

# The Quality of Rural Education in the Midwest

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Many Americans believe that our educational institutions are not meeting the needs of our rapidly changing economy and society. They see elementary and secondary schools as providing inadequate basic education for many if not most young persons. They likewise see schools and adult education programs as ineffective in assisting and guiding the school-to-work transition in our dynamic and technologically complex economy.

The present system is seen as failing residents of both rural and urban areas, those who reside in the countryside and small towns as well as those who live in large cities. But the roots of failure are thought to differ between rural and urban areas. In large cities, deficiencies are often attributed to poverty, the breakdown of families, and unresponsive bureaucracies. In the rural Midwest, as well as other rural areas, deficiencies are linked in large part to the high cost of delivering educational services to sparsely populated areas, many of which face continuing population losses. For rural school districts in particular, population loss means declining enrollments, rising costs, and increasing pressure to curtail course offerings, merge with other districts, or both.

This cost disadvantage points to the questions addressed in this paper. Do relatively high costs mean that rural residents, especially students in elementary and secondary schools, have more limited opportunities and poorer educational outcomes than urban residents? Is the quality of rural education improving or declining?

The evidence we bring to bear on these questions pertains mainly to elementary and secondary education in the states of the upper Midwest—Iowa, North and South Dakota, Minnesota, Wisconsin, and Illinois, excluding Cook, DuPage and Kane counties. The most detailed data are for Iowa, which provides a useful case study because it faces many of the rural education issues that arise in other states.

Although far from comprehensive, this report is a starting point for discussion. And it points to several conclusions.

- By a number of measures, the quality of public elementary and secondary education is increasing for rural and urban students alike. Course offerings are more varied, and the fraction of high school students taking advanced courses is increasing. A larger fraction of students complete high school today than a generation ago, and more of those graduates pursue post-secondary education. Even though a larger fraction of each age cohort is evaluated by standardized tests today than in decades past, there is no evidence of secular decline in performance on those tests.
- At the same time, a number of indicators suggest that secondary education may be less satisfactory for rural than for urban students.
- There appears to be no such rural-urban gap in opportunities for worker training and retraining and adult and continuing education in the case of Iowa.

Let's now look at some of the evidence underlying these statements.

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## Dimensions of Educational Quality

The quality of rural education can be assessed on two broad dimensions: *outcomes* and *opportunities*. For elementary and secondary (K-12) education, outcomes are commonly measured by performance on standardized tests, dropout rates, student satisfaction, pursuit of post-secondary education, and college success. Outcomes of adult and continuing education are measured by indicators of the job-market success of trainees such as job-placement rates and wages. Opportunities are commonly measured by the quantity and quality of resources used in education. For K-12 education, these measures include per-student expenditures, student-teacher ratio, training and experience of teachers, richness of curriculum, and availability of gifted, special education, and counseling programs. Opportunities for adult education are measured by the cost, accessibility, variety, and quality of training available.

We use data from two sources: Iowa Department of Education and American College Testing (ACT). These data provide a fairly detailed picture of how outcomes and opportunities in elementary and secondary education vary with school and school district size (enrollment).

### Outcomes

What do we know about the results achieved by schools in the Midwest? Are outcomes improving or worsening? Are the outcomes markedly different for rural than for urban schools? We first consider trends in outcome measures and then turn to rural–urban comparisons.

**Trends.** Standardized tests of educational achievement are one means of gauging outcomes. The Iowa Test of Basic Skills (ITBS) assesses educational achievement through grade 8; the Iowa Test of Educational Development (ITED) assesses achievement in grades 9 through 12. Both tests have been used in Iowa and throughout the nation for a number of decades. ITBS and ITED scores for Iowa students are about the same as three decades ago. There was, however, a decline in scores from the middle 1960s through the middle 1970s with scores again approximating their previous peaks by 1990 (table 1).<sup>1</sup> Test scores followed the same general pattern of change nationally (figures 1 and 2). As measured by these widely used and highly regarded tests, average educational achievement is *not* declining in either Iowa or the nation as a whole.

