

**A STRATEGY FOR ACHIEVING EXCELLENCE  
IN SECONDARY EDUCATION:  
THE ROLE OF STATE GOVERNMENT**

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Ninety-three percent of 17 year olds do not have "the capacity to apply mathematical operations in a variety of problem settings." (National Assessment of Educational Progress, 1988b p. 42)

The eighteen percent of the Canadian 18 year olds who are studying chemistry in their final year of high school know as much chemistry as the top 1 % of American high school graduates taking their second year of chemistry, most of whom are in Advanced Placement classes (International Association for the Evaluation of Educational Achievement, 1988).

*The Problem:* The poor performance of American students is sometimes blamed on the nation's "diversity". It is true that secondary schools do a particularly poor job educating African-Americans, Hispanics and children from low income backgrounds generally. But the affluent non-minority parents who believe that their children are doing acceptably by international standards are sadly misinformed. In Stevenson, Lee and Stigler's (1986) study of 5th grade math achievement, the best of the 20 classrooms sampled in Minneapolis was outstripped by every single classroom studied in Sendai, Japan and by 19 of the 20 classrooms studied in Taipei, Taiwan. The nation's top high school students rank far behind much less elite samples of students in other countries. Substantially larger shares of 17-18 year old Belgians, Finns, Hungarians, Scots, Swedes and Canadians are studying advanced algebra, pre-calculus and calculus and their achievement levels are significantly higher than American high school seniors in such classes. The gap between American high school seniors in middle class suburbs and their counterparts in most European nations is substantially larger than the two to three grade level equivalent gap between whites and blacks in the US (NAEP 1988b; IAEEA 1987). The learning deficit is pervasive.

We are justly proud of our high participation in postsecondary education, but most college freshmen and sophomores are studying material that Europeans study in secondary school and drop out rates are extremely high due in part to the poor preparation received in high school. Participation in postsecondary education is expanding rapidly in other industrialized nations. For males, the ratio of higher education graduates to the population 24 years old is 33 percent for Japan, 25 percent for the United States, 20.6 percent for Canada, and 14-16 percent for England, France and Germany (NCES 1990, Indicator 2.8).

If secondary education does not do a better job of preparing our youth for postsecondary education, college completion rates in Canada and continental Europe will surpass our level by the year 2010.

*The Consequences:* The low level of academic achievement in American secondary schools has been a disaster for our youth and our economy. A high school diploma no longer signifies functional literacy. Most schools do not help their graduates obtain employment and many do not even send transcripts to employers when their graduates sign the necessary waivers while applying for a job. In consequence, *for the last six years, an average of 28 percent of noncollege-bound white high school graduates and 55 percent of the black graduates had no job four months after graduating from high school (Bureau of Labor Statistics 1989, 1991). Inflation adjusted wages fell 17.3 percent for young male high school graduates and 10 percent for young female graduates between 1971 and 1988 (Katz and Murphy 1990).*

Export oriented capitalist growth strategies are being adopted throughout the world. These countries have billions of hard working poorly educated workers who are currently paid far less than 50 cents an hour. Manufacturing operations which make heavy use of unskilled labor have been moving abroad and will continue to do so. By the year 2010 only a few manufacturing jobs for poorly educated unskilled workers will remain in the United States and they will pay very poor wages.

The deteriorating achievement levels of those completing high school in the late 1970s did not generate a significant decline in the proportion enrolling in college the following October, but it did cause a major decrease in college completion rates. College graduation rates rose dramatically in the 1950s and 1960s but the share of high school graduates 25-29 years old who have completed 4 years of college peaked at 28 percent in 1976/7, fell to 25 percent in 1981/2, and has since crept back to 27.3 percent in 1989/90 (NCES, 1991, Indicator 2:7). Demand for highly educated workers has grown very rapidly during the last 30 years and wage premiums for professionals and managers are now at post war highs. The very high payoff to completing a college degree has stimulated only a modest increase in rates of college completion, however. For the high school class of 1980, only 18.8 percent had obtained a bachelors degree by February 1986. If the academic preparation of those completing high school does not quickly improve, college drop out rates will remain high and the future supply of highly educated workers will fall far short of the forecasted rapidly

growing demand and the wage gap between educational haves and educational have nots will continue to escalate (Bishop and Carter 1991).

