogeneity in the network is associated with desirable outcomes. The explanation for this result is not clear, however. Many students indicated that their mother was the most important network member. Women's role in maintaining networks has been noted by Reay (1998) and others. The interpersonal support items in the survey generally reflected implicit rather than explicit types of interpersonal support, such as helping with problems in personal relationships and helping learn to respect others. The word "helping," which is used in three of the four items, may suggest more interaction than "being" a role model. This theme deserves further attention and better explanation than the stereotypical notion that women are better at interpersonal relations than men.

Overall, the network qualities explain very little of the variance in educational and psychosocial outcomes. The notion that network qualities are merely potential social capital indicators may provide a potential explanation for these results. Social capital for adults is generally understood to be based on weak ties (e.g., Burt, 2001). However, in the case of adolescents, especially adolescents in rural communities where close family and community ties are valued, weak ties (percent nonkin in this study) may not contribute greatly to positive educational and psychosocial outcomes.

The Role of Network Processes

The second set of regression analyses examined the relationships among the network processes of emotional support, academic support, and interpersonal support with outcomes of interest. The network processes explain a statistically significant proportion of the variance in both educational and psychosocial outcomes. The variables explain the largest proportions of variance in academic effort, academic orientation, and trust. Academic support and emotional support are significant for both academic and psychosocial outcomes. Academic support is statistically significant for educational aspirations, academic effort, academic orientation, and self-concept. Emotional support is statistically significant for academic effort, academic orientation, and trust. Interpersonal support plays a minimal role, and it is only statistically significant for trust. These results indicate that emotional support and academic support may act in tandem to encourage positive academic and psychosocial outcomes.

Overall, the network processes do a better job of explaining educational and psychosocial outcomes than the network qualities, particularly for academic effort, academic orientation, and trust, where between 13% and 15% of variance was explained. These results support the proposition that network qualities may be more accurate indicators of social capital in the network than network qualities. The results also support the idea that what networks do may be more important than what they look like on the surface. Network size, access to high achieving adults, and frequency of interaction will not necessarily lead to positive outcomes unless the network members provide emotional and academic support. This hypothesis challenges the prevailing notion that social capital can be measured by looking at surface-level indicators such as family structure, parental education, and income.

Implications

This study provides a starting point for the further study of the social networks of rural youth. It is important to avoid lumping rural youth together as a single group. All of the youth in this study were from rural southwest Virginia. Their communities are not necessarily representative of rural communities across the United States. Case studies of different regions of the country would offer a more complete picture of the structure and function of social networks for rural youth across geographic locations. The communities represented in the study were on the smaller end in terms of population (between 7,000 and 16,000). Future research should examine the social networks of youth in larger rural communities, and perhaps in smaller, more isolated communities to understand the differences within rural locations. Longitudinal studies should explore the changing nature of social networks, as rural students move away from their home communities to study or work in suburban and urban locations.

The nature of this sample may be responsible for certain characteristics of the data. It is important to note that a significant proportion of the network members were unem-

ployed for most students. This proportion does not seem to be merely due to age of the network members. Depressed economy, low availability of employment, and higher proportions of disabled adults in the participating counties may be reflected in this characteristic. In addition, the proportion of non-kin members was lower than might be expected for a suburban or urban sample. Adolescents may have easy access to extended family members and may rely on these family members for support. In suburban and urban areas, it is less likely that adolescents would have daily contact with extended family.

Although there is increasing evidence that support and interaction with significant adults create a foundation for healthy psychosocial and educational development, there is a serious gap in knowledge in this area. This study attempts to begin bridging that gap. One strength of the study is the emphasis on profiles of real adults in the lives of adolescents and the roles that these adults play (e.g., mentor, friend, supporter). Thus, the study is likely to contribute to a better understanding of social networks as social capital in the developmental trajectories of young people. In the absence of extensive theoretical and empirical work on the effects of social networks in the development of rural youth, this study provides a baseline description of social networks of rural youth and highlights the tentative relationships among network variables and educational and psychosocial outcomes. By taking a relational view of social capital, as captured by the personal social network, the present study provides an expanded and potentially more useful perspective to understand and examine the impact of the social world on adolescents' social, personal and educational development.

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