

## Another Look at Rural-Nonrural Differences in Students' Educational Aspirations

Emil J. Haller  
Cornell University  
Sarah J. Virkler  
University of Buffalo

*Research suggests that rural youth have lower educational aspirations than their nonrural counterparts. This discrepancy has important implications for educational policy and for achieving equality of educational opportunity, and it has led some to propose that action is necessary to reduce the rural-nonrural variation. However, while the existence of an aspiration difference seems clear, neither its magnitude nor the reason for its existence is similarly transparent. Before undertaking remedial actions, it is well to ascertain the nature of whatever discrepancy exists. That is the purpose of this paper.*

*We find that the rural-nonrural difference in adolescents' educational aspirations is quite small, and that about half of this discrepancy can be attributed to the well-established divergence in socioeconomic status between rural and nonrural families. Our analyses also suggest that much—perhaps all—of the remaining difference derives from the slightly disparate occupational aspirations of rural and nonrural youth.*

*We conclude that a goal to eliminate the small difference in rural-nonrural educational aspirations is likely to be unachievable. The discrepancy's roots lie in patterns of family dynamics that are largely beyond the reach of educators. If, however, the aim is simply to reduce the discrepancy, this might be accomplished by raising the occupational aspirations of rural youth. However, that strategy has its own problems, most notably that it is likely to exacerbate the migration of talented young people from rural areas.*

### Introduction

Educational aspirations are important. From an individual perspective, they represent one of the more crucial determinants of social mobility. Where one ends up in the social hierarchy is substantially dependent on his or her adolescent desires for education beyond high school and the occupational ramifications of fulfilling those desires (Alexander, Eckland & Griffin, 1975; Hurn, 1993; Sewell & Hauser, 1976). Similarly, educational aspirations are important in a social perspective. Human capital theory implies that societies vary in their demand for education, and that this variation has major implications for regional and national economic growth (Becker, 1975). Finally, from a political perspective, much of the rhetoric surrounding the school reform movement assumes that increasing the educational aspira-

tions of our youth will cause the U.S. to prosper relative to its foreign competitors.

It follows, then, that a significant disparity between the aspirations of rural and nonrural youth could be a matter of serious concern. At the very least it would imply that there is something about rural life that imposes an additional handicap on the occupational attainments of children of the rural poor, a handicap that makes their rise out of poverty even more difficult than it is for children of the nonrural lower class.

There is considerable evidence that such a disparity exists. Numerous investigators have noted that the educational aspirations of rural youth lag behind those of their nonrural counterparts (e.g., see Cobb, McIntire, & Pratt, 1989; Edington, 1970; Hansen & McIntire, 1989; Monk & Haller, 1986; Ohlendorf & Rafferty, 1982). This discrepancy has prompted some to call for mea-

---

Emil J. Haller is Professor, Department of Education, Cornell University, Ithaca, NY 14853-4203. Sarah J. Virkler currently is a law student at the University of Buffalo. An earlier version of this paper was presented at the 1992 meeting of the National Rural Education Association, Traverse City, MI. This study was supported by a grant from the United States Department of Agriculture (Hatch 137-6408-6660). We are grateful to the Cornell Institute for Social and Economic Research for providing the data and computer facilities used in this study.

tures to solve the problem of low aspirations among rural adolescents (e.g., Breen, 1989; Cobb et al., 1989; Haas, 1992; Preble, Phillips, & McGinley, 1989; Swift, 1988; Vaughn & Vaughn, 1985).

Before explanations and remedial actions are proposed and implemented, however, the problem to be corrected needs to be clearly in mind. In this regard, the work of Cobb et al. (1989) and Hansen and McIntire (1989) is especially useful, since those researchers provide direct rural-nonrural contrasts in various aspiration measures, and they use a nationally representative, relatively good quality, data base (High School and Beyond). However, while their arguments include convincing evidence of the existence of a rural-nonrural aspiration discrepancy, they do not address explicitly its magnitude. Nor do they address the discrepancy's causes, other than socioeconomic status (SES) and related family structural factors.

Here, we build on their work by focusing more precisely on the discrepancy's magnitude and two of its possible antecedents. In particular, we examine the possibility that differences in rural-nonrural educational aspirations are a consequence of differences in occupational aspirations as well as family SES.

