High School Education

Report Summary

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Program Evaluation Division
Office of the Legislative Auditor
State of Minnesota

Veterans Service Building, Saint Paul, Minnesota 55155 • 612/296-4708

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INTRODUCTION

High school education is at a critical juncture in Minnesota. The demands of society are growing, and Minnesota needs reassurance that its education system is strong and improving.

In mid-1987, the Legislative Audit Commission asked the Legislative Auditor to evaluate high school education, focusing particularly on educational opportunities and curriculum variations. This report summarizes the evaluation's findings and recommendations.

Overall, the report documents problems that need resolution by the state. It shows that Minnesota's educational advantage has been slowly eroding. State standards are low, student performance is down, some schools fail to provide the academic opportunities that students need, and state oversight of the system is lax.

While it does not criticize the new "choice" programs nor the other initiatives underway in Minnesota, the report argues that more needs to be done.

The report was researched and written by Marilyn Jackson-Beeck (project manager), Jo Vos, and Dan Jacobson, with assistance from Kathi Vanderwall and Victoria Miller.

This is a summary report. The full evaluation of Minnesota's high school education system can be obtained from the Office of the Legislative Auditor, 122 Veterans Service Building, St. Paul, Minnesota 55155. Phone 612/296-4708.

HIGH SCHOOL EDUCATION

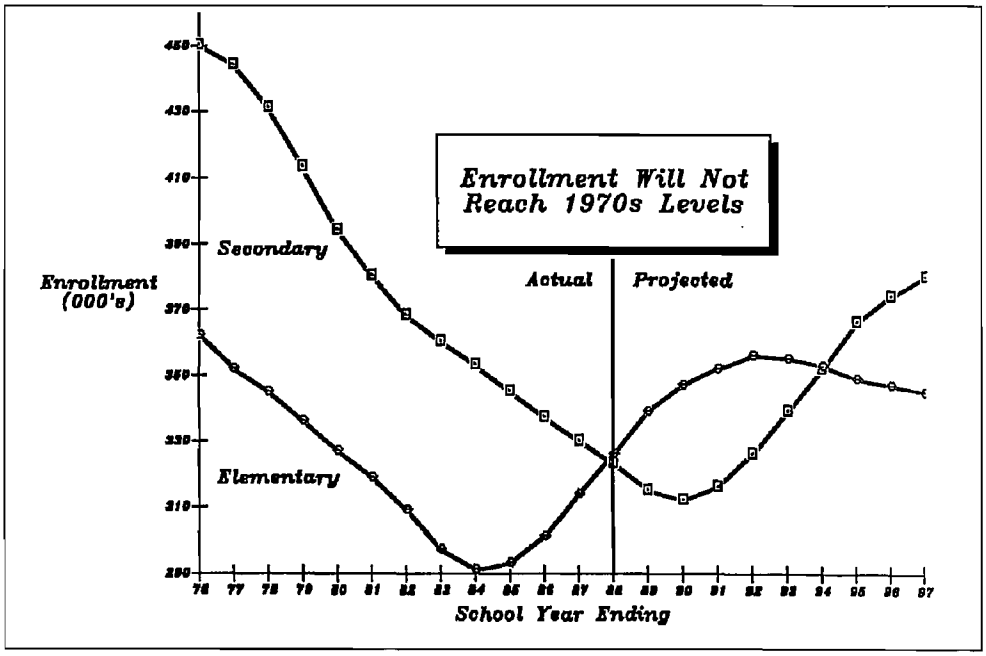
Report Summary

Minnesota's education system has many strengths and often earns national praise. Legislators and other state leaders have shown their commitment to public schools through generous funding and persistent reform efforts. Yet public education here, as in other states, still faces serious challenges on several fronts.

In recent years, education has been frequently addressed by national and state task forces, commissions, and study groups. Most have concluded that our public education system is inadequate, and some have said that the problems are threatening social stability and economic development.

Over the past decade in Minnesota, the population shifted, and enrollment dropped from earlier levels. This brought cutbacks to some districts during a time when students, post-secondary schools, and business leaders raised their expectations for public education.

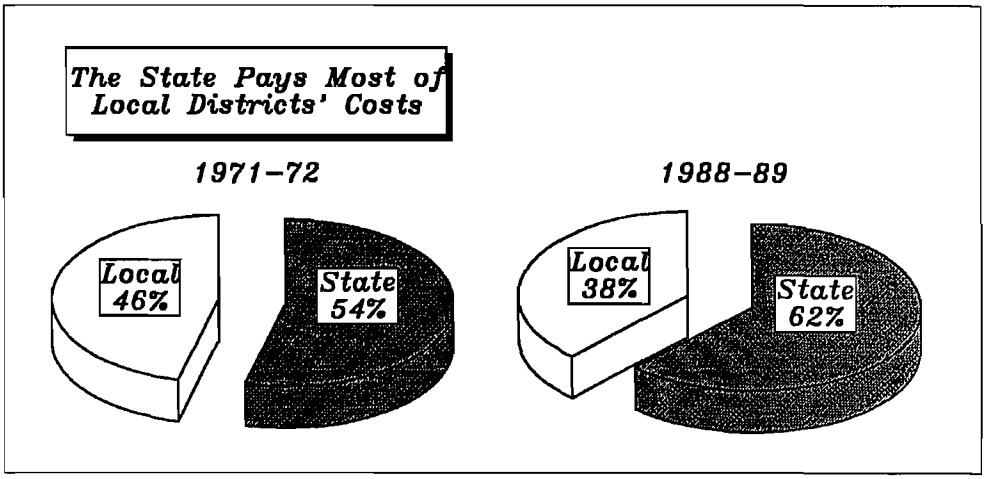
Enrollment declined while expectations rose.



Elementary and Secondary Public School Enrollment, 1976-1997
(Source: Minnesota Department of Education.)

The state has a strong tradition of local control over education and has encouraged districts to design their own programs. However, policy makers have become concerned about education standards and practices. The state contributes most of local districts' revenues. Its contribution is growing along with questions of equity, quality, and accountability.

Policy makers have become concerned.



State and Local Governments' Share of District Revenue, 1971-1989
(Source: Senate Counsel and Research.)

To assess the situation in Minnesota, the Legislative Audit Commission asked us to study high school education throughout the state and determine if changes were needed. The key questions we asked were:

- **How well are Minnesota high school students performing academically?**
- **What academic standards have been set for high school education in Minnesota? How do they compare with standards in other states? Are Minnesota's standards adequate to prepare students for higher education?**
- **How much do high school curricula vary in Minnesota? Do the variations have practical significance for students?**

METHODS AND EVALUATION CRITERIA

Our evaluation is based mainly on data from Minnesota's school districts. We reviewed curriculum information which administrators routinely send to the Department of Education, and we examined student test results where available. In addition, we sent a questionnaire to all school superintendents where grades 9 through 12 are taught and made direct contact (in person or by telephone) with administrators in about 100 districts.

Further, we interviewed national researchers and school administrators in other states. Working with the Minnesota Department of Education, we

reviewed records of courses which are offered through inter-district travel agreements. Finally, we obtained lists of courses available through interactive television networks.

Our report documents (1) the number, type, and level of courses available to high school students, (2) schedules of instruction, and (3) program standards which school districts meet, exceed, or sometimes fail. In addition, we evaluated the relationship between curricula and education outcomes such as student test scores and college performance.

There may be no activity in the state more complex and difficult to evaluate than education, and the task is not made easier by focusing only on high school education. There are 436 school districts in Minnesota, and 386 of them are operating four-year high school programs this year. Additionally, we discovered that there are no well established or generally accepted criteria in Minnesota by which high school education can be judged. Nevertheless, to write our "report card," we developed criteria and methods which we believe are useful and appropriate in describing and evaluating policy-relevant aspects of high school education in Minnesota. They do not cover all relevant aspects of the learning process, but we believe they reflect many of the most critical elements and those which can be assessed objectively, systematically, and with the least amount of ambiguity.

The evaluation criteria which we adopted reflect five aspects of high quality public education which have gained general acceptance in the United States. These include (1) individualized student-teacher interaction, (2) adequate, focused instructional time at school, (3) academic classes in the four core subjects of English, social studies, mathematics, and science, (4) preparation for further education, and (5) equal educational opportunities for all public school students.

The Constitution says that the Legislature is ultimately responsible.

We focused especially on the state's role in education. According to the Minnesota Constitution, the Legislature is ultimately responsible to see that adequate instruction is systematically available statewide. Thus, among other questions, we asked how well the Legislature's constitutional obligation is being met: "...to establish a general and uniform system of public schools" and "...to secure a thorough and efficient system of public schools throughout the state."[1]

BACKGROUND

Education has always been a high priority in Minnesota, and the state has been an acknowledged leader in education reform. In 1971, the Legislature devised a plan to reduce financial disparities among local school districts recognized nationally as the "Minnesota Miracle." More recently, the Legislature enacted several innovative measures which give students and parents unprecedented opportunities to choose among schools. Again, favorable national attention has come to Minnesota for its "open enrollment," "post-secondary option," and "high school graduation incentive" programs.

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1 Minn. Constitution, Article XIII, Section 1.

