

## Number of Teaching Hours Per Year in Public Institutions by Level of Education (1998)

	Primary Education	Upper Secondary Education	Upper Secondary	
			Education General Programs	Upper Secondary Education Vocational Programs
Australia	893	802	802	m
Austria	678	651	616	629
Belgium Fl.	781	691	644	947
Belgium Fr.	854	733	671	1008
Canada				
Czech Republic	724	695	666	666
Denmark	644	644	500	680
Finland	656	485	428	m
France	899	629	611	611
Germany	781	732	688	696
Greece	780	629	629	629
Hungary	583	555	555	555
Iceland				
Ireland	915	735	735	m
Italy	748	612	612	612
Japan				
Korea	644	502	486	497
Luxembourg				
Mexico	800	832	m	m
The Netherlands	973	910	910	875
New Zealand	985	985	505	589
Norway	713	611	874	a
Poland				
Portugal	850	917	x	512
Spain	788	545	545	a
Sweden				
Switzerland	883	860	676	726
Turkey	432	360	360	486
United Kingdom	760	798	798	m
United States	958	964	943	943



# National Association for Year-Round Education

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## TRANSMISSION INFORMATION SHEET

Date/Time 8-2-00

TO AALAP  
Domestic Policy Council

FROM Jeanne Walsh

Organization White House

Location \_\_\_\_\_

Number of pages 10  
(including cover)

FAX number 202-456-<sup>5518</sup>~~6218~~

FAX number (858) 571-5754

SUBJECT: Per your Request / Year-Round Calendar Configurations

MESSAGE: \_\_\_\_\_

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*"Specializing in Time and Learning"*

## LESSONS FROM ABROAD

**I**nternational comparisons of education are difficult. Cultural factors influence performance and school systems differ. Despite such problems, international comparisons are not impossible and a great deal can be learned from examining schooling abroad. In fact, unflattering comparisons of the academic performance of American students with those from other lands spurred attempts at school improvement in the United States throughout the 1980s.

From its review of other nations, the Commission draws several conclusions:

- Students in other post-industrial democracies receive twice as much instruction in core academic areas during high school.
- Schools abroad protect academic time by distinguishing between the “academic day” and the “school day.”
- Many of our economic competitors supplement formal education with significant out-of-school learning time.
- School performance abroad has consequences and is closely related to opportunities for employment and further education.
- Teachers in other countries enjoy freedom and respect as professionals.

In short, education abroad is built around high expectations. Schools hold themselves and the adults and students in them to high standards; in consequence they enjoy high levels of support from parents and the community. As the Commission observed first-hand, schools overseas reflect a cultural passion for learning.

### TWICE AS MUCH CORE INSTRUCTION

Recent comparisons of the number of annual “instructional hours” in different countries indicate that Americans rank in the top half of the nine countries examined. By the standard of time as an instructional resource, American education measures up well.

This standard, however, provides false comfort. As the Commission saw in Germany and Japan, learning is serious business abroad. “Academic time” is rarely touched. Distinctions are made between the academic day (which the Germans call the half day) and the school day (in Germany, the full day).

When asked about the school day, officials produce documents outlining a time frame similar to that in the typical American school. They feel no need to explain extracurricular activities within the school day, because these activities are not allowed to interfere with academic time. Academic time, by and large, is devoted to core academic study—native language and literature, mathematics, science, history, civics, geography, the arts, and second and third languages.

The use of “instructional” time in the United States is markedly different. The Commission analyzed time requirements for core academic subjects in 41 states and the District of Columbia.<sup>1</sup> The results are startling: on average, students can receive a high school diploma—often sufficient in itself for university entrance—if they devote only 41 percent of their school time to core academic work.