#### Rationale

Aspirations—occupational as well as educational—are acquired through socialization. This process changes over location and time (Ohlendorf & Rafferty, 1982). Thus, its outcomes are potentially different for rural and nonrural people. There is evidence that rural and nonrural youth differ in numerous and important ways: in delinquency (Wilson & Hernstein, 1985), religiosity (Rogers, Burdge, Korsching, & Donnermeyer, 1988), and political values (Carlson, Lassey, & Lassey, 1981), to mention three. This suggests that there are corresponding differences in the formative experiences of the two groups. It is likely that some aspect of these differences also produces the observed discrepancy in educational aspirations between rural and nonrural youth.

Perhaps the most obvious candidate as the cause of the discrepancy is family SES. It is well known that SES has a modest relationship with a child's educational aspirations: Their zero order correlation is on the order of .30 (Alexander et al., 1975; Jencks et al., 1972; Sewell & Hauser, 1976). While it is unclear precisely what it is about social

class variations in child rearing practices that causes aspirations to differ, the linkage is well established. When this fact is coupled with the observation that rural families are, on average, somewhat below the average SES of their nonrural counterparts (Swanson & Butler, 1988), a family process explanation for a rural-nonrural discrepancy in students' aspirations is created. Both Cobb et al. (1989) and Hansen and McIntire (1989)—implicitly in the former case, explicitly in the latter—focus on the role of SES in student aspirations.

However, rural and nonrural areas differ in ways other than in their characteristic family processes; there are structural differences as well. We suggest that career choices develop, at least in part, from exposure to the various occupations available in a community: Adolescents aspire to what they know or can imagine. Rural areas tend to have more narrowly specialized economies than urban places (Carlson et al., 1981; Howley, 1989; McGranahan, 1988; Reid, 1989). That is, a higher (though declining) proportion of the industries in rural communities are agricultural or are concerned with refining raw materials. Thus, rural students may tend to aspire disproportionately to the agricultural, service, and manual occupations that are associated with those industries—that is, to occupations that require relatively little education. This tendency will be exacerbated to the extent that parents' occupations influence students' aspirations (Kuipers, Southworth, & Reed, 1979). On the other hand, nonrural students, we suggest, are more often exposed to managerial and technical occupations, lines of work that require higher levels of schooling. This structural argument suggests that labor markets in rural and nonrural communities differ, that these markets influence individuals' occupational aspirations over and above the effects of family SES, and that occupational objectives shape educational goals. Hence, rural students will aspire to less education than will their nonrural peers.

Clearly, the family process and labor market explanations are not mutually exclusive. However, they are not equally amenable to educational intervention. To the extent that child rearing practices are at the root of rural-nonrural differences in students' aspirations, educators can do relatively little. Family dynamics are, by and large, beyond the reach of either educational policy or practice. On the other hand, if the major determinant of any discrepancy is simply that rural students lack exposure to a broad range of occupa-

tions, schools might effectively intervene. For example, occupational education programs and strong career counselling efforts could raise the occupational sights of rural youth and thereby their educational aspirations (Breen, 1989; Haas, 1992; Preble et al., 1989).

In part, it was these considerations that led us to reconsider the rural-nonrural aspiration difference that others have noted. However, we also thought it consequential that the actual magnitude of the difference has not been an explicit interest in previous research. We think this is a critically important consideration. Before the discrepancy in aspirations is labelled a "problem for rural America" (Cobb et al., 1989, p. 11), its size should be assessed. In this regard, it is well to remember that a statistically significant difference is not thereby significant in any practical sense. With large data bases (e.g., High School and Beyond), trivial differences can be "significant." Instead, a measure of practical significance is required. In this study, we apply one of these measures of practical significance—effect size—and attempt to assess whether the aspiration difference is large enough to be considered a problem that needs correction.

### Method

To investigate the magnitude and causes of the rural-nonrural difference in educational aspirations, we used the same data set as Cobb et al. (1989) and Hansen and McIntire (1989): High School and Beyond (HSB). However, we applied a somewhat different methodology and moved one step beyond their analyses to examine the link between occupational and educational aspirations.

The HSB data were collected for the National Center for Education Statistics and consist of a nationally representative sample of 1015 U.S. High Schools. In the 1980 student survey, up to 36 sophomores and 36 seniors were randomly sampled from each school, resulting in approximately 30,000 students per cohort. (Surveys were also conducted of teachers, school administrators, and parents.) Students responded to a wide range of questions. They were queried regarding their background; their school experiences; the courses they had taken; their attitudes toward school, teachers, and classmates; their aspirations for further education; and their expected occupations at age 30 (National Opinion Research Center, 1987).