Despite these creative efforts, little is known about the substance or content of education in Minnesota. Although much information is available about school district finances and specific programs, policy makers wanted to know more about the courses and the learning which occurs in public high schools (grades 9 through 12) throughout the state.

PERFORMANCE MEASURES

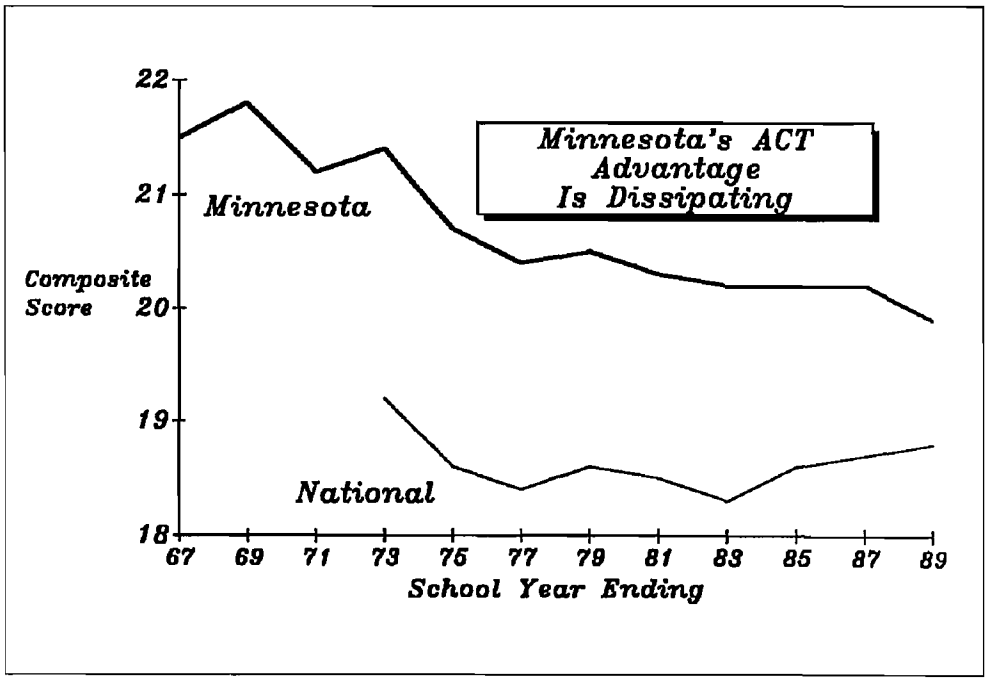
Among the fifty states, Minnesota ranks high for its college admission test scores, graduation rate, and low pupil-teacher ratio, among other positive accomplishments. However, we found strong evidence that Minnesota's reputation is overstated and out of date.

Minnesota's reputation is overstated and out of date.

Favorable socioeconomic conditions inflate Minnesota's performance on standard education indicators--most notably college admission test scores. In any event, these indicators are less favorable than they were in the past because:

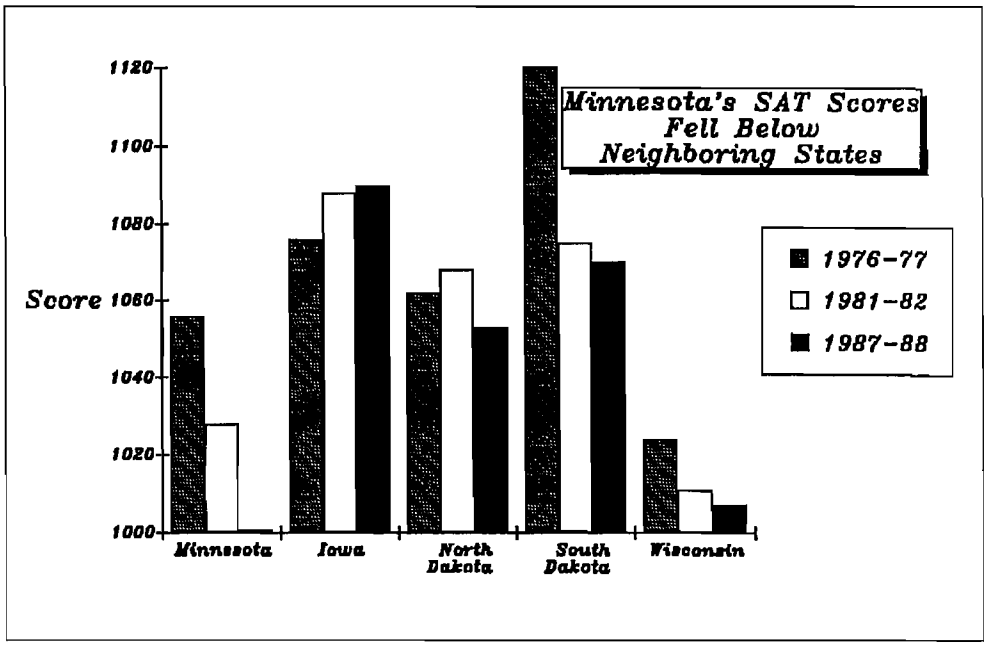
- **Results on all three college admission tests are continuing to decline while scores nationally are improving.**

This year, an estimated 44 percent of Minnesota's seniors took the American College Test, and they earned the lowest score in state history. For the first time, Minnesota's juniors (51 percent of whom were tested) scored below the national average on the verbal subtest of the Preliminary Scholastic Aptitude Test. Compared with the four surrounding states, Minnesota now has the lowest average scores on the Scholastic Aptitude Test--below Iowa, Wisconsin, North and South Dakota.

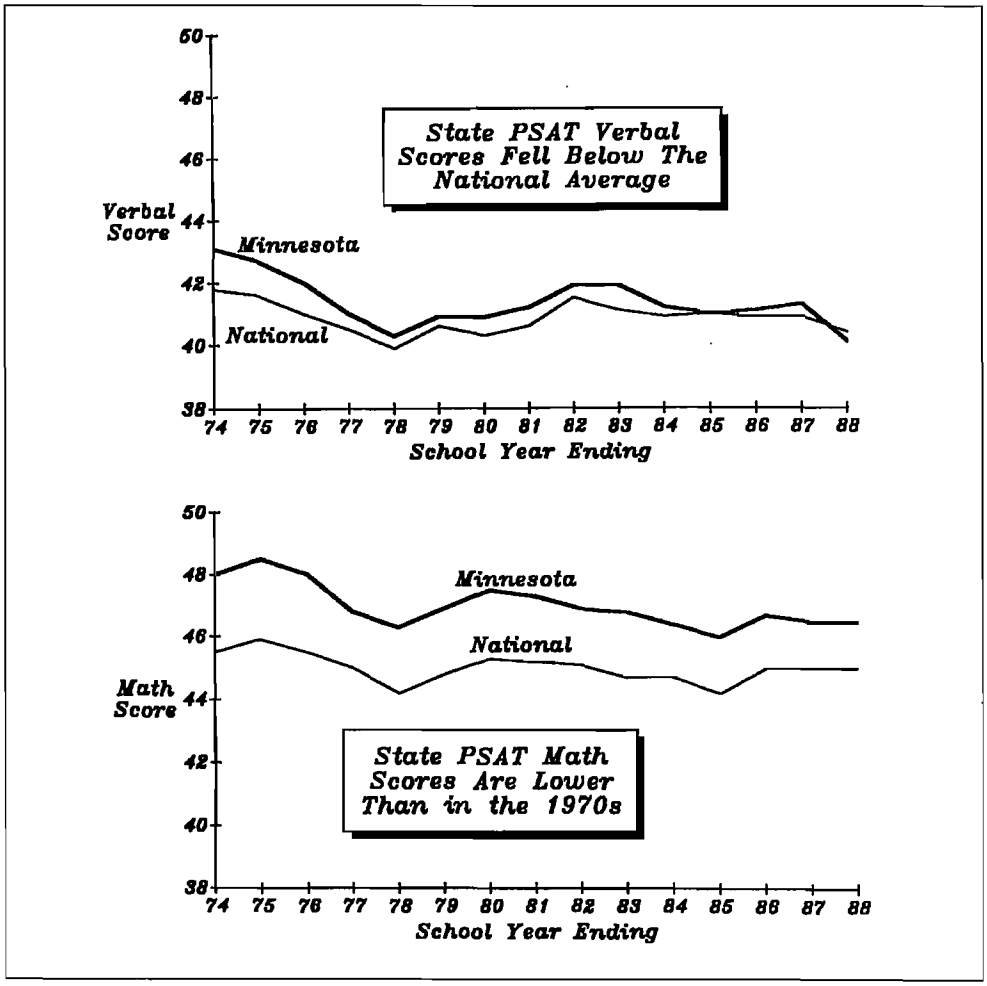


Composite American College Test Scores for Minnesota and the Nation, 1967-1988 (Source: American College Testing Program.)

College admission test scores have fallen.



Composite Scholastic Aptitude Test Scores for Minnesota and Surrounding States, 1977-1988 (Source: College Board.)



Preliminary Scholastic Aptitude Subtest Scores for Minnesota and the Nation, 1974-1988 (Source: College Board.)