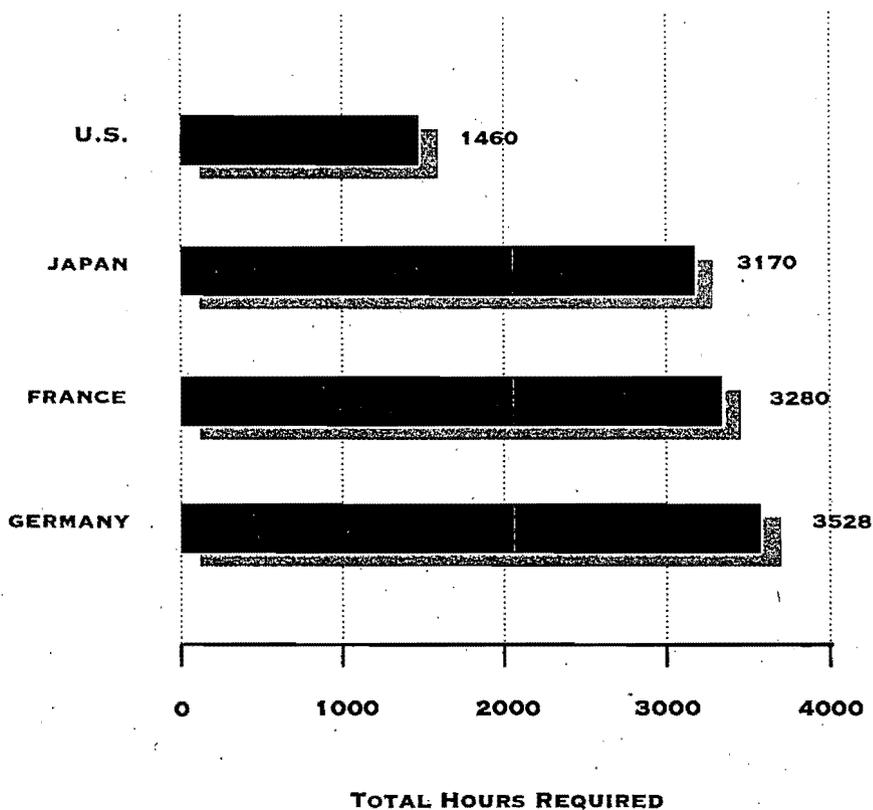
It is conceivable that American students devote more time to demanding coursework than states require. That hope, however, is misplaced: 1993 data from the U.S. Department of Education indicate that the

AS 1994 DAWNED, CALLS FOR MUCH MORE DEMANDING SUBJECT MATTER STANDARDS BEGAN TO BEAR FRUIT. THEIR PURPOSE IS TO BRING ALL AMERICAN YOUNGSTERS UP TO WORLD-CLASS PERFORMANCE STANDARDS.

<sup>1</sup> Nine states did not provide information.

FIGURE 1<sup>2</sup>

THE FINAL FOUR YEARS IN FOUR NATIONS:  
ESTIMATED REQUIRED CORE ACADEMIC TIME



<sup>2</sup> Sources: United States estimate developed from The Digest of Education Statistics (NCES, 1992); State Education Indicators (Council of Chief State School Officers, 1990), and the Commission's review of academic requirements in 41 states and the District of Columbia. The estimate for Japan was developed from Monbusho (1993 publication of the Japanese Ministry of Education, Science and Culture) and site visits to Japanese secondary schools, and confirmed by senior Japanese ministry officials at a meeting in Washington. The estimate for France was developed from a French publication, Organization of the French Educational System Leading to the French Baccalaureat, and confirmed by French officials. The German estimate is actually the number of hours of required coursework for one state, Berlin.

course of study most students follow is very close to what states require.

Figure 1 compares requirements for core academic instruction in the final four years of secondary school in four countries: Germany, France, Japan, and the United States. It displays minimum time requirements at the secondary level in core academic subjects, based on our observations abroad and official state and national publications. In their final four years of secondary school, according to our estimates, French, German, and Japanese students receive more than twice as much core academic instruction as American students. Although these estimates are approximations, we are convinced they reflect the magnitude of the academic time trap in which American schools are caught.

Figure 1 speaks for itself. No matter how the assumptions underlying the figure are modified, the result is always the same—students abroad are required to work on demanding subject matter at least twice as long. In practical terms, this means that most foreign students are studying language, literature, science and two or more languages, while many of our young people spend their time in study halls, pep rallies, driver education, and assemblies.

Even the most committed advocate of the *status quo* will concede that American students cannot learn as much as their foreign peers in half the time. By this standard, our education system still has a long way to go.