Our data came from the HSB senior cohort. Beginning with over 28,000 respondents, we first

eliminated students attending private schools, alternative public schools, and schools classified as "Cuban public" or "other Hispanic public." Such schools are overwhelmingly urban, and their students differ in numerous and unknown ways from typical public school students. Eliminating these respondents left 20,637 students in our sample.

HSB schools were classified by their administrators as urban, suburban, or rural. We combined urban and suburban to create a dichotomous variable, *Location*, where nonrural students were coded 1 and rural students 2. Our goal was to create a sample that was directly relevant to public school policy and to assessing rural-nonrural aspiration differences.

The HSB survey asked each student to indicate the minimum level of education they thought they would achieve. On a nine-point scale, possible answers ranged from "below high school" to "Ph.D., M.D. or equivalent." This question provided one of our measures of educational aspirations.

We also regressed the nine-point aspiration scale on a measure of each student's SES. Our SES measure (already contained in the HSB data base) was a composite of family educational levels, income, and occupations. (See National Opinion Research Center, 1987, for details of the variable's construction.) We then calculated a residual score (i.e., the difference between a student's actual aspiration level and that predicted by the regression equation). This adjusted score, which provided a measure of students' aspirations free of the effects of family SES, served as a second measure of students' educational aspirations.

To measure occupational aspirations, we used a HSB question asking students to identify the type of job that they thought they would hold as adults. Specifically, the survey asked students to "[N]ame the job or occupation that you expect or plan to have when you are 30 years old. Even if you are not at all sure, write in your best guess." The survey provided 17 response categories with several examples of specific jobs in each. (For example, one category was described as "PROTECTIVE SERVICE such as detective, police officer or guard, sheriff, fire fighter.")

We contrasted the percentage of rural and nonrural students who expected to hold jobs in each of the 17 categories. To the extent that the rural labor market is relatively lacking in professional and technical occupations, and this lack exerts an influence on students' job expectations, we should expect to find that rural youth less

Table 1  
*Educational Aspirations of Rural and Nonrural Seniors*

Aspiration	Rural (N = 6,849)	Nonrural (N = 13,768)	Difference
	% (N)	% (N)	
Less than High School	.6 (41)	.5 (65)	0.1
High School Graduate	25.9 (1,738)	19.0 (2,540)	6.9
Vocational School, less than 2 years	10.2 (686)	7.9 (1,052)	2.3
Vocational School, 2 or more years	11.9 (803)	12.1 (1,613)	-0.2
College, less than 2 years	2.8 (186)	2.8 (375)	0.0
College, 2 or more years	12.4 (832)	12.4 (1,665)	0.0
College graduate	22.3 (1,500)	25.3 (3,386)	-3.0
Master's Degree	7.9 (528)	11.0 (1,469)	-3.1
Ph.D., M.D., Equivalent	6.1 (407)	9.1 (1,213)	-3.0

often aspire to professional and technical lines of work. We were especially interested in the pattern and magnitude of any differences in these occupational expectations.

Next we selected, successively, all students aspiring to the same occupational category and then contrasted the mean educational aspirations of nonrural and rural pupils, using our residualized measure of educational aspirations. This procedure essentially let us compare the educational aspirations of rural and nonrural students while controlling both for their family SES and for jobs they expected to hold as adults. If the difference in rural-nonrural aspirations disappears after these controls are in place, we may infer that it is due to these two factors.

As we have noted, we were interested in the magnitude of the aspiration difference as well as its determinants. Where appropriate, we used a measure of effect size (McNamara, 1992) to assess the amount of influence that rural life has on educational aspirations. Effect size estimates provided us with a way of evaluating the "practical significance" of that influence. Essentially, an effect size statistic is a measure of the size of a discrepancy between two or more means expressed in standard deviation units. For example, in a study of the effect of a new curriculum on student learning, an effect size of .8 would indicate that the curriculum raised the mean score of a group .8

of a standard deviation over those of the comparison group. The important point to note is that an effect that is highly significant statistically (i.e., is very unlikely to have occurred by chance) may nevertheless have a very small effect size (i.e., have virtually no practical effect on the outcome of interest.)

