DOCUMENT RESUME

ED 338 456 RC 018 365

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TITLE High School and Student Characteristics in Rural and Urban Areas of Ohio.
PUB DATE Apr 91
NOTE 10p.; In: School and Community Influences on Occupational and Educational Plans of Rural Youth. Ohio Agricultural Research and Development Center, 1991, p43-50; see RC 018 361.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Aspiration; High Schools; *High School Seniors; *Institutional Characteristics; *Occupational Aspiration; Parent Aspiration; *Rural Urban Differences; Socioeconomic Background; *Student Characteristics

ABSTRACT

This paper examines the relationships between school location (urban versus rural) and students' occupational and educational aspirations. It also explores the relationships between student background factors and location of school. The sample consisted of 529 seniors in the class of 1989 in 10 rural high schools, and 718 seniors in 5 urban high schools. Data were obtained by a questionnaire survey and a review of academic records. Large differences were found between urban and rural school characteristics. Urban schools were larger; had more teachers, administrators, and support staff; and offered more courses and extra-curricular activities. They were also more costly to operate on a per-pupil expenditure basis. Rural students appeared to be fairly homogeneous, while the urban students seemed to have a greater mix of race and cultures. The high school curricula in the urban schools emphasized either academic education or vocational education. Few students were in what might be called a general curriculum. However, one-fourth of the students in the rural schools were enrolled in the general curriculum. Socioeconomic status scores were much lower for families in rural areas than for families in urban areas. Most students planned to advance their education beyond high school. Students from urban and rural areas differed little in their levels of occupational aspirations; however, students in rural areas have lower income expectations. It is recommended that the positive features of rural and urban schools be combined. (KS)

HIGH SCHOOL AND STUDENT CHARACTERISTICS IN RURAL AND URBAN AREAS OF OHIO

By

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High School and Student Characteristics in Rural and Urban Areas of Ohio

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School managers and those who make education policy in the United States argue that small schools and districts are too costly (Howley, 1989). Their views reflect the belief that 20th-century progress causes small schools to be both inefficient and to produce poor results (p. 2). Between 1930 and 1980 the number of school districts dropped by almost 90 percent. The total number of schools in the United States decreased 65 percent. The decline took place as the population grew by 70 percent (Guthrie, 1979).

School Size and Location

Conclusions from studies on relationships between school and district size, pupil achievement and cost have taken a dramatic turn in recent years. From the beginning of this century through the 1960s, the overwhelming evidence seemed to support large schools and school districts in terms of economies, program quality, and caliber of staff. As research designs began to take into account total cost and socioeconomic status of pupils, and to include additional criteria such as achievement, pupil self-image, and success in college, economies of scale evaporated at relatively low numbers of pupils, and the disadvantages of large size become readily apparent. The current interest in "effective schools" has highlighted the importance of school climate and school culture in affecting pupil achievement (Swanson, 1988, p. 1).

Goodlad (1984) observed that most of the schools clustering in the top group on major characteristics were small, compared with the schools clustering near the bottom. It was concluded that, while it was not impossible to have a good large school, it was more difficult. Recent research would lead one to the conclusion that schools still tend to reinforce the influence of student background (Anyon, 1987; Wilcox, 1982). Schools may be a place where the inequality inherent in a capitalist economic order does battle with democratic tendencies that assert all children's right to learn (Howley, 1989).

Barker (1985) claimed that many problems such as finances, shortage of teachers, changing social values, and special interest groups were magnified in small high schools, yet, due to smaller size, they offered the best opportunities to create a school climate conducive to the best teaching and learning.

Howley (1989) synthesized achievement advantages of small scale schools as possibly due to: small class size; good student affect; strong financial support, relative to SES; productive use of available financial resources relative to SES—particularly for the improvement of curriculum and instruction; and productive cooperation of students, staff, and community (pp. 7-8). Swanson (1988) concluded that at the senior high school level, assuming the availability of regional centers, there appeared to be some agreement on a minimum size of 400 to 600 students. A minimum district size of between 1300 and 1900 pupils was recommended for a complete K-12 program.