We found that Minnesota seems to be maintaining its advantage over the nation in basic achievement but falters in tests of college preparation. For example:

- **Minnesota public school students' average score and passing rate on Advanced Placement tests has fallen to approximately the national average.**

Part of the reason for this performance decline is that the percentage of Advanced Placement (AP) test takers nearly doubled between 1985 and 1988. Yet Minnesota's participation rate has climbed only to be about half the national average.

	Minnesota				U.S.			
	1985	1986	1987	1988	1985	1986	1987	1988
Candidates as a Percent of Public School Graduates	2.8	3.6	4.5	5.3	8.5	9.9	9.7	10.6
Average Test Score on Five-Point Scale	3.17	3.07	3.03	3.07	3.02	3.05	3.04	3.07
Percent Who Passed (Scores of 3 to 5)	73	70	66	68	66	67	66	67
Number of Candidates	1,522	1,876	2,391	2,852	207,785	238,507	278,037	292,164

Source: College Board.

Public School Students' Advanced Placement Test Results, Minnesota and the Nation, 1985-1988

Few public schools are accredited.

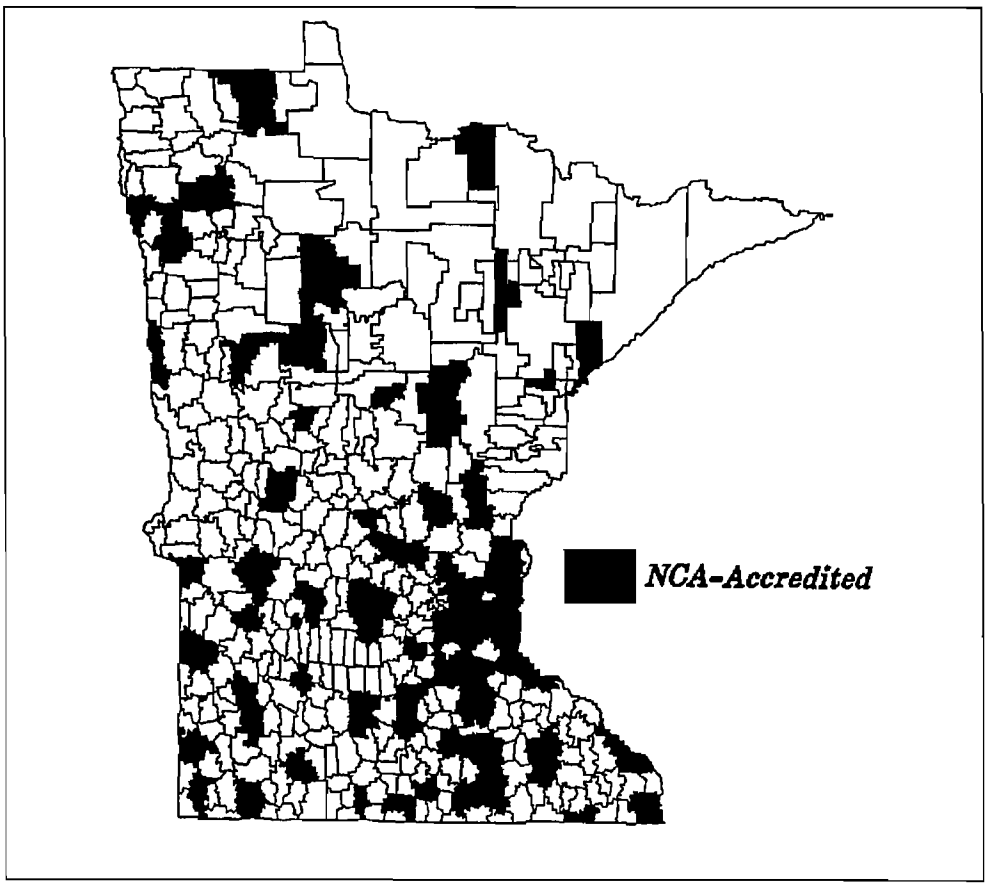
Statewide, few public high schools (27 percent) are accredited through Minnesota's only official accrediting agency, the North Central Association of Colleges and Schools. Moreover:

- **Minnesota's percentage of graduates from accredited public and private high schools dropped five points between 1980 and 1987.**

More than 80 percent of school districts in the Twin Cities metropolitan area have at least one accredited high school, but in other regions, the percentage ranges from a low of 8 to a high of 24.

STANDARDS FOR HIGH SCHOOL

We reviewed Minnesota's existing standards and compared them with standards in other states. Results show:



School Districts with One or More Accredited High Schools, 1987-88 School Year (Source: North Central Association of Colleges and Schools.)

- **Minnesota has weaker standards--especially student graduation requirements--than many other states.**

Only one other state allows high school students to complete just one year each of mathematics and science during grades 9 through 12. Forty-three states (and most of Minnesota's local school districts) require students to take two years of each subject. However, we found:

- **Twelve percent of Minnesota seniors from the Class of 1986 completed less than two years of mathematics, and 17 percent completed less than two years of science.**

Districts decide how their courses meet state requirements.

Even then, because the state permits school districts to decide which courses constitute mathematics and science, we found that students may cover vastly different material. For example, districts treat computer programming variously as mathematics or vocational instruction. Science can include vocational agriculture (in one district: "hands-on laboratory experience in the field," working with various species of livestock). Similarly, foreign language may count as English, and driver's education as social studies. Also under the category of social studies, we found military training which includes hygiene, flag drills, and weapons safety, among other topics.

In contrast, many other states adopted aggressive, direct reforms after national studies disclosed serious educational shortcomings. In Minnesota, we found:

- **State standards for high school education are not as high as elsewhere, and in some respects they have declined over the past few years.**

Minnesota's 20-credit graduation requirement is near the national average, but the number of instructional days annually is less than most states. In all, only eight states (including Minnesota) require less than 175 instructional days per year.