One need look no further than Figure 1 to understand why European and Asian visitors to the United States commonly understand English while their children outperform American students on tests of student achievement. Americans abroad, by contrast, assume they will deal with people who speak English. Our high school students have trouble reading, writing, and solving simple mathematics problems.

The emphasis on core academic instruction abroad does not mean that other activities are ignored. Up to 50 percent of German students, even in farming areas, remain at the school after the academic day ends in clubs, sports, and additional

classes of one kind or another. In Japan, students clean their school when the academic day ends and then enter activity periods.

#### OUT-OF-SCHOOL LEARNING

The formidable learning advantage Japanese and German schools provide to their students is complemented by equally impressive out-of-school learning. Large numbers of Japanese students (two-thirds of all students in Tokyo; nationally about 15 percent of all students in grade four rising to nearly 50 percent by grade nine) attend *jukus*—private, tutorial services that enrich instruction, provide remedial help, and prepare students for university examinations.

A Japanese research institute official told the Commission that elementary school teachers teach to the “middle of the class.” Gifted students who might get bored or students who need extra assistance are expected to turn to the *juku* for help.

*Jukus* are a big business in Japan. Spending on the estimated 35,000 *jukus* reaches about 800 billion yen annually (over \$7 billion), costing the average family, according to Japanese officials, about \$2,500 per year, per child.

In Japan, schools and the larger society generally ignore “ability” or “aptitude” as factors in school success. The Japanese are convinced that hard work can help every student meet high standards. Diligence, application, and enterprise are the keys—if a student is not “getting it,” more time, usually self-directed time, is the answer.

*Jukus* do not exist in Germany. But if German students are similar to their peers throughout Europe, 50 percent of them spend two or more hours on daily homework, and only 7 or 8 percent watch television for five or more hours a day. In the United States, only 29 percent of students report doing as much homework and three times as many watch television daily for five or more hours.

In sum, compared to American students, German and Japanese youth are exposed in high school to much more demanding academic subjects, for many more hours.

They spend more serious time learning outside the school. And they fritter away less time in front of the television.

#### **PERFORMANCE CARRIES CONSEQUENCES**

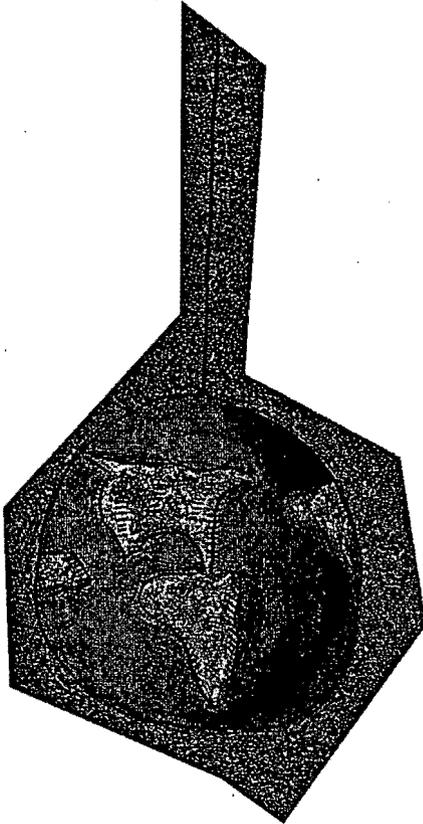
Another distinction that can be drawn between American education and schooling abroad is in consequences for school performance. In Germany and Japan, learning matters. Performance, not seat time, is what counts. Students understand that what they learn in school will make a real difference to their chances in life. In the United States, paper credentials count. Apart from the small percentage of students interested in highly selective colleges and universities, most students understand that possession of even a mediocre high school diploma is enough to get them into some kind of college or job.

Students in German vocational schools know that what they learn in class is closely related to what they will do on the job, because their apprenticeship experience (an alternating routine of learning in class and learning on the job) demonstrates the relationship every day. German students interested in pursuing a university career also understand that they will have to pass the *Abitur*, a demanding examination covering secondary school preparation.

Examination pressure is even more severe in Japan. Since attendance in upper secondary schools (grades 10-12) is not compulsory in Japan, young people take examinations even to enter public high schools. Although 90 percent of Japanese young people complete high school, the particular high school attended is critical to the chances for university admission. Moreover, Japanese students also must sit for intense, pressure-filled, competitive examinations for admission to the best universities.