**Table 1** ITBS and ITED Scores for Iowa Students, 1955–96

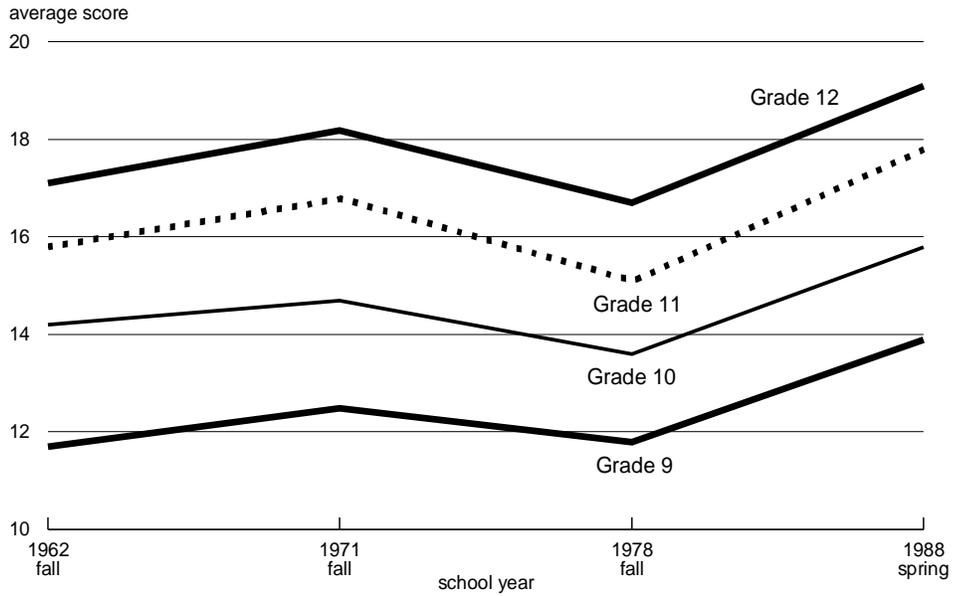
Year	ITED score <sup>a</sup>		ITBS score <sup>b</sup>	
	grade 9	grade 11	grade 3	grade 8
1955	na	na	87.5	92.3
1960	na	na	96.8	97.6
1965	100.0	100.0	100.0	100.0
1970	96.6	94.2	100.3	97.6
1975	91.7	91.5	101.2	93.7
1980	93.1	92.1	106.1	94.0
1985	100.7	99.5	109.6	97.6
1990	105.5	102.1	112.8	99.3
1995	106.2	103.0	109.3	99.2
1996	na	na	108.4	99.1

<sup>a</sup>Average score in each year stated as a percentage of 1965 score.

<sup>b</sup>Median score in each year stated as a percentage of 1965 score.

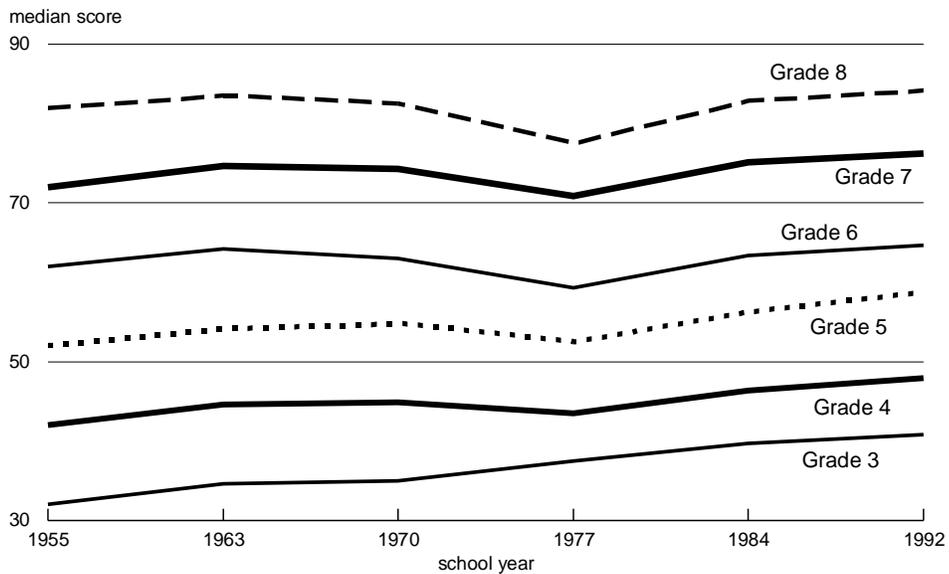
Source: Iowa Testing Program, University of Iowa.

**Figure 1** Estimated National Average ITED Composite Scores



Sources: Data for 1962 and 1988 are from Iowa Testing Program archives. Data for 1971 and 1978 are from Science Research Associates Technical Reports, No. 7-8187 and No. 7-4042.

**Figure 2** Median ITBS Composite Scores



Sources: Iowa Basic Skills Testing Program, *Achievement Trends 1955-84*, and H.D. Hoover, personal communication, November 1994.

How well schools prepare students academically for college is one of the more important measures of performance. The ACT (American College Testing) Assessment is used throughout the U.S. in college admission decisions and for academic counseling of admitted students.<sup>2</sup> Higher scores indicate better preparation for college. Average scores on the ACT Assessment have been relatively stable over the past 15 years even though the fraction of graduates taking the test has been increasing in Iowa and nationally (table 2).<sup>3</sup> Similarly, average SAT scores have been stable over the past decade. Mathematics scores have increased slightly (from 475 to 482 nationally and from 576 to 583 for Iowa), while verbal scores have decreased slightly (from 431 to 428 nationally and from 519 to 516 for Iowa).