Aspirations

Students develop educational and occupational plans that build upon their backgrounds of experiences (Odell, 1988). The life experiences of secondary students have been determined in part by the families of which they are members, the communities in which they live, and the schools that they attend. These life experiences manifest themselves in the educational and occupational expectations of students (p. 17).

Rural or urban residence has been shown to be related to the educational and occupational aspirations of youth (Moore, Baum, and Glasgow, 1984; Cosby and Picou, 1973). Peterson (1978) found that adolescents from large urban communities thought more highly about themselves than did adolescents from rural communities. However, similarities were found between rural and inner-city youth with both having lower self esteem than other urban and suburban youth. Jyung and Miller (1990) reported no relationship between either educational or vocational aspiration and location; however, Barcinas (1989) concluded that urban students have higher educational and occupational aspirations than rural students.

Problem

Research has been somewhat consistent in reporting a relationship between location (rural or urban) and aspirations. Educational and occupational aspirations may be viewed as two different constructs. Several variables might be used to obtain a more complete measure

of each construct. For the purposes of this study, level of job expectations, level of job aspirations, expected income, surety of employment, age of occupational choice, and military service plans were considered to be measures of occupational aspirations. Plans for advanced education, type of advanced education planned, and when advanced education would begin were considered to be measures of educational aspirations. The major purpose of this research was to describe the relationships between school location (urban vs. rural) and students' occupational and educational aspirations. A secondary purpose was to explore the relationships between student background factors and location of school.

Objectives

The studies were conducted to answer the following research questions:

1. Is location of school (rural or urban) related to class size, enrollment, size of staff, number of curricular and extra-curricular offerings, and per-pupil expenditure?
2. Is location of school related to gender, ethnic background, socioeconomic status, education level of parents, parental expectation for student to pursue advanced education, parental discussions with students about advanced education, and grade point average?
3. Is location of school related to job expectations, job aspirations, expected income, surety of employment, and grade level at which occupational choice was made?
4. Is location of school related to plans for advanced education, type of advanced education planned, and when advanced education would begin?

Methods and Data Source

Data Source

The definition of rural schools used in Ohio was that they were located in counties with less than 40,000 population and outside a Standard Metropolitan Statistical Area. Also, the average enrollment per grade level at the secondary level was not to exceed 125 students. A total of 71 rural high schools were in the frame. Cluster sampling was used. Ten schools were randomly drawn. All schools agreed to participate. The sample consisted of all of the seniors in the high school class of 1989.

The definition of urban schools was that they were located in counties with more than 200,000 population and inside a Standard Metropolitan Statistical Area. The average enrollment per grade level at the secondary level was to exceed 300 students. One hundred fourteen urban public high schools met the identified criteria. A sample of 10 schools and 10 alternates was drawn randomly. However, since only five of the 20 agreed to participate, the urban sample should be regarded as an accessible rather than random sample. Three of the participating urban schools would be considered to be urban and two suburban. The urban sample consisted of one-half of the seniors in the class of 1989 in the participating schools. Schools in both samples were geographically distributed throughout the state of Ohio.

School principals also completed a questionnaire to provide descriptive information about the school. Responses were obtained from all 15 of the principals in the sample.

Instrumentation

The questionnaire was adapted from the work of Odell (1986). Content validity was established by a panel of experts consisting of university faculty members, school administrators, and former high school teachers. Pilot testing for suitability and reliability was conducted with students in schools not included in the sample. The test-retest reliability coefficient for the student questionnaire was .84. The test-retest reliability of the administrator questionnaire was .91.

The academic records of the students were used to obtain grade point averages. Grade point averages were verified by the school principals.