#### **PROFESSIONAL PRACTICE**

Teachers are held to much higher standards in both Germany and Japan. In Germany, teachers are expected to be more



knowledgeable in their subjects than are teachers in the United States. Teacher preparation, consequently, takes up to six years (compared to four in the United States). In Japan, aspiring teachers are required to pass a rigorous examination prior to certification. The organization of school time in both societies encourages continued development of teachers, who are given the time they need to grow and cooperate as professionals.

Japanese teachers generally deal with more students in each classroom, but teach fewer classes; the typical class has between 35 and 40 students, compared to an average of 23 in the United States. However, Japanese teachers are typically in "front of the class" for only four hours a day. Time spent outside the classroom is not considered wasted, but an essential aspect of professional work. The same phenomenon can be seen in Germany—teachers are in front of a class for 21 to 24 hours a week, but their work week is 38 hours long. Non-classroom time is spent on preparation, grading, in-service education, and consulting with colleagues.

In both countries, the Commission sensed considerably greater encouragement of teacher professionalism than is apparent in the United States. In Germany, for example, teachers select the texts they will use to meet *Länder* (state) standards; in 15 of the 16 states, teachers design and administer their own tests for the *Abitur*, and teachers validate colleagues' testing by sharing examinations with each other and discussing test questions.

#### NOT JUST A MATTER OF TIME

It is clear from these observations that the issue of improving student performance is not simply a matter of time. Time is clearly critical. In the context of a global market for educated people, the fact that youth abroad receive the equivalent of several additional years of schooling cannot be ignored. But other factors are equally important. Elsewhere, core academic instruction is emphasized. Academic time

is protected. Expectations for out-of-school learning are high. Teachers are held to high standards and treated as professionals.

All of these are critical factors in the success of schooling abroad. And all of them are feasible, because foreign schools understand that effective learning depends on freeing schools, teachers, and students from the bonds of time.

## RECOMMENDATIONS

**A**s various panaceas have been advanced in the last decade to solve the problems of learning in America, education reform has moved in fits and starts. Indeed, as different helmsmen have seized the wheel, the ship of education reform has gone round in circles. If we have learned anything from these efforts, it is that no single solution exists for the problems of American schools.

Reform can only succeed if it is broad and comprehensive, attacking many problems simultaneously. In that effort, high standards and time are more than simply additional oars in the water. With standards

as our compass, time can be the rudder of reform.

In our judgment, educators have created a false dilemma in debating whether additional instructional time can be found within the confines of the current day and calendar, or needs to be sought by extending both. False dilemmas produce bad choices. To meet new demands, the United States needs both—the best use of available time and more time.

### **EIGHT RECOMMENDATIONS**

We offer eight recommendations to put time at the top of the nation's reform agenda:

- I. REINVENT SCHOOLS AROUND LEARNING, NOT TIME.**
- II. FIX THE DESIGN FLAW: USE TIME IN NEW AND BETTER WAYS.**
- III. ESTABLISH AN ACADEMIC DAY.**
- IV. KEEP SCHOOLS OPEN LONGER TO MEET THE NEEDS OF CHILDREN AND COMMUNITIES.**
- V. GIVE TEACHERS THE TIME THEY NEED.**
- VI. INVEST IN TECHNOLOGY.**
- VII. DEVELOP LOCAL ACTION PLANS TO TRANSFORM SCHOOLS.**
- VIII. SHARE THE RESPONSIBILITY: FINGER POINTING AND EVASION MUST END.**

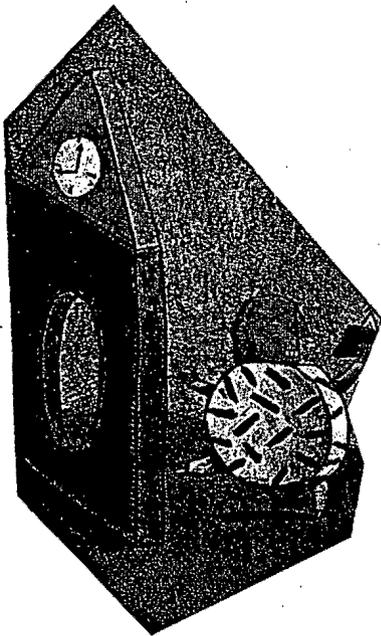
VETERAN TEACHERS ARE WELL AWARE THAT TODAY'S STUDENTS BRING MANY MORE PROBLEMS TO SCHOOL THAN CHILDREN DID A GENERATION AGO.