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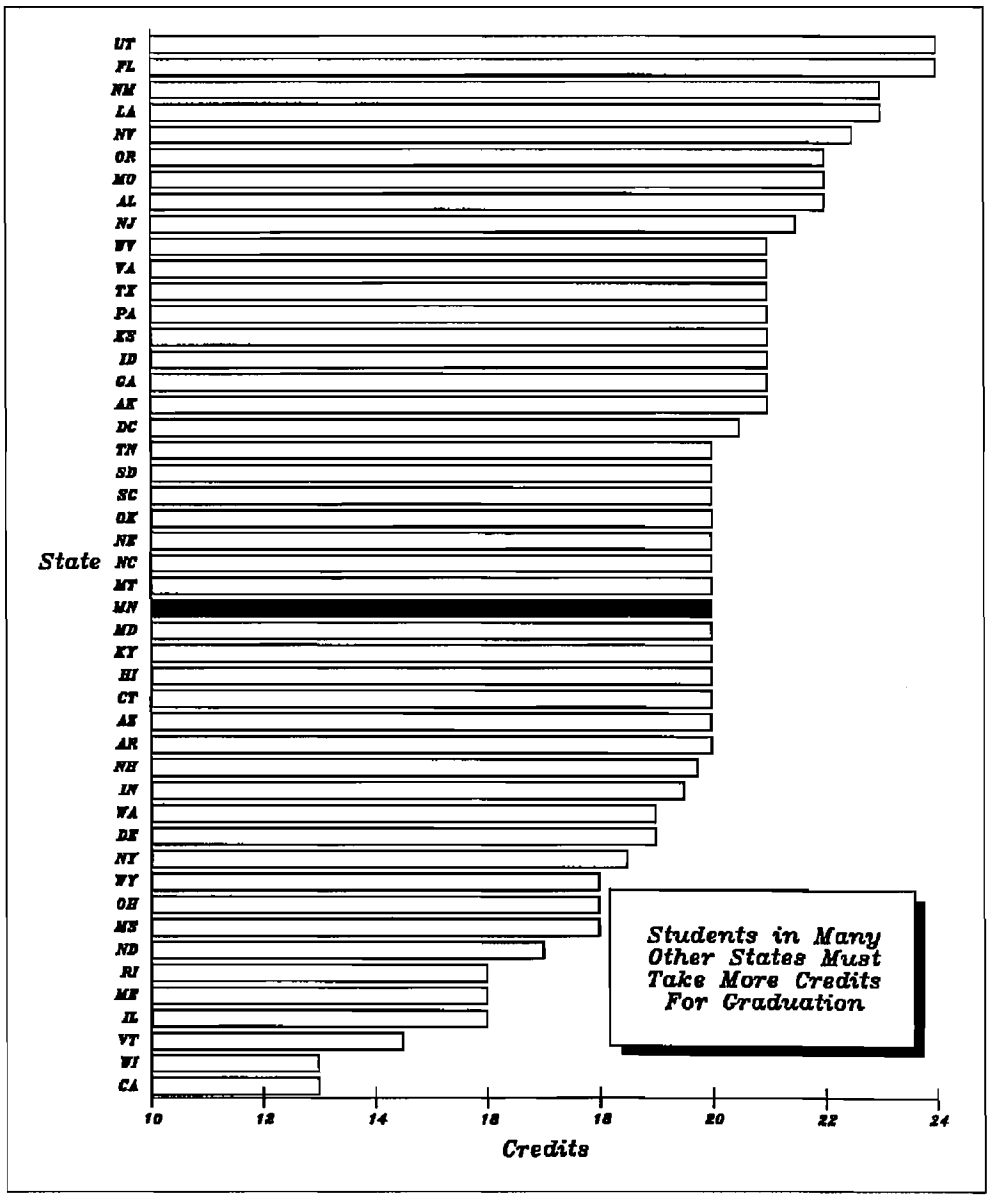
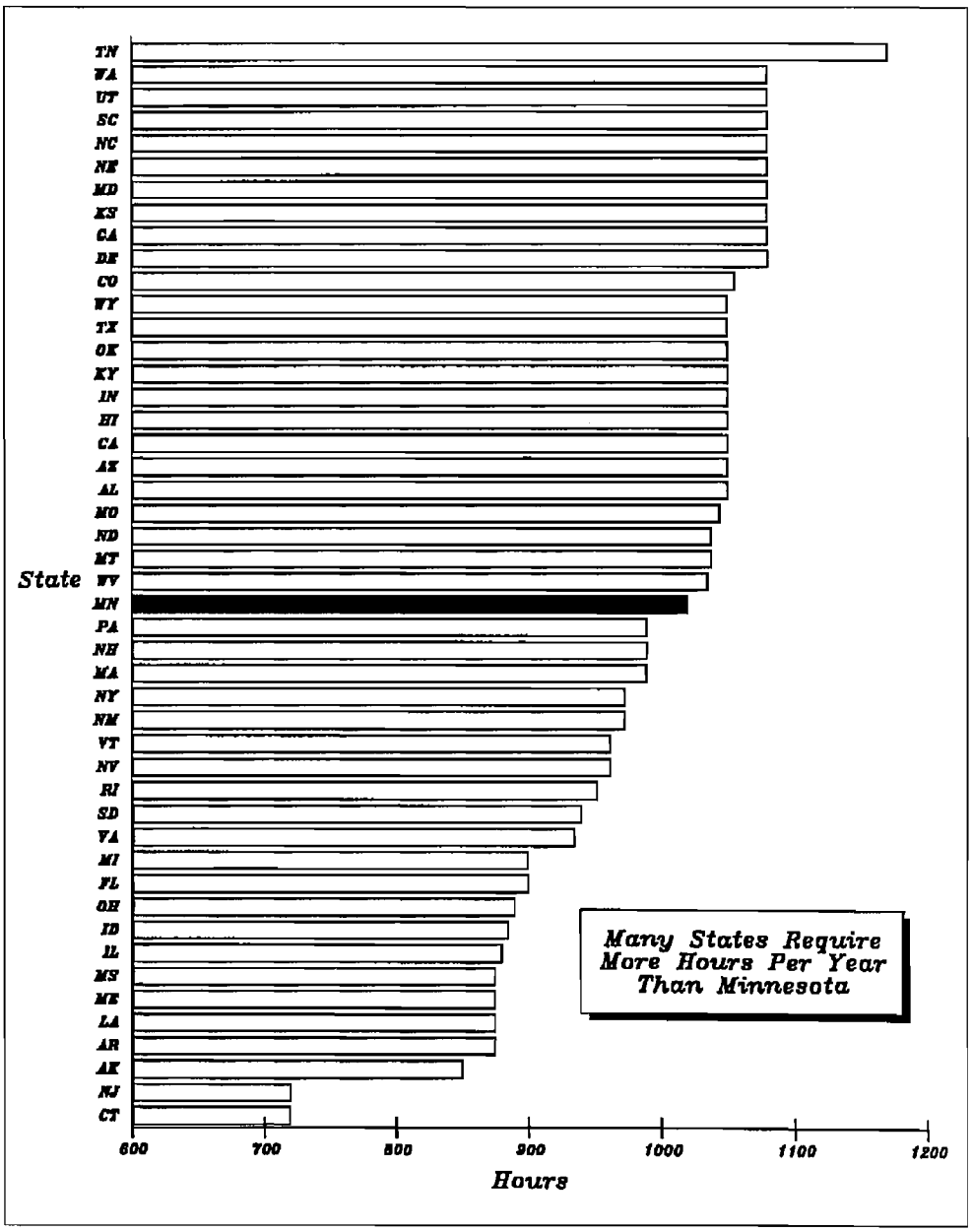


Required High School Graduation Credits by State (Source: Education Commission of the States, 1987.)



Required Hours Per School Year by State

In 1983, the National Commission on Excellence in Education urgently recommended that all states lengthen the school year and school day, but we found:

- **Minnesota school districts now operate for three fewer instructional days than during the 1968-69 school year.**

While the number of instructional days has declined for students, the average number of non-instructional days for teachers increased from three to eight days over the past 20 years.

	School Year		
	1968-69	1986-87	1987-88
Average Number of Student Instructional Days	176	174	173
Average Number of Non-Instructional Teacher Days	3	7	8

Source: Minnesota School Board Association, *Licensed Salaries and Related Information, 1968-69 and 1985-86 and 1986-87*, and Superintendent Survey.

Operational Changes in the Length of the School Year, 1968-1988

Students' class day can be short.

By comparison with other states, Minnesota does require a relatively long six-hour school day. However, we found:

- **Ninety percent of high school students are allowed to spend as little as five hours in class, and only 13 percent attend districts which have established formal homework policies.**

We also learned that many other states require students to demonstrate a certain level of academic achievement as a condition for graduation. Minnesota declines to require a minimum level of student performance or to assure through a test that students have achieved that minimum level. Yet when we asked local superintendents what policies they maintain on academic performance, results showed:

- **At most, one-third of Minnesota's high school districts have policies which establish minimum standards for graduates' reading and mathematics skills.**

Statewide, we found that 67 percent of the high school districts have no general policy on graduates' minimum reading abilities. Seventeen percent of the districts have adopted policies to ensure that graduates develop reading skills at least characteristic of junior-high or elementary school students in grades 5 through 8. Six percent have policies which set the general level of expectation within high school grades 9 through 12, and 10 percent maintain other policies which do not translate into grade-level equivalents.

Graduates may have 5th to 8th grade reading and math skills.

Similarly, 68 percent of the superintendents said they operate without any district-wide policy on minimum expectations for mathematics skills. Twelve percent indicated that their district-wide general standard is to expect ciphering abilities at least at the 6th to 8th grade level. In seven percent of the districts, we found policies which set minimum mathematics expectations at the high school level, and in 13 percent we found other policies which do not specify grade-level equivalents.

In addition, we asked superintendents to describe any other district-wide, established policies they have on the academic level at which they expect their graduates to perform. Most (61 percent) indicated they have no additional policies on graduates' academic abilities.

Because there is no statewide, universal test of Minnesota students' academic knowledge, we could not evaluate education outcomes in an ideal manner. However, we analyzed test scores and survey data from reasonably representative sub-samples of school districts, and found evidence that:

- **Minnesota high school students in districts whose programs fall short of curriculum standards are more likely to say they need academic help.**

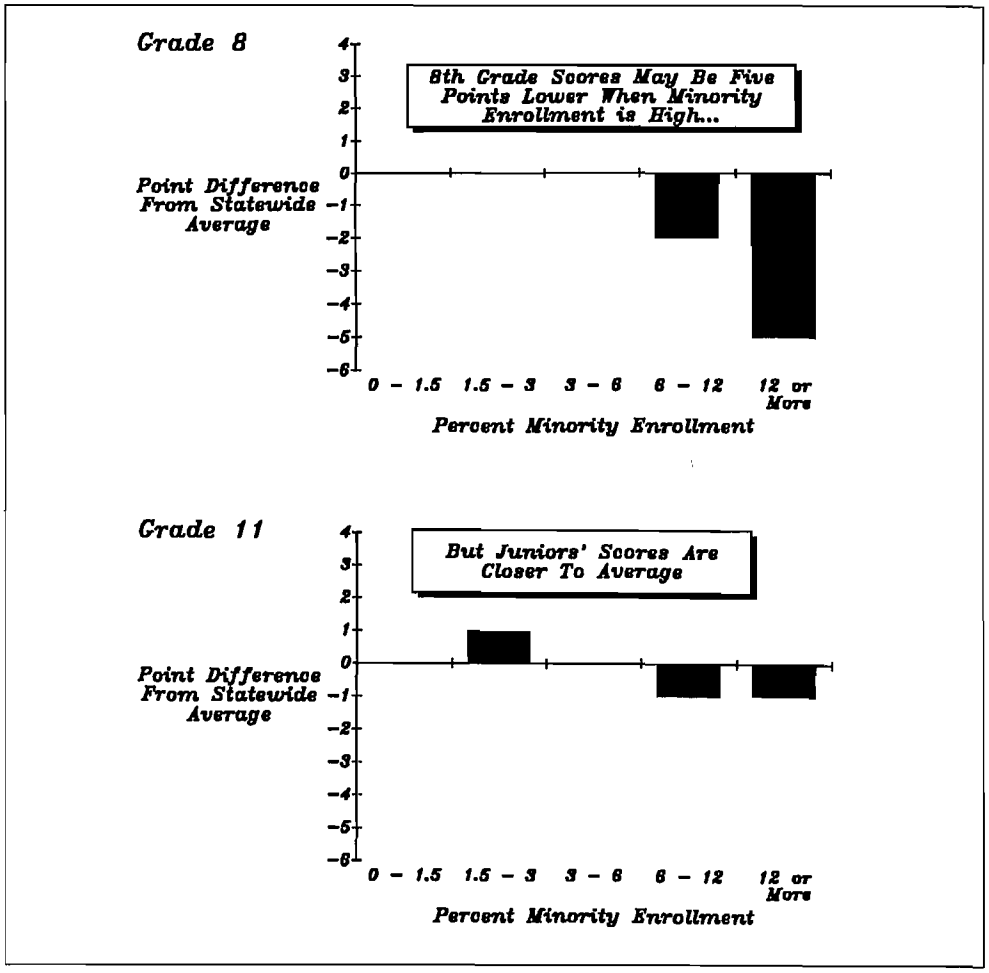
Very few districts are in this category, but the difference in student sentiment is large. For example, 43 percent of juniors in districts with incomplete mathematics curricula said they would like help with that subject in the future. By comparison, 14 percent of juniors in other districts gave that response.