There is other evidence that educational outcomes are stable if not improving. The percentage of Iowa public school graduates enrolled in post-secondary education and training in the year following graduation has increased from 61.4% for 1985–86 graduates to 71% for 1993–94 graduates.<sup>4</sup> Dropout rates in Iowa have fallen in school districts of all sizes; for grades 7–12, the average dropout rate decreased from 2.9% in 1985–86 to 2.4% in 1994–95. Nationally, dropout rates have also declined over time. For grades 10–12, the percentage of students dropping out without completing school fell from 6.3% in 1973 to 4.3% in 1992. Over the same period, the percentage of persons 18–24 years old who had not completed high school and were not in school decreased from 15.7 to 12.7%.<sup>5</sup>

Not only is a larger share of students completing high school, students are taking more academically challenging courses while there. The percentages of Iowa students enrolled in advanced classes have increased over the past decade: from 31 to 52% for foreign language; from 9 to 14% for trigonometry; from 6 to 12% for calculus; from 24 to 34% for physics; and from 48 to 69% for chemistry. Reflecting this trend, an increasing share of Iowa students who take the ACT test have taken college preparatory or core coursework.<sup>6</sup> The percentage of Iowa’s ACT-tested high school graduates completing the core coursework or more increased from 44.6% in 1987–88 to 63.1% in 1994–95. The corresponding national percentages were 41 and 54%.

**Table 2** Iowa and National Average ACT Composite Scores<sup>a</sup>

Year	Iowa		U.S.	
	Scores	Percent participation	Scores	Percent participation
1980	20.5	57.8	18.5	27.1
1985	20.3	63.9	18.6	27.4
1990	21.8	62.6	20.6	31.7
1991	21.7	63.4	20.6	32.2
1992	21.6	64.7	20.6	33.6
1993	21.8	63.6	20.7	34.9
1994	21.9	64.3	20.8	35.8
1995	21.8	62.2	20.8	36.1

<sup>a</sup>Scores based on different version of test prior to October 1989 than after that date.  
Source: American College Testing Program.

**Rural/urban comparisons.** Given that educational outcomes appear to be stable or improving when averaged across all schools, the question remains whether outcomes are different for students in rural areas. We use data for schools and school districts with relatively small enrollments to gauge performance of rural schools. Although the states considered in this report are generally regarded as having relatively large rural populations, table 3 shows that less than 5% of Iowa and midwestern students taking the ACT test were from small schools (graduating class less than 25).<sup>7</sup> Similarly, less than 5% of Iowa's 1995 elementary and secondary enrollment was in small districts (less than 400 students).

*Test scores.* Table 4 shows that average ACT composite scores for midwestern and Iowa high school graduates were somewhat lower for the smallest (graduating class less than 25) and largest (graduating class of 900 or more) high schools.<sup>8</sup> In addition to having lower scores on average, a smaller percentage of students from

**Table 3** Percent of 1995 ACT Test Takers by Size of High School Graduating Class

Class size	Midwest	Iowa
less than 25	4.6	4.0
25–99	22.2	38.7
100–199	19.0	21.9
200–399	29.6	27.2
400–599	16.3	6.4
600–899	5.9	0.9
900 or more	2.3	1.1

Source: American College Testing Program.

**Table 4** ACT Composite Test Scores for 1995 High School Graduates

Class size	Average score		Percent scoring 27 or higher		Percent scoring 18 or lower	
	Midwest	Iowa	Midwest	Iowa	Midwest	Iowa
less than 25	20.5	21.0	10	11	36	31
25–99	21.2	21.5	13	13	30	25
100–199	21.3	21.7	14	14	29	24
200–399	21.7	22.3	17	19	27	22
400–599	22.3	22.1	21	18	23	22
600–899	22.4	21.2	22	16	23	33
900 or more	19.8	20.4	7	9	41	35

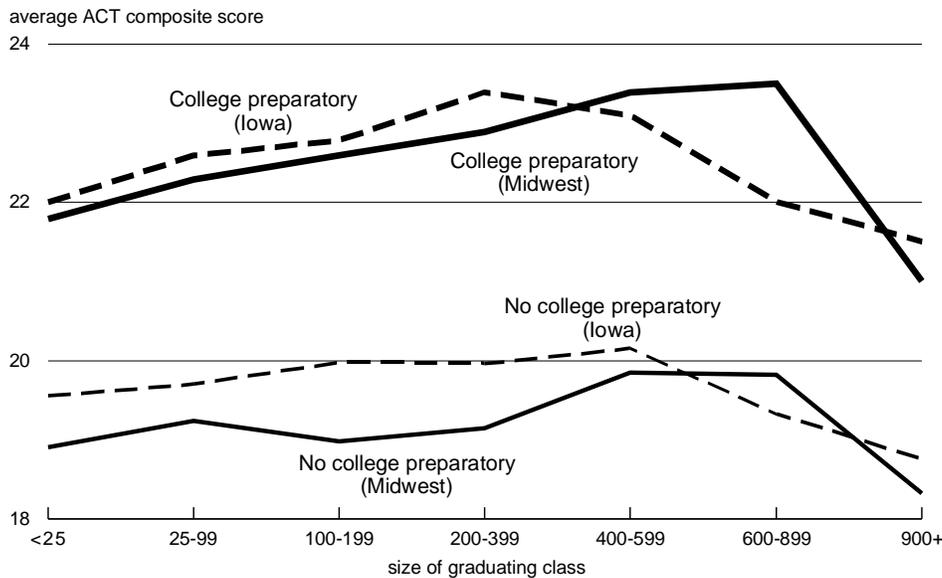
Source: American College Testing Program.