Data Collection

Data were collected during the months of March through May 1989. An introductory letter was mailed to each principal in the schools which had agreed to participate. A telephone call was then made to discuss the study, data collection procedures, instruments, and the principal's questions. A second telephone call was used to schedule a personal visit with a designated contact person. The personal visit was made by the researcher to deliver the questionnaires, provide parental permission forms, give instructions for recording student grade point averages and leave a mailing package for the return of the completed instruments. A total of 529 of the 767 Ohio rural senior students from the 10 schools provided signed parental permission forms and completed the questionnaires for a 69 percent response rate. A total of 718 of 834 urban students from the five schools provided signed parental permission forms and completed the questionnaires for an 86 percent response rate. All of the principals in the 15 schools responded to the administrator questionnaire.

Control of Errors

A number of errors normally associated with descriptive survey research were considered. Content

validity and test-retest reliability were established to control measurement error. Sampling error can result when a sample is not representative of the population. Random selection of the rural schools and use of the population of senior high school students from each of the schools yielded a 95 percent probability of sampling estimates within plus or minus 3.5 percent of the population values for the rural sample. Sampling error could not be calculated for the urban sample because it had to be considered as accessible rather than random. Frame and selection errors were controlled through use of a published directory of schools and use of all senior students on the class lists of the selected schools. All schools in the frame had an equal probability of being selected. The chief source of error was nonresponse error. Because of the need to secure parental permission forms, a higher rate could not be obtained within the resources allocated to the project. The reader should be cautioned that some bias in findings may result because 31 percent of the rural sample and 14 percent of the urban sample failed to respond, and because only five of 20 urban schools agreed to participate.

Data Analysis

Data were described using frequencies, percentages, means, and standard deviations. One-way analysis of variance with post-hoc analysis on interval data and chi-square on nominal data were used to discover significant differences between urban and rural schools on some variables and between urban and rural students on other variables.

Results

Characteristics of Schools

Data reporting characteristics of schools are in Table 1. In rural schools the senior class of 1989 averaged 74 students. In urban schools the average was 333 students. The four-year high school enrollment averaged 309 for rural schools and 1368 for urban schools. Rural high schools had an average of 24 teachers, no teacher aides, three certified support staff, and one administrator. Urban schools had an average of 79 teachers, two teacher aides, 13 certified support staff, and five administrators. Rural schools listed a mean of 84 curricular offerings and 23 extra-curricular offerings. Urban schools listed a mean of 221 curricular offerings and 41 extra-curricular offerings. Per-pupil expenditures averaged $2657 in rural schools and $3527 in urban schools.

Background Characteristics of Students

Background characteristics of students in rural and urban schools are reported in Table 2. No difference between rural and urban students in gender was found. Students from the two populations differed significantly in ethnic background. The rural population was 94 percent white; the urban population was 72 percent white.

The high school curriculum of rural and urban students differed significantly. Fewer urban students (9 percent), compared to rural students (23 percent), were in the general curriculum. A higher percentage of urban students were in the vocational (27 percent) and academic (64 percent) curricula than rural students (19 percent and 58 percent, respectively). Rural students (2.64) had slightly higher grade point averages than urban students (2.54). There was no difference between the two populations in the mean number of extra-curricular activities in which they participated.

The occupations reported for fathers and mothers were assigned a socioeconomic status (SES) index level developed by Stevens and Cho (1985). Values from zero (low status) through 96 (high status) were assigned to occupations. The mean SES scores for rural students was 30.8. It was 45.0 for urban students. The number of siblings was greater for rural students (2.8) than urban students (2.1).