## RECOMMENDATIONS

### I.

#### REINVENT SCHOOLS AROUND LEARNING, NOT TIME

WE RECOMMEND A COMMITMENT  
TO BRING EVERY CHILD IN THE  
UNITED STATES TO WORLD-CLASS  
STANDARDS IN CORE ACADEMIC AREAS.



By far the most important part of this Commission's charge relates not to time but to student learning. The first issue is not "How much time is enough?" but "What are we trying to accomplish?" As witnesses repeatedly told the Commission, there is no point to adding more time to today's schools if it is used in the same way. We must use time in new, different, and better ways.

The Commission is convinced the following areas represent the common core all students should master: English and language arts, mathematics, science, civics, history, geography, the arts, and foreign languages. This core defines a set of expectations students abroad are routinely expected to meet. American students can meet them as well.

Regular assessments at different stages of students' lives should require every student to demonstrate a firm grasp of demanding material in each of these areas, a grasp extending far beyond the trivial demands of most multiple-choice tests. They should assess not only the mastery of essential facts, but also the student's ability to write, reason, and analyze.

**FIX THE DESIGN FLAW: USE TIME IN NEW AND BETTER WAYS**

**WE RECOMMEND THAT STATE AND LOCAL BOARDS WORK WITH SCHOOLS TO REDESIGN EDUCATION SO THAT TIME BECOMES A FACTOR SUPPORTING LEARNING, NOT A BOUNDARY MARKING ITS LIMITS.**

The conviction that learning goals should be fixed and time a flexible resource opens up profound opportunities for change.

At a minimum, fixing the design flaw means recognizing that very young children enter school at very different levels of readiness. Some enter kindergarten already reading. Others readily manage computer programs appropriate to their age and skill levels. But some cannot recognize letters from the alphabet or identify numbers or pictures. Sadly, too many are already abused and neglected. School readiness is the basic foundation on which the rest of the school program is built.

Fixing the design flaw also makes possible radical change in the teaching and learning process. New uses of time should ensure that schools rely much less on the 51-minute period, after which teachers and students drop everything to rush off to the next class. Block scheduling—the use of two or more periods for extended exploration of complex topics or for science laboratories—should become more common. Providing a more flexible school day could also permit American schools to follow international practice—between classes students remain in the room and teachers come to them.

A more flexible time schedule is likely to encourage greater use of team teaching, in which groups of teachers, often from different disciplines, work together with students. Greater flexibility in the schedule will also make it easier for schools to take advantage of instructional resources in the community—workplaces, libraries, churches, and community youth groups—and to work effectively with emerging technologies.

Fixing the design flaw means that grouping children by age should become a thing

of the past. It makes no more sense to put a computer-literate second grader in *Introduction to Computers* than it does to place a recent Hispanic immigrant in *Introductory Spanish*. Both should be placed at their level of accomplishment. Although the Commission does not believe 15-year olds should leave high school early, meeting high performance standards in key subjects should be the requirement for the high school diploma, not simply seat time or Carnegie units. In the case of genuinely exceptional students who meet these requirements while very young, schools should offer them the opportunity to take advanced courses.

Above all, fixing the flaw means that time should be adjusted to meet the individual needs of learners, rather than the administrative convenience of adults. The dimensions of time in the learning process extend far beyond whether one student needs more time and another can do with less. The flexible use of time can permit more individualized instruction.

We should not forget that students are like adults in many ways. Some are able to focus intensely on demanding materials for long periods; others need more frequent breaks. Many students, like many adults, learn best by reading; some learn best by listening; others, by doing, or even by talking amongst themselves. Offering more frequent breaks, providing more opportunities for hands-on learning, encouraging group work—these techniques and others can parole some of the students who today feel most confined by the school's rigid time demands.