The high school graduates of 1980 knew about 1.25 grade level equivalents less math, science, history and English than the graduates of 1967. This decline in the academic achievement lowered the nation's productivity by \$86 billion in 1987 and will lower it by more than \$200 billion annually in the year 2010 (Bishop 1989).

Business leaders are complaining about the declining quality of entry level workers in the U.S. They and others argue correctly that the competitiveness of American companies is threatened by the poor educational background of our frontline workers. Some have responded to these complaints by saying that business should solve its own problems by improving management and beefing up training. Public education should not, it is argued, give business needs much consideration; student and public needs should come first.

And indeed there is a grain of truth in the first response, the survival of a business is almost entirely determined by factors which schools, even excellent schools, cannot change. If schools do not improve, businesses must and will adapt to the capabilities of the workers that are available. Functionally illiterate workers are less productive, so domestic companies will survive by paying lower wages. Multinational companies will survive by transferring assets and activities overseas. There is no amount of union power or government regulation that can stop this from happening. When the pie shrinks, the slices shrink as well. The losers will be American workers and all who depend on their productivity including the least fortunate among us. Yes, public and student needs must come first. It is their need for higher wages and a better standard of living which drives the need for higher standards in secondary school. Like Cassandra, employers are warning the nation that its mediocre secondary education system is a Trojan Horse which if not repaired will eventually bring the city down. The warning needs to be heeded not because employers are the daughters of a king, but because their forecast is correct and none of us can escape the city.

This paper proposes a strategy for banishing the mediocrity described above and building in its place an excellent American system of secondary education. Before a cure can be prescribed, however, a diagnosis must be made. The first three sections of the paper provide the diagnosis. The fourth and fifth sections propose the cure.

## I. LOW EFFORT: THE PROXIMATE CAUSE OF THE LEARNING DEFICIT

This poor record of achievement is caused by the limited amount of time, money and, above all, psychic energy devoted to academic learning in American high schools. Students, parents and the public are all responsible.

### *1.1 STUDENT EFFORT*

Learning is not a passive act; it requires the time and active involvement of the learner. In a classroom with 1 teacher and 18 students, there are 18 learning hours spent to every 1 hour of teaching time. Student time is, therefore, the critical resource, and how intensely that time is used affects learning significantly.

Studies of time allocation using the reliable time diary method have found that the average number of hours per week in school is 25.2 hours for primary school pupils, 28.7 hours for junior high students and 26.2 hours for senior high students. The comparable numbers for Japan are 38.2 hours for primary school, 46.6 hours for junior high school and 41.5 hours for senior high school (Juster and Stafford 1990). In addition, school years are longer in both Japan and Europe.

Studies show that American students actively engage in a learning activity for only about half the time they are scheduled to be in school. A study of schools in Chicago found that public schools with high-achieving students averaged about 75 percent of class time for actual instruction; for schools with low achieving students, the average was 51 percent of class time (Frederick, 1977). Overall, Frederick, Walberg and Rasher (1979) estimated 46.5 percent of the potential learning time is lost due to absence, lateness, and inattention.

In the High School and Beyond Survey students reported spending an average of 3.5 hours per week on homework (National Opinion Research Corporation 1982). **Time diaries yield similar estimates: 3.2 hours for junior high school and 3.8 hours for senior high school. Time diaries for Japanese students reveal that they spend 16.2 hours per week studying in junior high school and 19 hours a week studying in senior high school.** With the sole exception of Sweden, students in other countries report spending a good deal more time on homework than Americans (Robitaille and Garden 1989). When homework is added to engaged time at school, the total time devoted to study, instruction, and practice in the US is only 18-20 hours per week -- between 15 and 20 % of the student's waking hours