small schools scored in the “scholarship” range, 27–36, and a larger percentage scored 18 or lower.<sup>9</sup> For the nation as a whole, average ACT scores were also lower for the smallest and largest schools. Students from schools in the middle size ranges, graduating classes of 100 to 600, consistently have higher average achievement levels as measured by the ACT test. In 1995, these middle-sized schools accounted for 55% of ACT-tested graduates in Iowa and 65% of such graduates in the Midwest, while the smallest schools accounted for slightly less than 5% of graduates.<sup>10</sup>

ACT scores vary with factors other than school size. Students who take college preparatory courses consistently score higher than those who do not (figure 3). In Iowa and nationally, ACT composite scores have averaged about 3 points higher for students who have taken college preparatory coursework. Iowa district-level data show the same pattern. Average ACT scores are also higher for high-income than for low-income test takers (figure 4).

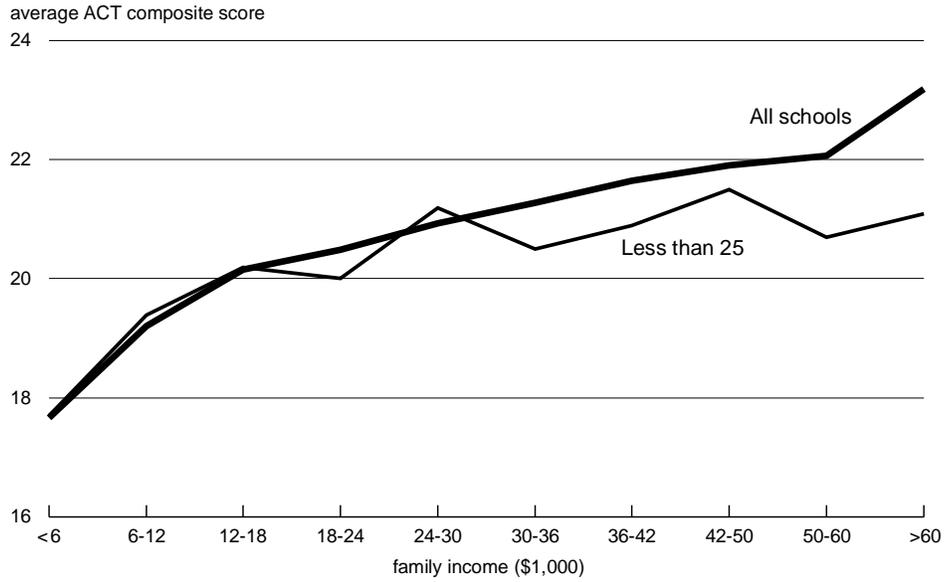
The effects of coursework and income on test scores may explain in part the relatively low scores of students in the smallest and largest school categories. The percentage of test takers with core coursework is lower in both small and large schools, and the fraction of test takers from high-income families increases with school size until the largest size (figure 5). However, as figure 3 shows, even when allowance is made for coursework, the smallest and largest schools still had somewhat lower scores than the intermediate size schools. And, as figure 4 shows, for each income level, scores for the smallest schools are either near or somewhat below average.<sup>11</sup>

**Figure 3** Effect of Coursework on ACT Scores



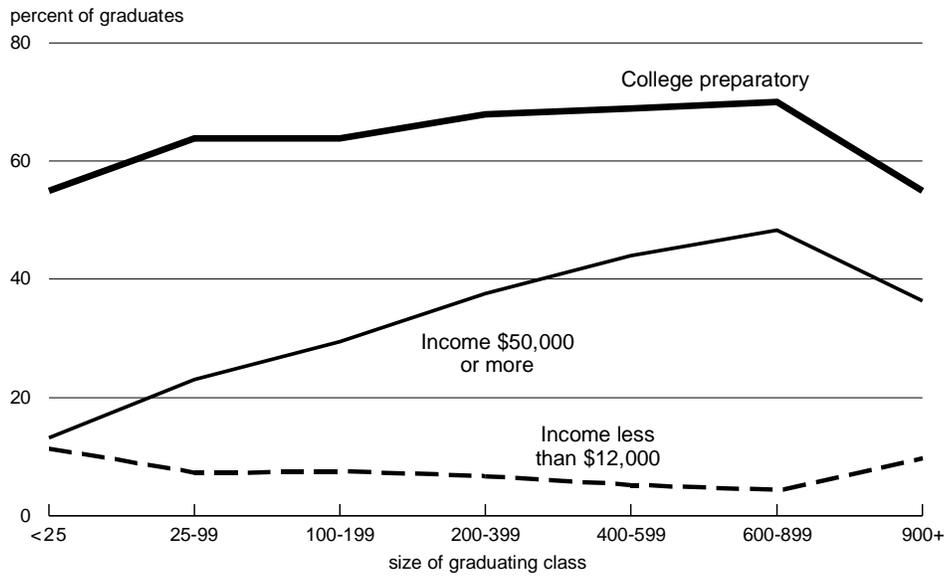
Source: American College Testing Program.