We opted to use .30 as a standard for judging an effect to be important. This is a relatively lax standard. (Cohen [1988] suggests that an effect size of .20 be considered "small," one of .50 "moderate", and one of .80 "large".) We chose this permissive standard in part because of the unknown error of measurement in the HSB aspiration scale, and in part because we wanted to make it relatively easy for an "important" rural effect to emerge from these data, if one existed. An effect size of .3 would indicate that there is something about rural life that depresses students' aspirations by one-third of a standard deviation. Assuming this measure to be normally distributed, one can interpret an effect size of .30 as indicating that 62% of rural youth hold aspirations below the mean of those held by nonrural youngsters.

## Results

First, we address the magnitude question: How large is the rural-nonrural difference in educational aspirations? Table 1 presents the responses

Table 2  
*Unadjusted and Adjusted Educational Aspirations*

	Nonrural (N = 13,378)	Rural (N = 6,721)	<i>t</i>	<i>ES</i>
Unadjusted				
<i>M</i>	5.46	4.92	15.02*	.23
<i>SD</i>	2.36	2.37		
Adjusted				
<i>M</i>	.09	-.17	7.80*	.15
<i>SD</i>	2.19	2.18		

*Note.* Unadjusted aspirations fall on a nine-point scale (1 = less than high school, 9 = Ph.D., M.D., equivalent). Adjusted aspirations have had the influence of SES removed. For the latter scale, the *N* is 13,054 and 6,610 for nonrural and rural, respectively.

\* $p < .05$ .

of high school seniors to the question regarding the minimum level of schooling they thought they would receive. The table demonstrates that one's view of the magnitude of this difference depends on one's choice of a measure of central tendency. For example, choosing the mode supports the conclusion that rural seniors want little more schooling than what they are about to receive: a high school diploma. Modal nonrural seniors, on the other hand, want a college degree. That is a very large difference indeed.

If one chooses the median, however, the picture changes markedly. Rural students want some college, but less than two years (51.4%), while nonrural students want two or more years, but less than a bachelor's degree (54.7%). That is a considerably smaller difference. Further, none of the percentage differences strikes us as appreciable: Rural students are slightly more likely to settle for a high school diploma (by a margin of about 7%) and slightly less likely to want a baccalaureate or post-baccalaureate degree (by margins of about 3% each).

The mean, of course, provides a third measure of central tendency for assessing the rural-nonrural aspiration difference. (We make the assumption that the HSB educational aspirations question is an interval-level measure.) Using the mean, we see that the difference between rural and nonrural students is relatively small: approximately one-

half point on a nine point scale (see Table 2). Although this difference is statistically significant, with a sample of over 20,000 virtually *any* difference would be. Considered in terms of its effect size of .23, however, rural students' aspirations are less than one-fourth of a standard deviation below those of nonrural students—below the .30 standard we adopted. Though that is not a trivial figure, neither does it strike us as manifestly large. More importantly, note that this .23 figure represents the *total* effect of all aspects of rural life, regardless of their source.

We turn next to this matter of source: Why does rural living seem to depress adolescents' educational aspirations? As we have suggested, students' educational aspirations are known to be related to family SES, and rural families are, on average, lower in SES than are nonrural families. (In the subset of the HSB data that we are using, SES is correlated .39 with aspirations and -.14 with the dichotomous variable *Location*.) Assuming that family SES and the processes it stands for are largely beyond the control of educators, arguably it is appropriate to control for SES when contemplating the appropriateness of educational interventions. In Table 2, we also report the effect size measure and the corresponding *t* statistic when the dependent variable is the adjusted measure of educational aspirations (i.e., after the effects of SES are removed). When SES is controlled in this way, rural