Table 1  
Time Use By Students

	<u>T.V.</u>		<u>Reading Time</u>
	<u>Students</u>	<u>All Adults</u>	<u>Students</u>
U.S.	19.6	15.9	1.4
Austria	6.3	10.6	4.9
Canada	10.9	13.3	1.5
Finland	9.0	9.0	6.0
Netherlands	10.6	13.4	4.3
Norway	5.9	7.2	4.3
Switzerland	7.7	9.0	4.8

Source: Organization of Economic Cooperation and Development, Living Conditions in OECD Countries, 1988, Tables 18.1 & 18.3.

during the school year. By way of comparison, the typical senior spent nearly 10 hours per week in a part-time job (NORC 1982) and 19.6 hours per week watching television. Thus, TV occupies as much time as learning. In Table 1 we can see that secondary school students in other industrialized nations watch much less television: 55 percent less in Finland, 70 percent less in Norway and 44 percent less in Canada (Organization of Economic Cooperation and Development, Table 18.1, 1986). In other countries high school students watch less TV than adults; in the United States they watch more. Reading takes up 6 hours of a Finnish student's non school time per week, 4.8 hours of Swiss and Austrian students time but only 1.4 hours of an American students time.

Science and mathematics deficits are particularly severe because most students do not take rigorous college preparatory courses in these subjects. The high school graduating class of 1982 took an average of only .43 credits of Algebra II, .31 credits of more advanced mathematics courses, .40 credits of chemistry and .19 credits of physics (Meyer 1988 Table A.2).

Even more important than the time devoted to learning is the intensity of the student's involvement in the process. At the completion of his study of American high schools, TheodoreSizer (1984) characterized students as, "**All too often docile, compliant, and without initiative.**(p. 54)" John Goodlad (1983) described: "**a general picture of considerable passivity among students...**(p. 113)". The high school teachers surveyed by Goodlad ranked "lack of student interest" as the most important problem in education.

The student's lack of interest makes it difficult for teachers to be demanding. Sizer's

description of Ms. Shiffe's biology class, illustrates what sometimes happens:

She wanted the students to know these names. They did not want to know them and were not going to learn them. Apparently no outside threat--flunking, for example--affected the students. Shiffe did her thing, the students chattered on, even in the presence of a visitor....Their common front of uninterest probably made examinations moot. Shiffe could not flunk them all, and, if their performance was uniformly shoddy, she would have to pass them all. Her desperation was as obvious as the students cruelty toward her."(1984 p. 157-158)

Some teachers are able to overcome the obstacles and induce their students to undertake tough learning tasks. But for most, the student's lassitude is demoralizing. Teachers are assigned responsibility for setting high standards but we do not give them any of the tools that might be effective for inducing student observance of the academic goals of the classroom. They finally must rely on the force of their own personalities. All too often teachers compromise academic demands because the bulk of the class sees no need to accept them as reasonable and legitimate.

Nevertheless, American students do not appear to realize how poor their performance is. **Even though American 13 year olds were one-fourth as likely as Korean students to "understand measurement and geometry concepts and [to be able to] solve more complex problems," Americans were three times more likely to agree with the statement, "I am good at mathematics" (Lapointe, Mead and Phillips 1989).**

Proposed reforms of secondary education include stricter graduation requirements, more homework, increases in the amount and difficulty of course material, greater emphasis on the basics (English, math, science, social science, computer science), and improvements in the quality of teaching through higher salaries, career ladders, and competency tests for teachers. Although desirable, these reforms are limited in that they emphasize changes in the content and quality of what is offered by schools and require the student to work harder. These reforms have ignored the problem of **motivating** students to take rigorous courses and to study harder. New York State, for example, tried to increase the rigor of high school curricula by upgrading the requirements for the Regents diploma, but the result has been a drop in the numbers of students getting the Regents diploma and an increase in the number of students receiving local diplomas.