Students in districts with weak programs say they need academic help.

We also found:

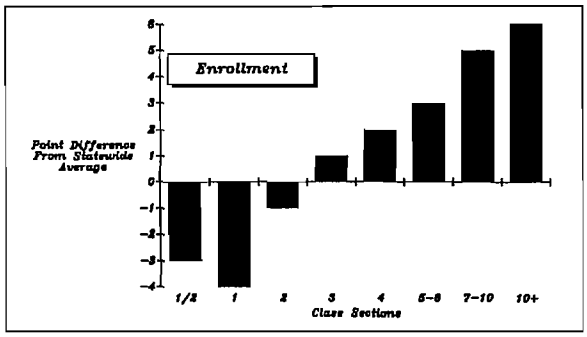
- **The greater the proportion of enrollees from ethnic minority and nonwhite racial groups, the lower were districts' scores in eighth grade social studies, mathematics, and science.**

The percentage of correct answers in these subjects declined systematically as minority enrollment increased. However, we found no relationship between minority enrollment and reading scores.

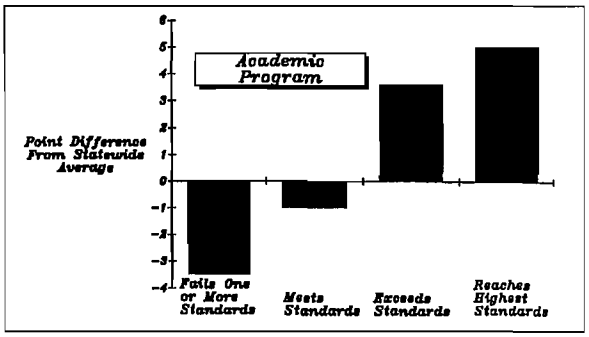


Social Studies, Mathematics, and Science Assessment Test Variations by District Percentage of Minority Enrollment, Grades 8 and 11

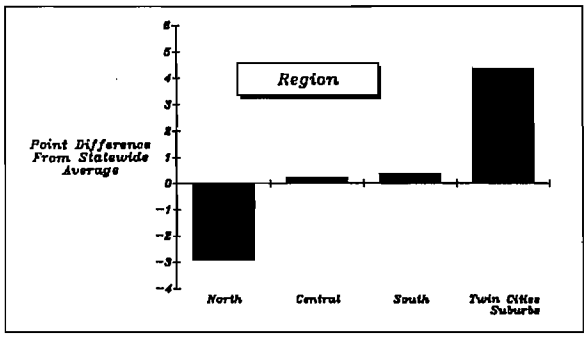
A different pattern of results emerged from our analysis of the Preliminary Scholastic Aptitude Test (Minnesota's leading college admission test). Several interrelated factors were important, but academic curricula and enrollment size made the greatest difference in students' scores.



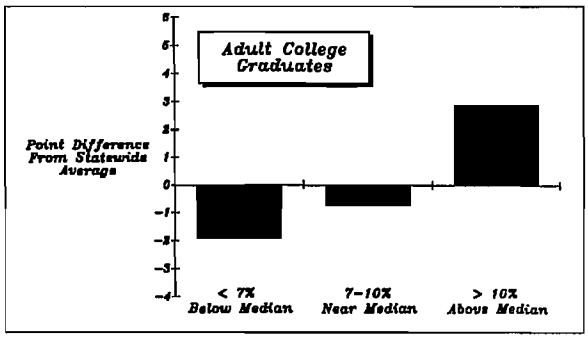
Composite PSAT Score Variation by Class Sections



Composite PSAT Score Variation by Level of High School Curriculum Development



Composite PSAT Score Variation by Geographic Region



Composite PSAT Score Variation by District Percentage of Adult College Graduates

INSTRUCTIONAL VARIATIONS

Minnesota districts vary greatly in the amount of instructional time they require and provide to high school students. Thirty-eight percent of high school students are permitted no more than 5.5 hours of daily instruction, but nine percent of students can enroll in classes for more than 6.5 hours. Most districts provide seven instructional periods daily, but some have four and others nine. A few districts are open only four days weekly (but have longer school days).

In some cases, the additional time is needed because students are bused during the day to other districts so that they can take courses which would otherwise be unavailable. However, instructional time may be lost because districts use different class schedules. Class periods typically range from 46 to 59 minutes. Vacation schedules also are different, with the result that inter-district cooperation can be complicated. For example, in one district which

	High School Districts	High School Students
MINIMUM CLASS TIME STUDENTS MUST TAKE DAILY		
Less than 4 Hours	3%	8%
4:00-4:30	29	29
4:31-5:00	44	52
More than 5 Hours	24	10
District Average:	4:47	
District Median:	5:00	
MAXIMUM CLASS TIME STUDENTS ARE ALLOWED DAILY		
5:00-5:30	13	37
5:31-6:00	57	41
6:00-6:30	26	13
More than 6:30	4	9
District Average:	5:55	
District Median:	5:50	

Note: Some percentages do not equal 100 due to rounding. Figures based on districts operating on five-day weekly schedules.

Source: Superintendent Survey.

Daily Minimum and Maximum Class Time, 1987-88

opens its classes to students from another district for part of each day, lessons continue when remote sites do not have school.

Although the Department of Education defines a credit as 120 hours of instruction, our evaluation showed that districts have other expectations. The statewide average is 147 hours, but a few districts require even more than 160 hours of instruction per credit. In addition, most (but not all) districts require more than 20 credits to graduate. As a result:

- **Between grades 9 and 12, some Minnesota students must take the equivalent of an additional year of classes in order to graduate.**

Some districts require graduates to spend hundreds more hours in class than other districts.

Most often, the differences amount to nearly one-third of a year. We found that about one-fourth of the districts require high school students to take up to 3,020 hours of instruction to graduate, while another fourth require graduates to finish at least 3,351 hours.

We learned that no one at the Minnesota Department of Education has a full-time responsibility to monitor regular education programs in local districts. Overall:

- **State oversight and monitoring of districts' compliance with curriculum standards is inadequate.**

The department has a curriculum monitoring project, but it stopped monitoring districts that met minimum standards in 1986-87. The department has an

No one at the Department of Education has a full-time responsibility to monitor regular education in local districts.

	High School Districts	High School Students
CREDITS TO GRADUATE		
20 or less (State Requirement)	20%	29%
20.0-21.9	26	28
22.0-22.9	30	29
23 or more	24	14
District Average:	21.8	
District Median:	22.0	
HOURS PER CREDIT		
120 or less (State Requirement)	1%	1%
121-140	15	10
141-145	30	25
146-150	27	18
151-160	23	37
More than 161	4	10
District Average:	147	
District Median:	146	
TOTAL HOURS FOR GRADUATION		
2,400 or less (State Requirement)	1%	1%
2,401-3,020	24	19
3,021-3,190	26	31
3,191-3,350	24	26
More than 3,351	25	24
District Average:	3,190	
District Median	3,190	

Note: Some percentages do not equal 100 due to rounding.

Source: Superintendent Survey.

Instructional Time Districts Require in Grades 9 through 12 for High School Graduation

Office of Monitoring and Compliance, but most of its activities concern special education. One person from another unit spends an average of ten hours monitoring regular education weekly; others are called in on occasion.

Part of the reason for the lack of monitoring is that state curriculum standards are rather easy to meet. Under the existing regulations, districts can (and do) count correspondence and interactive television courses as their own. If a district offers two courses every other year, it can count both toward state requirements. Some districts meet state requirements by placing beginners and second-year students in the same class (counting this as two courses). When students are bused elsewhere for several periods daily, home districts are free to count the classes as though the students were on site.