Table 3  
*Occupational Aspirations of Nonrural and Rural Seniors (%)*

Aspirations	Nonrural (N = 13,667)	Rural (N = 6,614)	Difference
<b>College Degree Required</b>			
Higher Professional	12.5	9.3	-3.2
Lower Professional	27.0	22.7	-4.3
School Teacher	3.4	4.8	1.4
Technical	8.9	7.2	-1.7
Manager	7.3	5.9	-1.4
(Subtotal)	59.1	49.9	-9.2
<b>High School Diploma or Some College Required</b>			
Proprietor	4.0	3.5	-.5
Sales	2.1	2.0	-.1
Clerical	9.9	10.6	.7
Craftsman	8.2	9.7	1.5
Farmer	1.2	4.0	2.8
Military	2.1	2.4	.3
Protective Service	1.9	1.7	-.2
(Subtotal)	29.4	33.9	4.5
<b>Less Than High School Diploma Required</b>			
Homemaker	2.4	4.0	1.6
Service	3.3	4.3	1.0
Operative	2.7	3.8	1.1
Laborer	1.8	2.8	1.0
Not working	1.5	1.3	-.2
(Subtotal)	11.7	16.2	4.5

students continue to have lower aspirations than their nonrural peers. Although this difference is a statistically significant one, the effect of ruralness on educational aspirations is reduced from .23 to .15, or to roughly one-seventh of a standard deviation.

Next, we turned to occupations as another determinant of educational aspirations. Earlier, we suggested that students are likely to aspire to occupations that they are familiar with, and that the occupational structure of rural America has proportionately fewer professional and technical jobs. Hence, students will be more likely to set their sights on occupations that have less demanding educational requirements. In Table 3, we contrast the occupational aspirations of rural and nonrural youth. We have rearranged the HSB response categories into three groups roughly cor-

responding to the minimal level of education each requires for entry: at least a college degree, a high school diploma or some college, and less than a high school diploma.

The data suggest that rural students have much the same occupational aspirations as their nonrural counterparts, except that, as predicted, fewer aspire to professional and technical jobs (50% vs. 59%). Conversely, rural students are somewhat more likely to say they expect to hold a lower white collar or blue collar job at age 30 (34% vs. 29%).

The structural explanation for aspiration differences receives some support in Table 3. We suggested that rural students will be less familiar with professional and technical occupations than nonrural pupils, and therefore less likely to aspire

**Table 4**  
*Educational Aspirations of Nonrural and Rural Seniors by Expected Occupation, Adjusted for SES*

Occupation	Nonrural			Rural			<i>t</i>	<i>ES</i>
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>		
High Professional	1.99	1.69	1,594	2.05	1.61	605	-.78	—
Lower Professional	.87	1.83	3,436	.92	1.82	1,466	-.95	—
School Teacher	1.10	1.62	437	1.27	1.53	315	-1.47	—
Technical	.23	1.98	1,126	.27	1.98	465	-.33	—
Manager	.36	1.91	913	.12	1.94	380	2.08*	.13
Proprietor	-.62	2.04	499	-.65	1.98	226	.18	—
Sales	-.41	1.92	271	-.51	2.06	126	.46	—
Clerical	-1.00	1.98	1,223	-1.11	1.83	686	1.31	—
Craftsman	-1.67	1.60	1,011	-1.64	1.58	616	-.35	—
Farmer	-1.10	2.09	152	-1.37	1.91	260	1.35	—
Military	-.45	2.42	256	-.53	2.16	153	.33	—
Protective Service	-.29	2.01	233	-.25	2.05	111	-.16	—
Homemaker	-1.53	1.82	299	-1.71	1.53	255	1.25	—
Service	-1.36	1.74	401	-1.10	1.63	275	-2.00*	-.11
Operative	-1.45	1.85	334	-1.77	1.52	242	2.19*	.18
Laborer	-1.74	1.70	228	-1.87	1.65	173	.75	—
Not Working	-1.41	2.05	158	-1.51	1.74	74	.36	—

\**p* < .05.

to them. There is one obvious exception to this generalization: the occupation of schoolteacher. Presumably all adolescents are equally familiar with that profession. In Table 3, we see that rural students are slightly less likely to aspire to all occupations in the professional and technical category than their nonrural peers, with the single exception of schoolteacher. We infer that if occupational expectations influence educational goals, then the educational aspirations of rural students will be further depressed, over and above the effects of family SES, as a consequence of the nature of rural labor markets.

We further examine this possibility in Table 4. We selected successively all students who expect to hold the same occupation at age 30. Using the residual aspiration score, we contrast the educational aspirations of rural and nonrural students within each occupation; that is, we are controlling

for the effects on educational aspirations of both occupational goals and family SES. Where there is a statistically significant difference, we calculate an effect size to estimate the magnitude of the remaining discrepancy. As Table 4 demonstrates, the rural-nonrural aspiration difference virtually disappears when these controls are in place. In only three cases is there a statistically significant difference, and in one of these (service occupations) rural students have higher educational aspirations than nonrural pupils. The effect sizes of these three significant differences borders the trivial; their mean is only .067 and their median (for "manager") only .13. Finally, it is worth noting that some of these cases of statistical significance can be simply a consequence of chance—i.e. running 17 nonindependent *t* tests increases the possibility of making alpha errors.