**Figure 4** Income, School Size, and ACT Scores



Source: American College Testing Program.

**Figure 5** Coursework and Income by School Size



Source: American College Testing Program.

Courses taken in high school not only affect ACT scores; they also affect first-year academic performance in college. Among ACT-tested high school graduates who were college freshmen in 1994–95, 19% of those with college preparatory coursework earned high college grades (grade point average of 3.5 to 4.0). But only 13% of those without such coursework had 3.5 to 4.0 grade point averages. Although college grades varied with high school course work, they did not vary with school size.

Small schools had lower scores even though they had the lowest rate of testing both nationally and in the Midwest. A lower rate of testing can result in higher average scores if only the more able students are tested. But small schools apparently did not engage in such selective testing. Or if they did, any positive effect on scores was not sufficient to prevent small schools from having below-average scores.

To this point we have examined outcomes for only those students who take the ACT Assessment, somewhat more than 60% of graduates in the midwestern states.<sup>12</sup> What can be said about the student population as a whole? As evidence on this question, we have test scores for a state’s *total* student population *arrayed by school size* only for Iowa. Table 5 shows that the average ITED scores of Iowa’s grade 9 students in 1993–94 were virtually the same for all school sizes. The same was true for other grades. These data do not, of course, warrant a conclusion that average ITED scores for the full midwestern student population would be independent of school size. But they are consistent with the results for ACT test takers, which show only a weak link between school size and average ACT scores.

**Table 5** ITED Scores of Ninth Graders in Iowa Schools by School Size, 1993–94<sup>a</sup>

Statistic	Number of students taking exam <sup>b</sup>		
	50 or fewer	50 to 150	More than 150
Number of schools	153	152	47
Mean score <sup>c</sup>	275.04	274.91	275.53
Standard deviation	10.42	8.65	8.80
90th percentile	287.28	285.96	286.87
75th percentile	281.79	280.45	282.12
50th percentile	275.73	274.86	275.00
25th percentile	269.50	268.67	269.88
10th percentile	260.90	264.17	264.35
Maximum	300.00	298.00	292.00
Minimum	242.00	255.00	256.00

<sup>a</sup>Average ITED score of ninth grade students, by size of high school, 1993–94 school year. Total number of schools was 352; total number of students taking test was 31,113.

<sup>b</sup>High school size would generally be three to four times the number of ninth grade students taking the exam.

<sup>c</sup>Average score of schools with indicated number of students. For example, 153 schools had fewer than 50 ninth grade students taking the exam. The average ITED composite score was computed for each of these schools; the average of these average scores is 275.04. The median of these average scores is 275.73 and 90 percent of the schools had average scores below 287.28 while only 10 percent had average scores below 260.9.

Source: Iowa Testing Program, University of Iowa.

*Other output measures.* The success of K-12 education is indicated in part by the activities and success of high school graduates, as well as the percentage of young people completing high school. The percentage of Iowa's high school graduates pursuing post-secondary education varies only slightly by district size. But a lower percentage of Iowa students from the smaller districts attend four-year colleges (table 6). The same pattern holds for 1995 midwestern graduates taking the ACT test. A below-average share of graduates from small schools planned graduate or professional studies, while an above-average share planned only two years of college (table 7).

Smaller school districts do show better on one statistic. Iowa's smaller districts (below 250 enrollment) have had below-average dropout rates in recent years, and the larger districts (2,500 and above) have accounted for over 50% of total dropouts.

**Table 6** Percent of 1994 High School Graduates in Iowa that Attended College the Following Year, by School District Size

District size	4 year college	2 year or community college
below 250	34.1	36.3
250-399	38.8	28.9
400-599	34.6	29.3
600-999	36.9	30.0
1000-2499	37.8	29.6
2500-7499	40.3	27.2
7500 +	43.7	24.1
All	39.2	27.9

Source: Iowa Department of Education.

**Table 7** Educational Plans of 1995 Midwestern High School Graduates Taking ACT Assessment

Class size	Percent planning graduate study or professional degree			Percent planning voc. tech. or 2 years of college		
	Nation	Midwest	Iowa	Nation	Midwest	Iowa
less than 25	39	33	32	15	17	13
25-99	47	42	39	10	12	12
100-199	52	47	45	7	9	10
200-399	57	55	54	5	5	5
400-599	60	59	53	4	5	6
600-899	62	60	50	4	4	5
900 or more	57	57	50	5	7	7

Source: American College Testing Program.

## Opportunities

Educational opportunities depend in part on the quantity and quality of resources available to schools. Two widely used measures of resource inputs are expenditures per pupil and pupil-teacher ratio. Expenditures per pupil vary little between Iowa's rural (less than 400 enrollment) and urban districts. Rural school districts have relatively low pupil-teacher ratios and relatively low teacher salaries. The effect on costs of low pupil-teacher ratios is approximately offset by low teacher salaries, with the result that instructional expenditures as a share of total operating fund expenditures are only slightly above average in rural districts. However, reflecting the diseconomies of small size, administrative expenditures account for an above-average share of total expenditures in Iowa's rural districts.