## **1.2 PARENTAL EFFORT**

The second major reason for the low levels of achievement by American students is parental apathy. High school teachers rank "lack of parental interest" as the second most important problem in education (Goodlad 1983). An NSF funded survey of 2222 parents of 10th graders found that 25 percent thought their child should take only 1 or 2 science classes in high school (LSAY, Q. BH165). When 2829 high school sophomores were asked whether "My parents...think that math (science) is a very important subject," 40 percent said no with respect to mathematics and 57 percent said no with respect to science (LSAY, Q. AA19Q-AA19R). Only 30 percent of 10th graders reported their parents "want me to learn about computers" (LSAY, Q AA19D).

**Despite the poor performance of Minneapolis 5th graders in mathematics, their mothers were much more pleased with the performance of their local schools than the Taiwanese and Japanese mothers.** When asked "How good a job would you say \_\_\_'s school is doing this year educating\_\_\_", 91 percent of American mothers responded "excellent" or "good" while only 42 percent of Taiwanese and 39 percent of Japanese parents were this positive (Stevenson, Lee and Stigler 1986). Table 2 presents data from this study. Despite the small size of Japanese and Taiwanese homes, 95-98 percent of the fifth graders in these two countries had a desk of their own specifically for studying, while only 63 percent of the

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Table 2  
**Learning Is A Low Priority Of Parents**

	Minneapolis	Sendai Japan	Taipeh Taiwan
Mothers Attended College	58%	22%	13%
5th Grader Has Study Desk	63%	98%	95%
Parents Purchased Workbook for Additional Homework in Mathematics	28%	58%	56%
in Science	1%	29%	51%
5th Grader Assigned Chores	95%	76%	28%
Parents Believe Their School is Doing an "Excellent or Good Job"	91%	39%	42%

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Stevenson, Lee & Stigler "Mathematics Achievement of Chinese, Japanese and American Children," Science, February 1986.

Minneapolis children had a desk. Mathematics workbooks had been purchased for their children by 56-58 percent of Taiwanese and Japanese parents but by only 28 percent of American parents. Science workbooks had been purchased by 51 percent of Taiwanese parents, 29 percent of Japanese parents, and by only 1 percent of American parents (Stevenson, Lee and Stigler 1986). This is not because they love their children any less, they have different priorities such as teaching responsibility and work habits by requiring that they do chores around the house. Clearly, American parents hold their children and their schools to lower academic standards than Japanese and Taiwanese parents.

If American parents were truly dissatisfied with the academic standards of their local public schools, they would send their children to private schools offering an enriched and rigorous curriculum as many parents do in Australia, and tutoring after school would be as common as it is in Japan. Japanese families allocate 10 percent of the family's after-tax income to educational expenses; American families only 2 percent. Most parents who send their children to private day schools appear to be attracted by their stricter discipline and religious education, not by more rigorous academics and better qualified teachers. At the great majority of private day schools, students do not learn at an appreciably faster rate than public school students (Cain and Goldberger 1983).

### ***1.3 PUBLIC EFFORT: EDUCATIONAL EXPENDITURE--A DECEPTIVE INDICATOR***

The ratio of per pupil expenditure in kindergarden through 12th grade to per capita GNP is lower in the United States than in 10 of 11 other advanced Western nations (Mishel and Rasell 1990). This statistic suggests that elementary education receives lower priority in the US than other nations. People who disagree with this implication point to another statistic, per pupil expenditure deflated by a cost of living index on which the United States ranks 2nd among the same group of 12 nations (US Department of Education 1990). This 2nd form of comparison is not very useful, however, because the costs of recruiting competent teachers are much higher in the US than abroad. Labor compensation accounts for the great bulk of education costs and, clearly, the wage that must be paid to recruit qualified teachers is substantially higher in countries with higher standards of living. A wage index for other college graduates in the society would probably be a reasonable proxy for this cost but such data is not generally available. Deflation by GNP per worker or per capita GNP is the next best thing and comes substantially closer to the ideal than deflation by the cost of living.

The result, however, is by no means a perfect index.