### Conclusion

There is only a small difference in the educational aspirations of rural and nonrural youth, approximately half of this small difference is due to the lower SES of rural families, and most of the remainder is a consequence of adolescents' tendency to aspire less often to the highest-level professional jobs—to jobs that are relatively uncommon in rural regions. We are unconvinced, then, that low aspirations is "a problem for rural America" (Cobb et al., 1989, p. 11).

All of this is not to suggest that Cobb et al. (1989) and Hansen & McIntire (1989) were incorrect in finding that the aspirations of rural youth are lower than those of their nonrural counterparts. Rather, it is to suggest that their interpretation of their findings is problematic. How one conceptualizes a study, the sorts of controls one imposes on the data, and the standard one uses to decide that an effect is important are all critically important in explicating one's results. Put another way, it is the interpretations placed on research findings, not the findings themselves, that have practical consequences for rural students and their communities.

For example, rural school districts may exacerbate other problems when they treat students' educational aspirations as deficient. To the extent that these aspirations are a direct consequence of family SES, there may be little that schools can do. Educational programs designed to ameliorate the effects of complex and ill-understood family processes do not have a notable record of success. The persistence of relatively low achievement among the children of poor and minority parents, despite three decades of efforts to alleviate those problems, is illustrative (Hurn, 1993). Expending resources on programs of limited or unknown efficacy—especially in these times of severe fiscal constraints—is unwise. Similarly, expending resources to solve non-existent problems is imprudent.

Concerning resources, it is also worth noting that many of the programs proposed to correct the problem of low aspirations do not carry explicit price tags (see, for example, Breen, 1989; Haas, 1992; Preble et al., 1989). More important than their dollar costs, these programs may have especially high opportunity costs. Student time is not a free good. When student time is consumed by programs to raise aspirations, it is unavailable for other, perhaps more productive, educational purposes.

Our analyses suggest that the rural labor market is as important as family SES as a determinant of the rural-nonrural aspiration discrepancy. Consequently, school districts might be able to mount effective intervention programs that target directly students' occupational aspirations. For example, if rural students are simply unaware of many occupational opportunities that exist in nonrural areas, school districts might encourage higher educational aspirations by acquainting pupils with diverse lines of professional and technical occupations and their educational requirements. Good vocational counselling may be all that is required. In addition, there are programs specifically designed to raise the occupational aspirations of rural adolescents and help them adjust to urban life (e.g., Swift, 1988; Vaughn, & Vaughn, 1985).

However, there is a potentially serious problem with any effective strategy that raises the educational aspirations of rural youth by influencing their occupational goals. Professional and technical jobs are largely urban occupations. Thus, successfully encouraging students to raise their occupational sights is tantamount to encouraging the most academically talented youth to go on to college and then migrate to urban places (see Haller & Monk, 1992, for more on this point). From the individual and political perspectives that we mentioned earlier, such programs are eminently desirable. They encourage social mobility and they tend to enhance equality of educational opportunity for children of the rural poor. However, from the perspective of community development, it is not obvious that programs promoting the out-migration of a rural community's most talented youth are desirable, especially if that community is already economically depressed. Rural residents might reasonably view such programs as invitations to use their scarce tax dollars to aid the economic development of distant (and richer) cities. It will be cold comfort for them to learn that those expenditures have only trifling effects.

### References

- Alexander, K. L., Eckland, B. K., & Griffin, L. J. (1975). The Wisconsin model of socio-economic achievement: A replication. *American Journal of Sociology*, 81, 324-342.
- Becker, G. S. (1975). *Human capital* (2nd ed.). New York: Columbia University Press.