Sixty-five percent of the rural students had fathers with less than

Table 1. Characteristics of Rural and Urban Secondary Schools in Ohio

	School Location				
	Rural		Urban		Probability
Variables	mean	s.d.	mean	s.d.	(t-test)
School Size					
Senior Class Size	74	22.3	333	116.6	$p<.05$
Total Enrollment	309	76.2	1368	443.0	$p<.05$
School Staff					
Teachers	24	3.7	79	10.9	$p<.05$
Teacher Aides	0.3	0.5	2	2.1	$p<.05$
Certified Support	3	1.7	13	15.5	$p<.05$
Administrators	1	0.5	5	1.2	$p<.05$
Curricular Offerings	84	20.8	221	44.5	$p<.05$
Extra-curricular Offerings	23	10.2	41	7.8	$p<.05$
Per Pupil Expenditures	$2657	379.4	$3527	522.8	$p<.05$

Table 2. Personal Background Characteristics of Rural and Urban Twelfth-Grade Students in Ohio

Variables	School Location		
	Rural	Urban	Probability
Gender			
Female	51.0%	50.8%	$p>.05^1$
Male	49.0%	49.2%	
Ethnic Background			
White	94.1%	72.1%	$p<.05^1$
Non-White	5.9%	27.9%	
Curriculum			
Academic	58.0%	64.5%	$p<.05^1$
General	22.9%	8.8%	
Vocational	19.1%	26.7%	
Grade Point Average	2.64	2.54	$p<.05^2$
Extra-Curricular Activities			
mean	3.6	3.7	$p>.05^2$
s.d.	2.2	2.4	$p<.05^2$
Socioeconomic Status		45.0	
mean	30.8	21.8	$p<.05^2$
s.d.	18.0		
Number of Siblings			
mean	2.8	2.1	$p<.05^2$
s.d.	2.3	1.7	
Fathers' Educational Attainment			
Less than high school	13.7%	4.9%	$p<.05^1$
High school	51.3%	31.4%	
Bus./technical school	8.8%	8.1%	
Junior college	5.9%	7.7%	
Four-year college	9.5%	20.1%	
Advanced degree	4.0%	17.2%	
Mothers' Educational Attainment			
Less than high school	7.1%	4.2%	$p<.05^1$
High school	58.3%	40.4%	
Bus./technical school	11.1%	10.1%	
Junior college	5.5%	10.1%	
Four-year college	8.4%	20.9%	
Advanced degree	2.9%	9.0%	
Parental Discussions			
Discussed plans	94.1%	97.6%	$p<.05^1$
No discussions	5.9%	2.4%	
Parental Expectations			
Yes	60.8%	74.3%	$p<.05^1$
No	22.7%	15.4%	
Not sure	16.5%	10.3%	

Note. Test of Significance: 1=Chi-square; 2=t-test. Alpha level=.05.

a high school education or only a high school education. In contrast, 53 percent of the urban students had fathers with more than a high school education. Similar results were obtained for mothers; 65 percent of the rural mothers had less than or only a high school education and 50 percent of the urban mothers had more than a high school education.

Nearly all (above 94 percent) of the students in both populations had discussed their future educational plans with their parents. Rural students' parents (61 percent) were less likely to expect their children to further their education beyond high school than were urban parents (74 percent).

Aspirations

Aspirations of the students in the study are reported in Table 3. Eighty-four percent of the urban students and 74 percent of the rural students planned to advance their education beyond high school. Students planning to further their study beyond high school listed the area they planned to pursue. Rural students were more likely than urban students to pursue advanced study in the areas of agriculture, education, and the health sciences. Urban students were more likely than rural students to pursue study in the areas of the arts, sciences, social sciences, and business. A higher percentage of urban students (65 percent) than rural students (47 percent) planned to attend a four-year college. Rural students (30 percent) were more likely than urban students (15 percent) to attend a technical college. Only slight differences were noted between the two groups in when their advanced education would begin.

SES index scores (Stevens and Cho, 1985) were used to compare students from the two environments on their occupational choices. Two variables were measured. The first, idealistic occupation, was the variable describing the occupation students desired to enter. The second, realistic occupation, was the variable describing the occupation the students expected to enter. There was a significant, but small difference between rural and urban students in the SES index score of their idealistic and realistic occupational choices. The SES index scores were higher for the idealistic choice than for the realistic choice for both groups. Rural students selected idealistic occupations averaging a SES score of 58, compared to scores for urban students of 61. Realistic occupational choices for rural students averaged 54. Realistic occupational choices for urban students averaged 57.