Despite approximately equal per-pupil spending, rural Iowa districts offer a more limited curriculum than urban districts. In 1995, rural Iowa districts offered fewer curriculum units in the major subject areas. And the percentages of English/language arts, math, and science teachers who taught exclusively in their subject area were lower in rural than other school districts. As a result, smaller percentages of students in rural districts enrolled in foreign language, calculus, trigonometry, chemistry, and physics (table 8). Similarly, lower percentages of ACT-tested graduates from small schools had taken physics, chemistry, and calculus (table 9). These coursework limitations explain in part the somewhat lower ACT scores of students from small schools and contribute to their lower rate of enrollment in four-year colleges.

Another consequence of limited opportunities is that rural students are often less satisfied with their schools than urban students. A questionnaire included with the ACT Assessment asks students to express the extent to which they are satisfied or dissatisfied with various dimensions of their high school experience. In their responses to this questionnaire, 1995 graduates from small midwestern high schools (graduating class of less than 25) expressed the highest rates of dissatisfaction with their schools' course offerings, guidance services, libraries and laboratory facilities, provisions for special help, honors programs, and career education and planning (table 10). Iowa graduates from small high schools were similarly less satisfied with these aspects of their schools.<sup>13</sup> In contrast, expressed rates of dissatisfaction with classroom instruction, grading, and school rules did not vary systematically between

**Table 8** Percent of Iowa High School Students Enrolled in Advanced Courses, 1994–95

	School districts with		All districts
	< 250 students	250–399 students	
Foreign language	42.4	40.5	52.0
Calculus	4.1	9.5	12.0
Trigonometry	3.6	5.9	14.3
Chemistry	51.4	55.0	69.0
Physics	13.6	27.0	33.8

Source: Iowa Department of Education.

**Table 9** Percent of ACT-Tested 1995 Midwestern High School Graduates that Took Advanced Courses

Class size	Physics	Chemistry	Calculus
below 25	44	73	14
25–99	45	80	19
100–199	47	84	21
200–399	55	85	24
400–599	57	86	26
600–899	62	87	27
900 +	50	83	19

Source: American College Testing Program.

**Table 10** Percent of ACT-Tested 1995 Midwestern High School Graduates Dissatisfied with Schools' Offerings

Class size	Course offerings	Guidance services	Library	Lab facilities	Special help	Honors program	Career counseling
below 25	40	22	23	24	13	24	26
25–99	40	25	19	20	13	21	28
100–199	27	22	15	17	12	14	23
200–399	18	22	14	16	11	9	21
400–599	12	20	12	13	9	7	18
600–899	9	19	8	10	8	7	13
900 +	10	20	11	16	16	6	16

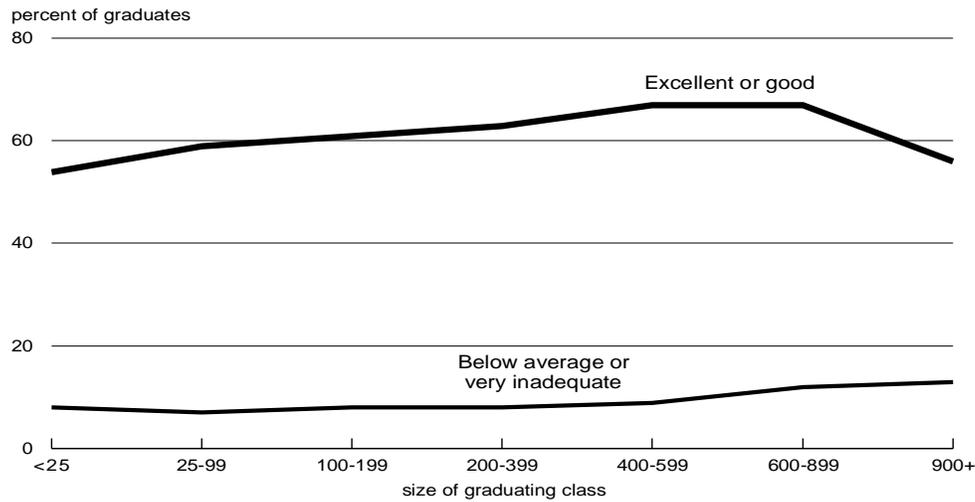
Source: American College Testing Program.

large and small schools, indicating that low satisfaction levels in small schools were associated mainly with limited academic opportunities and relatively poor guidance and counseling services.

Students' overall views of their high schools were summarized in a question that asked them to rate the adequacy of their education. Again, as shown in figure 6, the poorest ratings were given to the smallest and largest schools. But the importance of these differences in ratings can easily be overemphasized, since *for all school sizes* more than half of the students rated their education as good or excellent.