Even with the correct deflator, expenditure per pupil remains a deceptive indicator of a nation's investment in education because different countries budget school costs differently and assign public schools different functions. Mishel and Rasell's study included the costs of preschool education in their expenditure figure. Preschool education is funded through public education budgets in many European countries but not in the United States. This inflates European expenditure per pupil figures relative to those in the US. On the other hand, costs of transportation are generally not included in school budgets in Japan and Europe where students, even 1st graders, use the public transportation system to go to school. In many European countries after-school sports are sponsored and organized by local government, not the school. This removes the capital costs of extensive school-based sports facilities and the salaries of coaches and maintenance personnel from the school budget.

Vocational education is more expensive than traditional academic courses. The fact that the United States, Sweden, and France have their schools provide occupational training to large numbers of 16-18 year olds raises costs per student relative to the costs in Germany, Switzerland and Austria where employers are responsible for most of these costs. In 1980, German employers invested an average of \$6000 per year in the training of each apprentice they took on as part of the dual system of vocational training (Noll et al. 1984). American schools perform functions such as after school sports, after school day care, hot lunches, and driver education that other countries often assign to other institutions. When data are carefully adjusted for all of these factors and deflated by a cost of education index reflecting compensation levels in alternative college level occupations, American spending per pupil may well be lower than in many European nations.

The primary reason for low real expenditure on education in the United States is the low levels of teacher compensation. When college graduate earnings are compared, education majors come out at the very bottom. In 1967 males with an undergraduate degree in engineering earned 67 percent more and those with a bachelors degree in business administration earned 36 percent more than males with education degrees.<sup>1</sup> Despite recent increases in teacher salaries the gap between teachers and other college graduates has grown even larger. Data on relative salaries is presented in the first column of Table 3. In 1984, physical science majors earned 105 percent more, engineers earned 128 percent more, economics majors 124 percent more and business majors 116 percent more than education

TABLE 3

## Relative Salaries by College Major

	US Adults 1984	US Prev. Yr. Grads. 1985	1979	Australia Prev. Yr. Grads. 1989
Education	100	100	100	100
Humanities	106	101	86	92
Physical Science	205	127	97	102
Engineering	228	175	102	110
Economics	224	---	91	100
Business (BA)	216	136	---	---
(MBA)	317	---	---	---

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Source: Census, Current Population Report, CPR, P70, No. 13;  
Digest of Educ. Statistics 1987; Graduate Careers Council  
of Australia, "Graduate Starting Salaries 1989."

Table 4  
Relative Teacher Compensation

	Teacher Compensation* 1982-84	GDP Per Hour Worked** 1977-81	Ratio Teacher Index/ GDP/hr
U.S.	100	100	1.0
Belgium	120	94	1.28
Canada	124	88	1.41
France	128	95	1.35
Germany	107	95	1.13
Italy	60	68	.88
Japan	74	59	1.25
Netherlands	106	97	1.09
Sweden	124	79	1.57
United Kingdom	63	78	.81

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\* Total compensation including compulsory health & pension contributions deflated by cost of living. (Index with US = 100) Source UNESCO.

\*\* Total domestic output divided by total hours worked deflated by cost of living. (Index with US = 100) Source Angus Maddison.

majors. Social science majors earned 35 percent more and liberal arts, humanities and English majors earned 6-8 percent more than education majors. An MBA was worth 88 percent more, a Masters in Engineering 70 percent more and a law degree 114 percent more than a Masters or PhD in Education.<sup>2</sup>

It is not an immutable law of nature that teachers should be paid substantially less than college graduates in other occupations. Australian university graduates with education degrees start at the same salary as graduates in economics/business, 8 percent ahead of those who majored in humanities and only 2 percent below those who majored in physical science. Graduating engineers are paid only 10 percent more than education majors in Australia; they are paid 75 percent more in the US (Guthrie 1990). No wonder it is so difficult to attract the best and brightest into the teaching profession. The SAT test scores of entering freshman expressing an interest in majoring in education are lower than for any other major. No wonder it is particularly difficult to recruit science and mathematics teachers.