Even so, we found:

- **A few districts do not comply with the State Board of Education's curriculum requirements which were to be effective during the 1985-86 school year.**

During the 1986-87 school year, 14 districts did not provide sufficient English or foreign language courses to meet the State Board of Education's requirements. By this school year, the districts reached the minimum English requirement, but three still fail the state's foreign language requirement (two years of a single foreign language). Further, we found that 36 districts complied with the two-year foreign language requirement in 1986-87 only by busing their students elsewhere during part of each school day.

Districts count correspondence and others' courses as their own.

Alcohol, Tobacco and Drugs
Wildlife Management
United States History I and II
Individual and Team Sports
World History I and II
Spanish I through IV
Developmental English Psychology
Personal Management for Independent Living
Sophomore English
Physical Science I and II
German I through IV
Sociology
French I through III
Senior Language
The Novel
Junior Language
Photography

Popular Correspondence Courses (Source: North Dakota State University.)

Statewide, 20 districts have curricula which fall short of one or more of the State Board of Education's curriculum requirements or the Institute of Technology admission standards for science and mathematics. But this involves only about 4,000 students or 2 percent of Minnesota public high school enrollees. Overall, we found that 27 percent of the state's high school students attend districts where curriculum do meet minimum standards, and 71 percent go to high schools which reach or exceed high standards for academic curricula.

	High School Districts		High School Students	
	Number	Percent	Number	Percent
Failed requirement	8	2.0%	2,009	0.9%
Met Requirement with:				
On-site staff	345	84.1	220,294	96.6
Interactive Television	11	2.7	1,510	0.7
Travel to other districts	36	8.8	3,504	1.5
Summer language program	4	1.0	359	0.2
Correspondence course	4	1.0	294	0.1
First and second year combined class	2	0.5	163	0.1
Total High School Districts 1986-87	410		228,133	

District Compliance with the State Foreign Language Requirement, 1986-87

Most students attend districts with rich curricula, but 23 percent lack courses recommended by colleges.

	High School Districts		High School Students	
	Number	Percent	Number	Percent
Did not have four-year program	7	1.7%	601	0.3%
Meet standard with:				
Four year program taught yearly on site	340	82.9	221,579	97.1
Alternate-year scheduling	36	8.8	3,324	1.5
Interactive Television	4	1.0	582	0.3
Travel to another district	18	4.4	1,590	0.7
Combined class	3	0.7	249	0.1
Other	2	0.5	209	0.1
Total High School Districts 1986-87	410	100.0%	228,133	100.0%

District Mathematics Programs Compared with Institute of Technology Entrance Standard, 1986-87 and 1987-88

However, we also found:

- **Nearly one-fourth of Minnesota students would suffer a competitive disadvantage if they applied to selective colleges because their districts provide them with too few curricular opportunities.**

During the 1987-88 school year, 19 percent of high school students attended districts without the Advanced Placement or honors courses which are recommended by Macalester and Carleton Colleges. Further, 15 percent of high school students attended districts that did not provide three years of a foreign language as expected by Macalester College and recommended for future admission to the College of Liberal Arts on the University of Minnesota-Twin Cities campus.

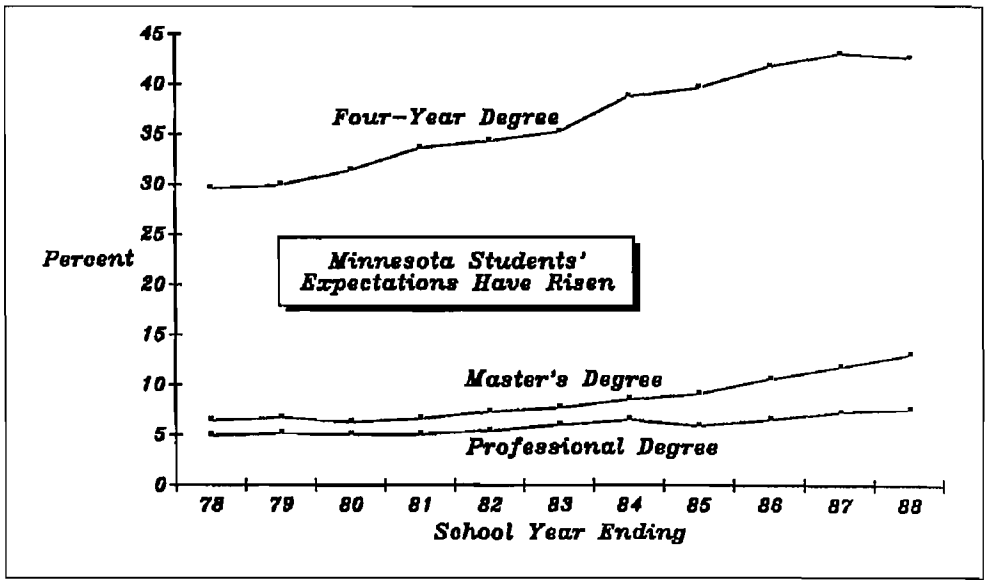
	Districts Not Meeting Standard		Students in Districts Not Meeting Standard	
Standard	Number	Percent	Number	Percent
Four years English	0	0%	0	0%
Three years social studies	0	0	0	0
4-Year mathematics sequence	7	1.7	484	0.2
Biology, chemistry, physics	3	0.8	451	0.2
Three years foreign language	191	48.5	34,675	15.3
Honors or Advanced Placement	204	51.8	42,701	18.8
Total High School Districts 1987-88	(394)		(226,316)	

Provision of Courses to Meet College Entrance Standards, 1986-87 or 1987-88

On the other hand, we found that over the past ten years, high school students' educational aspirations have risen so that:

- **The majority of Minnesota students now enroll in post-secondary schools after graduation, and the majority plan to graduate from a four-year college.**

During the 1987-88 school year, 64 percent of Minnesota public school juniors said they plan to earn at least a four-year college degree (including 13 percent who expect a master's degree and 8 percent who wish for diplomas from post-graduate professional schools). As recently as 1978, a combined total of only 41 percent of Minnesota juniors planned on this level of post-secondary education.



Public High School Juniors' Expected Level of College Education, 1978-1988
(Source: Minnesota Higher Education Coordinating Board.)

Our study found that at least some students in every school district clearly intend to go to college. This contributed to our conclusion that:

- **Many districts provide too narrow a range of academic courses.**

Some students have unequal access to education.

While 35 percent of students attended districts that provided more than 60 academic courses on a typical day during the 1987-88 school year, we found that another 22 percent were limited to fewer than 30 regular classes in English, social studies, mathematics, and science. In 1986-87, the only language available on site in 57 districts was English, but students in other districts could choose classes in as many as seven foreign languages.

Thus:

- **We question whether all students have equal access to high school education in Minnesota.**

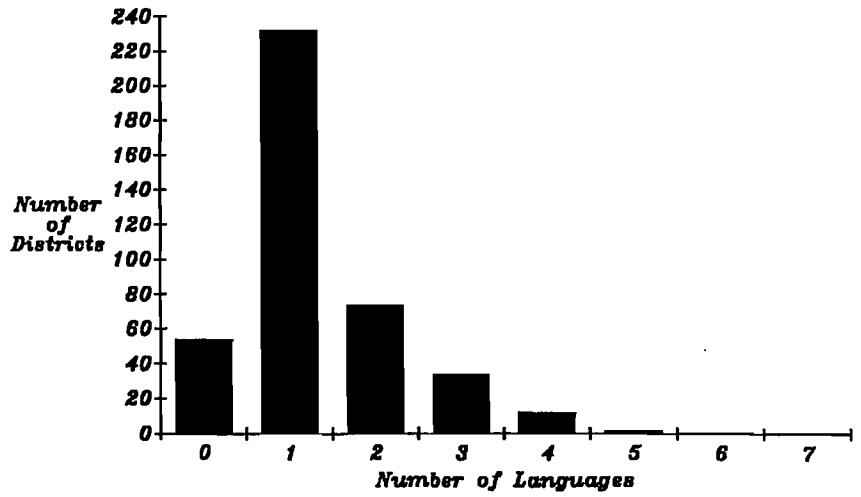
Number of Core Academic Courses[a]	High School Districts	High School Students
9-19	26%	5%
20-29	41	17
30-39	15	13
40-59	13	30
60-85	5	35
Total High School Districts, 1987-88	394	226,316

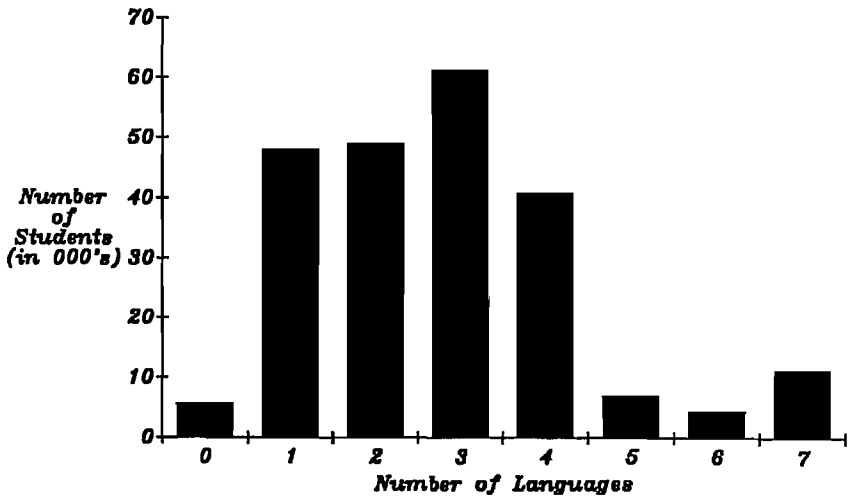
Source: Superintendent Survey.