All of these possibilities—and many others—lie within reach if the design flaw is fixed. All of them are much more difficult within the prison of time-bound education.

### III.

#### ESTABLISH AN ACADEMIC DAY

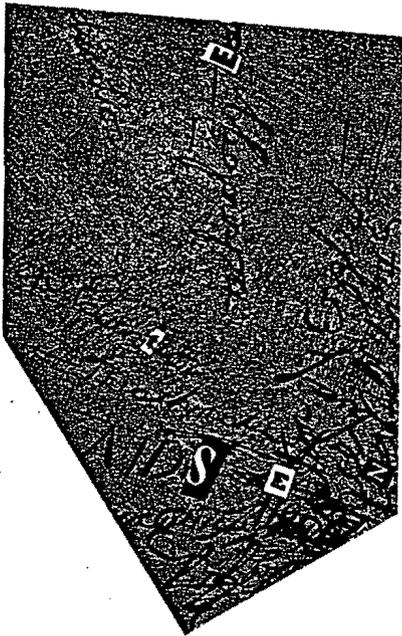
**WE RECOMMEND THAT SCHOOLS PROVIDE ADDITIONAL ACADEMIC TIME BY RECLAIMING THE SCHOOL DAY FOR ACADEMIC INSTRUCTION.**

The Commission is convinced that if American students are to meet world-class standards all children will need more academic time. Reclaiming the academic day means providing at least 5.5 hours of *core academic instructional time* daily. That time should be devoted exclusively to the common core of subjects identified in Recommendation I.

The Commission's analysis of how time is currently used in American schools makes one thing clear: even within the confines of a 180-day school year, reclaiming the academic day should, alone, nearly double the amount of instructional time in core curriculum areas. For some students, reclaiming the academic day will provide all the additional time they need to meet new standards. For most others, however, more academic time will be required.

Establishing an academic day means, in essence, that the existing school day be devoted almost exclusively to core academic instruction. What this means is obvious: many worthwhile student programs—athletics, clubs, and other activities—will have to be sacrificed unless the school day is lengthened. We do not believe they should be sacrificed, or that communities will agree to do without them. At the same time, we cannot agree to sacrificing the academic core of the school to other activities. Instead, all student activities should be offered during a longer school day.

Compensatory programs and special efforts for the gifted and talented can be provided during the longer school day. Language instruction for non-native English speakers should be provided in this longer day. Students who want to accelerate their studies, perhaps spending only three years in high school, can also use this time.





## DEVELOPING A NEW GENERATION OF SCIENTISTS, SCHOLARS, AND LEADERS

NO ONE CAN VISIT THE THOMAS JEFFERSON HIGH SCHOOL FOR SCIENCE AND TECHNOLOGY, ALEXANDRIA, VIRGINIA, WITHOUT REALIZING IT IS ONE OF THE MOST REMARKABLE PUBLIC SCHOOLS IN THE UNITED STATES—REMARKABLE FOR THE WEALTH OF THE SUBURBAN SCHOOL DISTRICT THAT SUPPORTS IT, THE TALENTS OF ITS SELECTED STUDENTS, THE SKILL OF ITS STAFF, THE TECHNOLOGIES IT EMPLOYS, AND THE SUPPORT IT RECEIVES FROM THE BUSINESS COMMUNITY.

IT IS REMARKABLE FOR SOMETHING ELSE AS WELL. ITS SCHEDULE IS DIFFERENT; EVERY SCHOOL DAY AT THOMAS JEFFERSON IS LENGTHENED BY ONE PERIOD, DURING WHICH EVERY ONE OF ITS 1,600 9TH TO 12TH GRADERS IS REQUIRED TO PARTICIPATE IN A STUDENT ACTIVITY OR RELATED COURSEWORK SUCH AS TUTORING, LABORATORIES, OR GUIDANCE ACTIVITIES. DAILY SCHEDULES ARE ALSO FLEXIBLE ENOUGH TO LET EVERY CLASS MEET FOR AT LEAST ONE DOUBLE-PERIOD EVERY WEEK.