Comparisons with other industrialized societies tell the same story. Since many countries fund pensions and medical insurance through mandated social security taxes, it is essential to include both voluntary and compulsory contributions for these purposes in the calculation of teacher compensation. Estimates of total compensation per teacher deflated for cost of living differences between countries are presented in the first column of Table 4. In 1982-84, total compensation was 24 percent higher in Canada and Sweden, 6-7 percent higher in Germany and Holland, 20 percent higher in Belgium and 28 percent higher in France than in the United States.<sup>3</sup> Despite lower overall standards of living, these six countries paid their teachers more than we did. Compensation was 37 percent lower in the United Kingdom, 40 percent lower in Italy and 26 percent lower in Japan. Relative to output per hour worked, however, Japan paid its teachers 25 percent more than we did. The relative compensation of teachers was thus lower in only two countries, Britain and Italy.

The question that tends to be raised by statistics such as these is **"Why do American voters choose to pay teachers so little?"** One reason, of course, is that American teachers work fewer days of the year than teachers in Europe and Japan. That only shifts the question slightly. **Why, when all other American workers have shorter vacations than their European counterparts, do American teachers have substantially longer vacations than European teachers? Why is our school year shorter than in most other advanced countries? Why do voters not demand higher standards of academic achievement at local high schools? Why**

**do school boards allocate scarce education dollars to interscholastic athletics and the band rather than better mathematics teachers and science laboratories?** It is to questions such as these that we now turn.

#### ***1.4 VOTER APATHY REGARDING ACADEMIC ACHIEVEMENT***

One of the unique characteristics of the American education system is that all the really important decisions--budget allocations, hiring selections, salary levels, homework assignments, teaching strategies, grading standards, course offerings, pupil assignments to courses and programs, disciplinary policies, etc.--are made by classroom teachers and school administrators who are responding to local political pressures. Federal and state officials are far removed from the classroom, and the instruments available to them for inducing improvements in quality and standards are limited. They do not have effective control of the standards and expectations that prevail in the classroom. They do not control the allocation of school funds between academics and athletics.

State aid can be increased; but econometric studies suggest that increases in state aid reduce local property tax collections by a significant amount (Carroll 1982; Ehrenberg and Chaykowski 1988). For every extra dollar of non-categorical state aid to local school districts only about 50 cents is spent on education by the locality: the rest either lowers tax rates or enables the community to spend more on other public functions. For categorical programs like Title I, the increase in local education spending is larger, but some leakage appears to be inevitable (Tsang and Levin 1983; Monk 1990).

School boards are the primary mechanism by which the voters exercise authority over local schools. In most parts of the country only bond issues need go to the voters for approval. The board determines the budget and sets the property tax rates necessary to fund that budget. Parents are typically a minority of voting age adults in the community, but only about 10 percent of the non-parents in a community typically vote in school board elections. Parents are more likely to vote in school board elections, so they have effective control of the school board in many communities. In all other communities, they could easily gain control the board if they voted in concert. Parents pay less than a third of school taxes in most communities, so voting for school board members who promise to support increased educational spending and higher standards is, for them, a low cost way of improving the school attended by their child. **Why hasn't this potential power been exercised to raise**

**academic standards and teacher salaries? Why are less than a third of parents voting in most school board elections? Why do so many parents vote against increases in school taxes? When additional money is available, why is so much of it spent on upgrading the sports program and the band?**

If, as indicated above, the parents of a community are satisfied with academic outcomes which leave their children years behind students of other nations in mathematics and science, federal and state efforts to raise standards will have no lasting effect.

## **II. THE ABSENCE OF REWARDS FOR EXCELLENCE: THE ROOT CAUSE OF THE LEARNING DEFICIT**

**The fundamental cause of the low effort level of American students, parents, and voters in school elections is the absence of good signals of effort and learning in high school and a consequent lack of rewards for effort and learning.** In the United States the only signals of learning that generate substantial rewards are diplomas and years of schooling. In all other advanced countries mastery of the curriculum taught in high school is assessed by essay examinations which are set and graded at the national or regional level. Grades on these exams signal the student's achievement to colleges and employers and influence the jobs that graduates get and the universities and programs to which they are admitted. How well the graduating seniors do on these exams influences the reputation of the school and in some countries the number of students applying for admission to the school. In the United States, by contrast, students take aptitude tests that are not intended to assess the learning that has occurred in most of the classes taken in high school. The primary signals of academic achievement are grades and rank in class--criteria which assess achievement relative to other students in the school or classroom, not relative to an external standard.