[a]Includes English, social studies, mathematics, and science courses provided daily.

Variation in Number of Core Academic Courses Taught on Site, 1987-88

Some districts provide few academic courses.

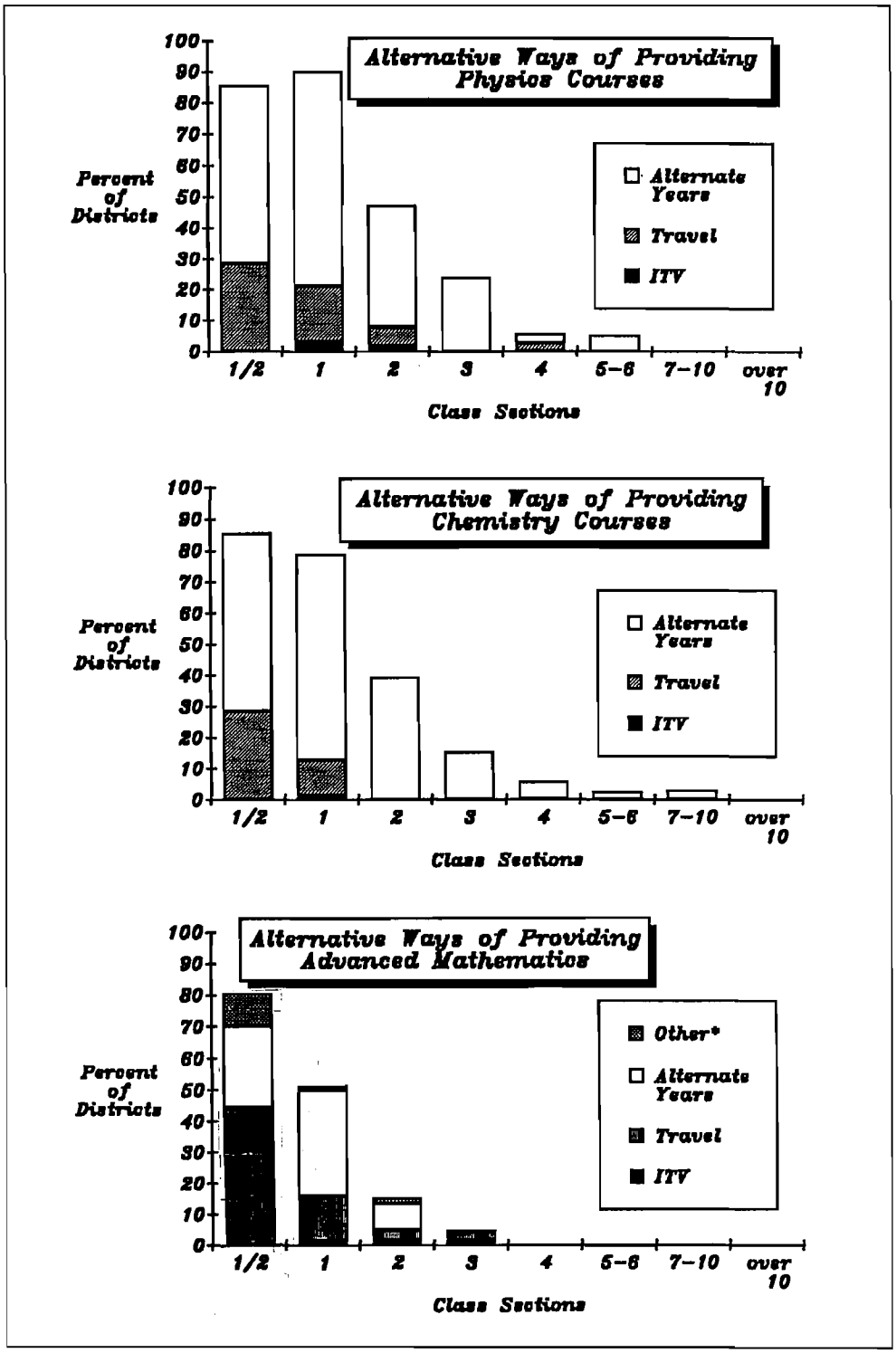




Variation in Number of Foreign Languages Taught on Site, 1986-87

Although only a small fraction of Minnesota students in grades 9 through 12 may be affected by outright curriculum failure, we believe the rarity of deficient programming begs important questions of fairness and quality. In addition, equity questions are posed by (1) districts' uneven reliance on television technology, mid-day busing, alternate-year scheduling, and high school correspondence programs and (2) limited access to courses which go beyond the minimum.

Small districts rely heavily on off-site instruction and alternate-year scheduling.



Variation in Instructional Method for Physics, Chemistry, and Mathematics by Class Sections (*Combined 3rd and 4th year in same class or combination of alternate years, travel, or ITV.)

REASONS FOR CURRICULUM VARIATIONS

In our evaluation, we analyzed the relationship between high school curricula and a number of factors which might yield differences. Results show that:

- **Some districts--especially those with few enrollees--provide far fewer opportunities than others.**

Among several district characteristics which might explain curriculum variations, enrollment size was the single most important factor.[2] That is, the more students, the more academic courses. In addition, two important but lesser factors are (1) the percentage of adult residents who graduated from college and (2) revenues from referendum levies.

In our survey, superintendents ranked state board requirements as the single most important explanation for their number and type of high school courses. Forty-four percent called state curriculum requirements "critically important," compared with financial resources (36 percent), local board requirements (31 percent), enrollment (29 percent), and other factors.

Superintendents also rated their high school curriculum in major subject areas. Results are consistent with our independent analysis:

- **Superintendents in districts with fewer than 100 high school students identify fewer curriculum strengths than their colleagues in larger districts.**

On the average, the superintendents of small districts noted 3.6 curriculum strengths out of 8 subjects. Superintendents of the larger Minnesota school districts rated an average of 6.2 of the 8 subject areas "strong" or "very strong."

Costs are highest where curricula are weakest.

We also found:

- **School districts with few enrollees and weak curricula are costly to operate.**

Results show that the state's smallest districts with weakest curricula spent 38 percent more per student than the statewide average. Most of this is due to low student-staff ratios--ratios 40 percent lower than the statewide average.

DISCUSSION AND RECOMMENDATIONS

In a state which generously funds education and prides itself on its creative accomplishments, we were surprised to find that even a few districts fail to meet minimum, permissive standards and that others regularly rely on methods which limit student-teacher interaction.

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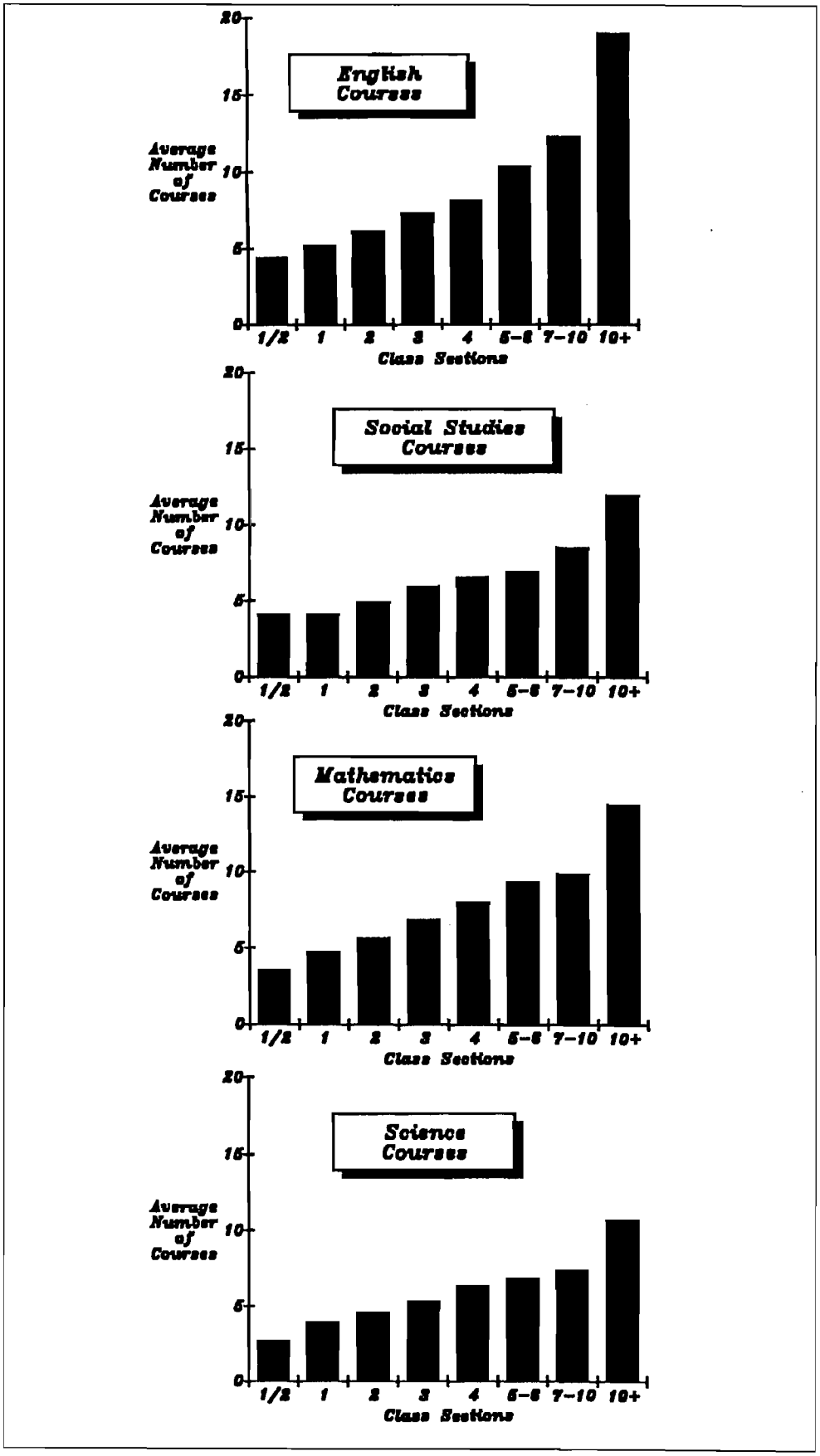
2 Enrollment size is reflected by the number of class sections per grade, assuming 26 students per section.