A number of factors have limited or reduced the deficiencies of Iowa's rural school districts. Course offerings have increased in all major subject areas in both large and small districts. The percentage of students enrolled in foreign language, higher level math, and higher level science courses has been increasing in all districts, large and small. Area Education Agencies have provided specialized staff for groups

**Figure 6** Students' Rating of Schools Adequacy



Source: American College Testing Program.

of districts that would be expensive (per student) for any single small district to hire. And rural students in Iowa are benefiting from a rapidly increasing (but still small) number of courses offered by telecommunications.<sup>14</sup>

More important, the deficiencies of small schools are affecting a decreasing fraction of Iowa students. Consolidation decreased the number of rural districts more than 12% from 1985–86 to 1994–95. Open enrollment has reduced the number of pupils in the remaining small districts. Loss of students due to open enrollment in 1994–95 was 8% for districts with less than 250 students and 2.7% for districts with enrollment of 250–399. Open-enrollment losses and gains were quantitatively insignificant for larger districts. As a result of these changes, only 4.5% of Iowa's students were enrolled in rural districts (less than 400 enrollment) in 1995.

### Adult and Continuing Education in Iowa

We do not have data for interstate comparisons of adult and continuing education programs. However, reviewing Iowa's extensive programs provides a good case study of what is feasible.

Iowa's job training programs provide assistance 1) for training of *new* employees of businesses that are new, expanding, or relocating to Iowa from another state and 2) for retraining of existing employees.<sup>15</sup> The level of training may range from basic adult education to highly technical. The training may be formal and in-class or on-the-job. And it may include recruiting and assessment of new employees.

Training services are delivered by Iowa's community colleges under contract with the assisted businesses. Training arrangements are subject to approval by the

Iowa Department of Economic Development. With 15 community college districts, few businesses and residents are more than 30 miles from a service delivery center. And services can be delivered on site (at place of employment).

Projects that train new employees are financed primarily with tax-increment financing. Community colleges sell taxable and tax-exempt bonds. Interest and principal on these bonds are paid by diversion of property tax payments on new facilities and new employees' state income tax payments.<sup>16</sup> A program for retraining existing employees makes forgivable loans up to \$50,000 and grants of less than \$5,000 to businesses of all sizes. Although Iowa's worker training programs are financed mainly by diversion of income and property taxes associated with new employment, state appropriations have provided some funding. Beginning July 1996, a new Workforce Development Fund replaces direct state appropriations.

To indicate the scale of these programs, from 1983 (beginning of programs) through fiscal year 1995, \$240 million in assistance was given for more than 1,500 projects involving 75 thousand new employees and retraining of 30 thousand existing employees. Since inception of the programs, over 90% of the funding has come from sale of bonds (repaid by diversion of income and property taxes) and less than 1% from grants (state appropriations).<sup>17</sup>

Projects have been spread widely through the state and many have been in small towns; 29 percent of the projects were in towns with population below 5,000 and 56% were in towns with population below 25,000. The assisted businesses are mainly in the manufacturing sector (about 75%); 10% are service businesses and 10% are finance and insurance.

Only about two-thirds of the funds have been used for training; the remaining outlays have been for underwriting, legal services, and administration. The average wage for new employees trained by fiscal year 1995 projects was \$9.31 per hour for large businesses and \$8.60 per hour for small businesses. For retrained employees, the average for fiscal year 1995 projects was \$10.87 per hour.

Since inception of the program, the default rate on bonds has been about 3% of the total amount issued. The payer of last resort when an issue defaults is the community college that issued the bonds. If default occurs, the college levies a property tax to repay the bond; to date such levies have been less than \$1 million.

Who benefits from public subsidy of worker training? Are existing programs cost-effective? There is no clear evidence on these questions. In general, gains accrue in some combination to workers (as higher wages), business owners (as higher profits), and consumers (as lower prices for products and services). There is also no clear evidence on what employers would have done in absence of the subsidies. We therefore do not know the extent to which the subsidies were necessary to expand employment and upgrade skills.

The community colleges have other programs for adult and continuing education. Supplementary vocational and technical education is still their main activity, accounting for over 60% of 737,000 persons served in fiscal year 1995. Enrollment in adult basic education and high school completion courses totalled 51,000 in 1995, and over 5,000 high school equivalency GED degrees were awarded.

## Conclusions

Achievement levels of elementary and secondary students, measured by average scores on widely used standardized tests, fell from the middle 1960s through the middle 1970s. But scores have since recovered and stabilized near their historical highs. Despite a widely held view to the contrary, there has been no long-term decline in educational outcomes as measured by performance on standardized tests of academic achievement. Furthermore, test scores have been maintained even though an increasing percentage of each cohort of young persons have been completing high school and taking the ACT and SAT tests used for college admission and counseling.

At the same time, achievement levels, opportunities, and student satisfaction are not uniform across school sizes. Intermediate size schools (graduating classes from 100 to 600) consistently show better on all of these dimensions than either the smallest or the largest schools. Students from small, largely rural schools have somewhat below-average achievement levels as measured by the ACT Assessment. They have more limited opportunities to take advanced courses. They are less satisfied with counseling, course offerings, and facilities. And they have somewhat less ambitious educational goals. Students from the large urban schools also have below-average test scores and express above-average dissatisfaction with their educational experience.