### ***2.1 THE ABSENCE OF REWARDS FOR LEARNING IN HIGH SCHOOL***

Consequently, the students who do not aspire to attend highly selective colleges benefit very little from working hard while in high school, and parents have little incentive to vote the tax increases necessary to upgrade the academic quality of local schools. This is a consequence of eight phenomena:



- 1. Because their student bodies are so diverse, American high schools offer an incredible variety of courses at vastly different levels of rigor. Most students choose courses that have the reputation of being fun and not requiring much work to get a good grade. The rigor of the courses taken is not efficiently signaled to colleges and employers, so taking rigorous courses is seldom rewarded. Teachers know this and adjust their style of teaching and their homework assignments with an eye to maintaining enrollment levels.**
- 2. The peer group actively discourages academic effort. No adolescent wants to be considered a "nerd, brain geek, grade grubber or brown noser," yet that is what happens to students who study hard and are seen to study hard. Peers have a personal interest in persuading each other not to study, because the school's signals of achievement assess performance relative to fellow students through grades and class rank not relative to an external standard.<sup>4</sup>**
- 3. Setting higher academic standards or hiring better teachers does not on average improve the signals of academic performance--rank in class, GPA and SAT scores--that selective colleges use for making admission decisions and a few employers use to make hiring decisions. Higher standards for graduating are not likely to be supported by the parents of children not planning to go to college, because they would put at risk what is most important, the diploma. Higher standards do not benefit students as a group, so parents as a group have little incentive to lobby strongly for higher teacher salaries, higher standards and higher school taxes.**
- 4. There is no effective way of holding most high school and middle school teachers individually accountable for the learning of their students. Unionization is not the critical barrier, for unionized European and Japanese secondary school teachers and most American primary school teachers feel accountable for the learning of their students. The lack of accountability in the US stems from: (1) the rarity of high stakes examinations assessing student achievement in particular subjects relative to an external standard, and (2) the fact that most secondary school students receive instruction in English, mathematics, history, and science from many different**

teachers. The exceptions to this norm are the coaches of the athletic teams, the band conductor, teachers of advanced placement classes, and vocational teachers (who are often evaluated for their success in placing students in good jobs). In Europe, students who are preparing to take a particular exam at the end of their secondary education typically remain together in one class and are taught by the same teacher in successive years. In Japanese junior high schools, a team of teachers, each responsible for a different subject, teach all the 7th graders one year, the 8th graders the next year, and the 9th graders the third year. Examinations taken during 9th grade determine admission to competitive high schools so teachers feel responsible for how well their students do on these examinations.

5. In most American communities, students and parents cannot choose which local public high school to attend. In Europe and Japan, by contrast, the family can, within the constraints of competitive admissions policies, often select which secondary school a student attends. Barriers to attending a school other than the closest one are lower in these countries because public transportation is available, opportunities to participate in sports and music are often organized by the community not the school, and centralized funding of schools means that money follows the student even when a non-public school is selected. The centralization of funding and the free choice of schools results in stronger competitive pressure on schools to excel and smaller quality differentials between schools of the same type than in the U.S.

#### **College Bound Students**

6. Most American colleges and universities do not set rigorous standards for admission. Most financial aid to undergraduates is awarded solely on the basis of need not the student's past academic achievements. High school students know that taking undemanding high school courses and goofing off in these courses will not prevent them from going to college. In the United States access to higher education is rationed primarily by ability and willingness to pay. In Europe, universities are free and most governments provide college students with a stipend to cover living costs. Places in higher education are rationed not by price nor aptitude, but by achievement in the core subjects studied in secondary school.