Larger district enrollment is the strongest explanation for broader academic curricula.



Variation in Number of Core Academic Courses Taught on Site by Class Sections, 1987-88 (Source: Superintendent Survey.)

Number of Class Sections	Operating Expenditures Per Student	Students Per Licensed Staff
1/2	$5,365	8.4
1	4,076	11.7
2	3,744	13.2
3	3,797	14.3
4	3,708	15.0
5-6	3,733	15.1
7-10	3,888	15.9
Over 10	3,997	16.2
Statewide Average	$3,877	13.9

Operating Expenditures Per Student and Students Per Licensed Staff by Class Sections, 1986-87

The Legislature is constitutionally responsible to ensure a uniform, general, thorough, and efficient system of public schools in Minnesota, but it has delegated responsibility to hundreds of local districts. In our view, it is time to reconsider the balance between state and local responsibilities.

We also think that some of our findings are inconsistent with Minnesota's well established policy goals of high quality and equity in public education. Moreover, because it has already accomplished so much, we think that the Legislature will want to take additional steps to reduce the inequities and address performance problems we found.

Based on the extent and importance of the differences which exist in curricula and delivery methods, and the need to ensure students' basic academic achievement, we believe that state actions are needed to improve high school education in Minnesota.

We considered a range of policy options and concluded that the Legislature should:

- **Establish more ambitious, uniform state standards and goals for academic curricula and outcomes.**

- **Provide for systems and staff who would monitor compliance with the new standards on a timely basis.**

- **Ensure full disclosure of comparative information which would summarize each district's high school programs, populations, and outcomes.**

The state needs to ensure that high school programs are sound and generally accessible.

We believe that Minnesota's education policies need revision, and the three recommendations above, if adopted, would resolve the most pressing problems which our evaluation disclosed. In our view, a lack of clear, consistent state policies and comparative information has allowed inequities to develop. But in addition, the Legislature might also consider the following recommendations which would address more specific situations.

First, assuming that the Department of Education upgrades its systems for monitoring regular education and publicizing districts' compliance with state standards, we recommend:

- **The Legislature should direct the department to develop an annual certification program to ensure that each district in the future provides adequate and advanced high school courses.**

We think that students and parents would be empowered to exercise the state's open enrollment option more effectively if differences between districts were clearly indicated. We recognize that some program variations will continue and may be desirable within limits but parents and students should be informed about those variations.

Second:

- **The Legislature should encourage gradual reorganization which would place at least 100 high school students (grades 9 through 12) in each district.**

We found that about 75 of the state's high school districts have fewer than 27 students per grade and that districts of this small size give students less choice of courses, less opportunity for student-teacher interaction, and fewer advanced courses which selective colleges recommend. Also, these districts have the highest operating costs.

Most Minnesota high school graduates should have at least 11th grade reading and math skills.

We also recommend that:

- **The Legislature should enact a program of statewide universal testing which would ensure that all public high school graduates have at least 11th grade reading and mathematics skills.**

Currently, Minnesota districts use more than 80 tests to assess curricula and measure students' academic achievement, skills, and aptitudes. We suggest that the State Board of Education should select a national test which reliably and uniformly establishes at least students' reading and mathematics skills.

Various standard tests of basic reading and mathematics skills are widely used in Minnesota, and we found that 17 percent of high school districts already require students to achieve certain test scores as a condition for graduation. We think every district should test its students, thus assuring that high school graduates throughout the state have universally achieved academic skills in two vital subjects.

The process we envision is that the state board would select an appropriate national test of basic skills and establish the range of scores which are acceptable for Minnesota high school graduates (aside from those with handicapping conditions). By testing high school juniors in this fashion, students with reading and mathematics deficiencies would have a year to build their skills, if necessary, before being re-tested as seniors. But if students' skills remain short of the 11th grade national norm for reading and mathematics, we believe that the state soon should prohibit districts from granting high school diplomas.

In our view, aggregate test results comparing each high school to the state average also should be published as well as other information to enable parents, the state, and local communities to monitor their schools and take appropriate steps when performance lags.

As an additional measure, we suggest that:

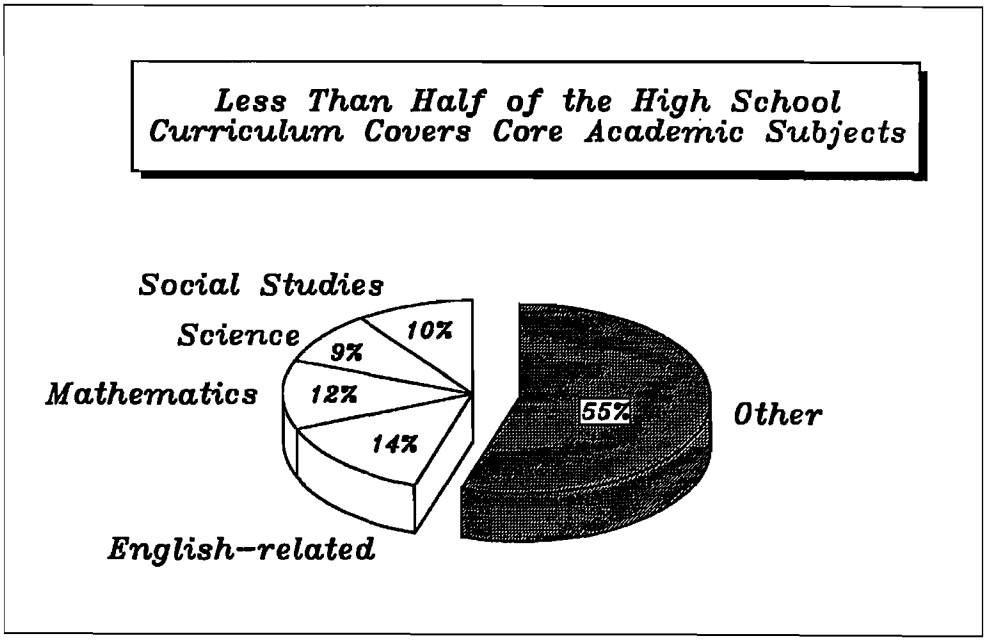
- **The Legislature should consider a restoration of Minnesota's instructional year at least to its previous length and consider a requirement that districts develop homework policies.**

Our evaluation shows that previous legislation had the effect of reducing Minnesota's instructional year by five days--to a level below what it was during the late 1960s. Our survey of superintendents revealed that only 13 percent of the state's high school students attend districts where homework policies were in effect. By requiring one hour of homework each week night, students would receive the full benefit of the state's currently required six-hour school day without additional state or local spending.

Finally, we suggest that:

- **The Legislature should direct the State Board of Education to increase and reconfigure graduation requirements so that high school students in the future devote the majority of their time to English, social studies, mathematics, and science.**

We believe two additional credits (equivalent to two year-long courses) beyond the state's current 20-credit graduation requirement would be helpful in light of most high school students' plans for further education. Also, we suggest that state standards in the future should encourage future students to concentrate their studies in the core academic subjects of English, social studies, mathematics, and science. Surprisingly, our evaluation shows that less than half of the typical high school curriculum now covers these subjects



Distribution of High School Courses Taught on Site Daily by Subject Area

which, we believe, should be the heart of public education in the future.

Other reform efforts should continue.

Other groups and individuals may recommend alternative strategies for improving high school education in Minnesota. Some of these strategies emphasize learner outcomes, improvement of teaching, school-site management, and district reorganization. We believe that our recommendations can supplement, not contradict, other reform strategies.