The “extras” that appear to be lacking in rural elementary and secondary education are more costly to provide, on a per-student basis, in rural than in urban districts. This fact points to the main questions that rural educational policy needs to address. How can costs be reduced? By consolidation of districts? By sharing of programs? To the extent that costs cannot be reduced, should the additional resources needed to achieve equality be allocated to rural areas? If so, what school financing arrangements would equalize opportunities and still maintain incentives for rural schools to control and reduce costs?

Even if small schools are brought up to par with the middle size schools, there is still the question of whether “doing as well now as in the past” is “good enough.” Must not education be better than in the past if today’s young people are to be adequately prepared for the rapidly changing and technologically complex world in which they will live? We have not addressed this question. But we have suggested that based on their performance on widely used tests of educational achievement, high school graduates today are as well educated as were their parents.

Iowa has an elaborate system of adult and continuing education that delivers services close to rural residents and businesses. The system is responsive to the needs and concerns of employers. Public funding of training and retraining is *open-ended* and *initiated by businesses*. Assistance is available for virtually any business wishing either to add to its employment in Iowa or to retrain its existing workers. That assistance includes recruitment and assessment of employees. All Iowans, rural and urban residents alike, today have opportunities for adult and continuing education that are superior to those available to urban residents three decades ago.

In short, the quality of rural education in the Midwest, especially in Iowa, appears to be high relative to what has been available in the past and, with exceptions noted above, on par with urban opportunities and outcomes.

## Notes

- <sup>1</sup> Trends in test scores for other grades were similar to those shown in table 1. The mean ITED score for Iowa's grade 10 students was slightly higher in 1995 than in 1965, while the mean score for grade 12 was slightly lower in 1995 than in 1965. Median ITBS scores for grades 4-6 were higher in 1996 than in 1965, while 1995 scores for grades 7-8 were lower than 1965 scores.
- <sup>2</sup> The other college admission exam is the Scholastic Aptitude Test (SAT).
- <sup>3</sup> Taking a longer view, national average scores reached a peak in 1969 that was about 0.5 higher than recent scores, and average scores dropped below recent levels in the mid 1970s.
- <sup>4</sup> Unless noted otherwise, statistics for Iowa are from the Iowa Department of Education, Basic Educational Data Survey.
- <sup>5</sup> Iowa statistics from Iowa Department of Education, Basic Educational Data Survey. U.S. statistics from U.S. Department of Commerce, Bureau of Census, *Statistical Abstract of the United States, 114th Edition*, p. 172.
- <sup>6</sup> College preparatory or core coursework is defined as four or more years of English plus three or more years each of mathematics, social studies, and natural science.
- <sup>7</sup> For Iowa, these and other statistics from the ACT Assessment are based on the full population of graduates taking the test. For the midwestern states and the nation, statistics are based on 10% samples of the population of graduates taking the ACT Assessment.
- <sup>8</sup> Although small in a practical sense, these differences in scores are statistically significant. The composite score reflects performance on the components of the ACT Assessment: English, Mathematics, Reading, and Scientific Reasoning.
- <sup>9</sup> The maximum ACT composite score is 36.
- <sup>10</sup> Test scores in Table 4 are for students from both private and public schools. It might be argued that private schools are concentrated in the small school categories and that students from small private schools have above-average scores. If this were true, the performance of small public schools would be lower than implied by Table 4. However, this hypothesis does not appear to be valid. For 1995 graduates, the average ACT composite scores for small public schools were virtually the same as for small public and private schools combined: 20.6 for midwestern public schools with graduating classes less than 25; 21.2 for schools with classes of 25-99; 21.6 for schools with classes of 100-199.
- <sup>11</sup> Analysis of the *national* population of 1993-94 graduates taking the ACT Assessment shows that scores are higher for graduates who have taken the core coursework even when income and ethnic background are held constant. Further, scores increase as family income increases when academic preparation and ethnic background are held constant. Income and academic preparation thus appear to separately affect ACT scores. See: American College Testing, "What We Know about ACT-Tested Students Who Attend College: An Examination of ACT Data," ACT, Iowa City, IA, May 1995.
- <sup>12</sup> The percentages of 1995 graduates who took the ACT Assessment were 67, 64, 59, 75, 68, and 64 for Illinois, Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin, respectively. Nationally, 37% of 1995 graduates took the test.
- <sup>13</sup> Students from intermediate size schools, graduating classes of 600 to 900, expressed the lowest rates of dissatisfaction and highest rates of satisfaction.
- <sup>14</sup> In 1993-94, 59 of 390 districts offered 141 classes with total enrollment of 927 students.
- <sup>15</sup> These programs are the Iowa Industrial New Jobs Training Program and the Iowa Jobs Training Program. The former is the older and larger program. The latter provides training for new workers in small businesses and for retraining of workers in businesses of all sizes.
- <sup>16</sup> Iowa has a separate program for training new employees of small businesses (less than 500 employees statewide), but the program is virtually the same as the program for larger businesses. To train employees of small businesses, it provides repayable loans up to \$50,000 and grants less than \$5,000.
- <sup>17</sup> These and other statistics on Iowa's worker training programs are from: Iowa Department of Economic Development. *Iowa New Jobs Training Program and Iowa Jobs Training Program, Annual Report*, 1994 and 1995 issues.

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