Income expectations of the two groups differed. Only about one-fourth (27 percent) of the rural students expected incomes above $25,000, but 39 percent of the urban students expected incomes above $25,000. There was no difference between the two groups in their confidence that they could find employment in their expected occupation. About 63 percent of the students were sure of finding their expected employment. The two groups also did not differ in the time at which they made their occupational choice. The majority of students appeared to have made their selection in the 11th or 12th grade. There was also no difference between the two groups in their military service plans. About 10 percent of the urban students and 11 percent of the rural students indicated that they planned to enter the military service.

Discussion of Results

School Characteristics

As expected, large differences were found between urban and rural school characteristics. Urban schools were larger; had more teachers, administrators, and support staff; and offered more courses and extra-curricular activities. They were also more costly to operate on a per-pupil expenditure basis.

These findings related to total expenditures per pupil appear to be consistent with the findings of Swanson (1988). In that study, it was found that expenditures per pupil declined as district size increased to about 3,000 pupils. Between 3,000 and 4,000 pupils there were no changes in the expenditures examined; above 4,000 pupils, per pupil expenditures began to increase with size. However, Swanson also found that this curvilinear relationship could be explained equally well by district full valuation per pupil and district socioeconomic characteristics (p.4).

Even though there were more extra-curricular offerings in large schools than in small schools, the average participation was the same in both rural and urban settings. Each student, whether in a urban and rural setting, participated in about 3.5 extracurricular activities.

It was interesting to note that one administrator was responsible for a rural high school enrollment of 309 students, but five administrators were used with an urban high school enrollment of 1368. The larger setting appeared to offer no advantage in administrative efficiency.

The difference in curricular offerings between rural and urban schools may be partially explainable by the fact that vocational education programs were a part of the curricular offerings of the urban schools; however, students in rural schools who desired vocational education programs generally needed to enroll in a joint vocational school, a cooperative venture among several rural school districts.

Student Background Characteristics

Students from the two populations were quite different in ethnicity.

Table 3. Educational and Occupational Aspirations of Rural and Urban Twelfth Grade Students in Ohio

Variables	School Location		
	Rural	Urban	Probability
Plans for Advanced Education			
Will attend college	73.5%	84.3%	$p<.05$[1]
Will not attend college	11.3%	6.0%	
Not sure	15.1%	9.7%	
Area of Study			
Agriculture	3.1%	0.7%	$p<.05$[1]
Arts	5.4%	7.9%	
Sciences	4.4%	8.5%	
Humanities	2.3%	2.1%	
Mathematics	3.3%	4.1%	
Social Sciences	3.3%	7.3%	
Education	9.2%	6.5%	
Engineering	12.1%	10.3%	
Health Sciences	13.1%	6.9%	
Business	34.7%	41.5%	
Type of Planned Advanced Education			
Four-year college	47.2%	65.1%	$p<.05$[1]
Technical college	29.7%	15.4%	
Junior college	5.1%	7.1%	
Do not know	10.8%	8.8%	
Don't plan to attend	7.2%	3.5%	
When Advanced Education Would Begin			
After high school	61.6%	69.5%	$p<.05$[1]
After military service	5.9%	4.6%	
After working a few years	10.4%	9.5%	
No definite plans	15.5%	12.7%	
Don't plan to attend	6.6%	3.6%	
Idealistic Occupation			
mean	58.0	60.7	$p<.05$[2]
s.d.	20.5	20.0	
Realistic Occupation			
mean	54.0	57.3	$p<.05$[2]
s.d.	21.3	21.1	
Expected Income			
less than $15,000	14.7%	10.2%	$p<.05$[2]
15,000-19,999	30.9%	24.9%	
20,000-24,999	27.1%	25.8%	
25,000-29,999	13.2%	17.8%	
30,000-34,999	8.2%	9.6%	
Over $35,000	5.9%	11.7%	
Surety of Employment			
Sure	63.0%	63.6%	$p>.05$[1]
Unsure	37.1%	36.4%	
Time When Occupational Choice Was Made			
Have not decided	5.5%	5.6%	$p>.05$[1]
Prior to sixth grade	3.6%	6.1%	
Seventh or eighth grade	6.3%	7.0%	
Ninth or tenth grade	23.3%	26.0%	
Eleventh or twelfth grade	61.3%	55.3%	
Military Service Plan			
Will enter	11.4%	9.6%	$p>.05$[1]
Will not enter	78.7%	83.1%	
Not sure	9.8%	7.3%	