- Breen, D. T. (1989). Enhancing student aspirations: A goal for comprehensive developmental guidance programs. *Research in Rural Education, 6*, 35-38.
- Carlson, J. E., Lassey, M. L., & Lassey, W. R. (1981). *Rural society and environmental America*. New York: McGraw-Hill.
- Cobb, R. A., McIntire, W. G., & Pratt, P. A. (1989). Vocational and educational aspirations of high school students: A problem for rural America. *Research in Rural Education, 6*, 11-15.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Edington, E. E. (1970). Disadvantaged rural youth. *Review of Educational Research, 40*, 69-85.
- Haas, T. (1992). *What can I become: Educational aspirations of students in rural America*. Clearinghouse on Rural Education and Small Schools. Digest EDO-RC-91-11.
- Haller, E. J., & Monk, D. H. (1992). Youth migration from rural areas. In J. G. Ward & P. Anthony (Eds.), *Who pays for student diversity?* (pp. 48-70). Newbury Park, CA: Corwin Press.
- Hansen, T. D., and McIntire, W. G. (1989). Family structure variables as predictors of educational and vocational aspirations of high school seniors. *Research in Rural Education, 6*, 39-50.
- Howley, C. B. (1989). *The impact of rural industries on the outcomes of schooling in rural America*. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. (Eric Document Reproduction Service No. ED 308 059)
- Hurn, C. J. (1993). *The limits and possibilities of schooling* (3rd ed.). Boston: Allyn and Bacon.
- Jencks, C. S., Smith, M., Acland, H., Bane, M. J., Cohen, D., Gintis, H., Heyns, B., & Michelson, S. (1972). *Inequality: A reassessment of the effect of family and schooling in America*. New York: Harper & Row.
- Kuipers, J. L., Southworth, L. E., & Reed, H. M. (1979). *Occupational and educational goals of rural Appalachian children and their mothers*. Knoxville, TN: Tennessee Agricultural Experiment Station. (Eric Document Reproduction Service No. ED 219 169)
- McGranahan, D. A. (1988). Rural workers in the national economy. In D. L. Brown, N. Reid, H. Bluestone, D. A. McGranahan, & S. M. Mazie (Eds.), *Rural economic development in the 1980's: prospects for the future*. (Rural Development Research Report No. 69.) Washington, D.C.: U.S. Department of Agriculture.
- McNamara, J. F. (1992). The effect size criterion in school improvement research. *International Journal of Educational Reform, 1*, 191-202.
- Monk, D. H., & Haller, E. J. (1986). *Organizational alternatives for small rural schools*. Ithaca, NY: Department of Education, Cornell University. (Eric Document Reproduction Service No. ED 281 694)
- National Opinion Research Center. (1987). *High School and Beyond 1980 senior cohort third follow-up (1986): Data file user's manual*. Chicago: Author.
- Ohlendorf, G. W., & Rafferty, D. (1982). *The educational and occupational aspirations of Louisiana rural high school students*. Baton Rouge, LA: Louisiana Agricultural Experiment Station. (Eric Document Reproduction Service No. ED 218 020)
- Preble, B., Phillips, P., & McGinley, H. (1989). Maine's aspirations movement: Reaching out to youth. *Research in Rural Education, 6*, 35-38.
- Reid, J. N. (1989). The rural economy and rural youth: Challenges for the future. *Research in Rural Education, 6*, 17-24.
- Rogers, E. M., Burdge, R. J., Korsching, P. F., & Donnermeyer, J. F. (1988). *Social change in rural societies* (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.
- Sewell, W. H., & Hauser, R. M. (1976). Causes and consequences of higher education: Modes of the status attainment process. In W. H. Sewell, R. M. Hauser, & D. L. Featherman (Eds.), *Schooling and achievement in American society* (pp. 9-28). New York: Academic Press.
- Swanson, L. L., & Butler, M. A. (1988). Rural workers in the national economy. In D. L. Brown, N. Reid, H. Bluestone, D. A. McGranahan, & S. M. Mazie (Eds.), *Rural economic development in the 1980's: Prospects for the future*. (Rural Development Research Report No. 69.) Washington, D.C.: U.S. Department of Agriculture.
- Swift, D. (1988). *Preparing rural students for an urban environment*. Las Cruces: New Mexico State University. (Eric Document Reproduction Service No. 296 818)
- Vaughn, D. L., & Vaughn, P. R. (1985). *Handbook for rural students: Finding employment and adjusting to urban areas*. Las Cruces: New Mexico State University. (Eric Document Reproduction Service No. 276 536)
- Wilson, J. Q. & Hernstein, R. J. (1985). *Crime & human nature: The definitive study of the causes of crime*. New York: Simon & Schuster.