Note. Test of Significance: 1=Chi-square; 2=t-test. Alpha level=.05.

The rural students appeared to be quite homogeneous, however the urban students seemed to have a greater mix of race and cultures. The lack of opportunity of rural students to interact with persons of varying backgrounds may be a limiting factor in their educational and sociological development.

The high school curricula in the urban schools in the sample emphasized either academic education or vocational education. Few students were in what might be called a general curriculum. However, one-fourth of the students in the rural schools were enrolled in the general curriculum. One reason for this is that rural students often had to leave their home school to participate in vocational education. Therefore, students may have seen the general curriculum as a better alternative to the academic curriculum, since it could be obtained at the home school.

SES scores were much lower for families in rural areas than for families in urban areas. Families were larger in rural areas. The educational level of the parents was higher in urban areas than in rural areas. Urban parents were more likely to expect their children to advance their education beyond high school. All of these factors are reflective of the differences in social context between rural and urban areas. These differences in social context of the two locations help to explain differences in aspirations of students.

Educational Aspirations of Students

Most students planned to advance their education beyond high school. Rural students and urban students differed some in the areas they planned to pursue. They seemed to choose areas they had been able to observe or experience. The four-year college was a more popular choice for urban students than for rural students; however, rural students were more likely to attend technical institutes than urban students. This difference may be due partially to the fact that technical institutes may be more available geographically than four-year universities in rural areas.

Occupational Aspirations of Students

Students from urban and rural areas differed little in their levels of occupational aspirations. Students from rural areas will need to leave their communities to fulfill their occupational aspirations. Jobs with high SES scores simply are not available in sufficient quantity in rural areas to satisfy the expectations of rural students. Rural communities will continue to export their brightest and most capable youth. This will further compound the problems faced by many of these communities.

Students in rural areas have lower income expectations than students in urban areas. This may be due to the differences in pay scale for average workers in the two locations. Rural students do not observe as many high-income workers as urban students.

Recommendations

The expected differences were found between rural and urban areas in school characteristics. Further research is warranted on the issue of optimum school size for both rural and urban settings.

Rural and urban cultures appear to be somewhat different. Rural students tend to be more homogeneous than urban students. It is recommended that schools develop ways to provide cultural interchange between rural and urban schools and students. Students from urban areas should learn what it is like to live and work in a rural area. Students from rural areas should learn what it is like to live and work in an urban area. Some teacher certification programs require an urban teaching experience for certification. The rural culture is different from the urban one. States should consider whether it might also be wise to require a rural teaching experience for certification.

Parents of rural students were less likely to expect their children to advance their education. Rural schools should consider ways to assist parents and students as they consider the options for advanced education.

Vocational education appeared to be less available to rural students than to urban students. While vocational education was offered in rural areas by joint vocational schools, enrollment in such schools required the students to forsake attendance at their home school. Ways should be explored to allow students to take programs at the joint vocational school and also take academic subjects at the home school. Rural communities should develop ways to challenge their brightest students to return to rural areas. These individuals can provide the expertise needed to develop rural communities, even in the face of societal pressures that encourage urban development at the expense of rural development.

It appears that there are disadvantages to being either very large or very small. The challenge is to provide stimulating learning environments with broad educational programs characteristic of large urban schools along with the supportive social structure characteristic of small rural schools.

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