THE SELECTIVITY OF THE SCHOOL—AND CORPORATE SPONSORSHIP OF STATE-OF-THE-ART TECHNOLOGICAL ENVIRONMENTS IN AREAS SUCH AS OPTICS, ENERGY SYSTEMS, TELECOMMUNICATIONS, BIOTECHNOLOGY, AND INDUSTRIAL ROBOTICS—MAKES IT EASY TO OVERLOOK THE SCHOOL'S SCHEDULE AS A FACTOR IN ITS SUCCESS.

WHAT DOES THE EXTRA PERIOD MEAN IN PRACTICE? ACCORDING TO SOPHOMORE PAUL HELMS, "IT IS ONE OF THE MOST IMPORTANT THINGS IN THE SCHOOL. I USE IT TO GO TO BOTH THE FELLOWSHIP OF CHRISTIAN ATHLETES AND TO A LATIN HONORS CLASS." SENIOR SETH MITCHCO: "EIGHTH PERIOD HAS HELPED MAKE THIS SCHOOL THE CENTER OF OUR LIVES AND OFTEN OF OUR FAMILIES."

A SCHEDULE THAT HELPS MAKE SCHOOL THE CENTER OF THE LIVES OF STUDENTS AND FAMILIES MAY BE THE MOST REMARKABLE THING ABOUT THE THOMAS JEFFERSON HIGH SCHOOL FOR SCIENCE AND TECHNOLOGY.

## IV.

### KEEP SCHOOLS OPEN LONGER TO MEET THE NEEDS OF CHILDREN AND COMMUNITIES

WE RECOMMEND THAT SCHOOLS RESPOND TO THE NEEDS OF TODAY'S STUDENTS BY REMAINING OPEN LONGER DURING THE DAY AND THAT SOME SCHOOLS IN EVERY DISTRICT REMAIN OPEN THROUGHOUT THE YEAR.

No magic number of hours in the day, or days in the year, will guarantee learning for all students. As a rule of thumb, about 5.5 hours of core academic instruction daily is a useful frame of reference for the typical student. But it is only a frame of reference. Many students will need more time; some will need less.

As noted under Recommendation III, establishing an academic day of necessity requires lengthening the school day, both for extracurricular activities and for time to offer some students academic programs designed to give them special help or opportunities.

Schools open throughout the year can also provide many services to adults, serving as centers in which community agencies offer adult education, "intergenerational" literacy efforts teaching parents and children together, and programs stressing, for example, parenting or job skills. When the walls of the prison of time are torn down, schools can realize their full potential as community learning centers, vibrant and responsive to the educational needs of citizens of every age.

We stress again that many children, in many different communities, are growing up today without the family and community support taken for granted when the public school was created 150 years ago. The documented need for child care and uncoordinated nature of the variety of public and private providers now trying to meet it—licensed and unlicensed, for profit and not-for-profit, in homes and in community facilities—can no longer be ignored.

No single agency can meet all of the needs of today's families, nor can any major public agency ignore them. Extended-day services that offer safe havens for children in troubled neighborhoods are a logical solution to the child care problem; a problem that does not go away when schools close for the summer. Moreover, schools have every interest in making sure that a wide variety of other services—immunizations, health screening, nutrition, and mental health, among others—are available to children and their families. Without such services, it is unlikely that the first of the National Education Goals ("school readiness") can be achieved.

Fixing the design flaw requires acknowledging something else as well: state mandatory attendance requirements defining how many days students should attend school should not define how many days schools should remain open. In fact, state financial support should encourage more learning time. If Americans are ever to escape the education time trap, some schools in every district should be open throughout the year so that students can find the help they need, when they need it.

Finally, we note that in suggesting greater use of school facilities to meet the needs of children and communities, we are not recommending that schools provide these services directly or pay for them. Schools should act as advocates, insisting that the needs of children and families be met and making school facilities available whenever possible for services essential to student learning.



**THE EXTENDED DAY AND YEAR: ONE COMMUNITY'S EXPERIENCE  
WITH PUBLIC DEMAND**

THE MURFREESBORO SCHOOLS IN TENNESSEE MAY HAVE THE MOST COMPREHENSIVE EXTENDED-DAY AND -YEAR PROGRAM IN THE UNITED STATES. IN 1986, MURFREESBORO DECIDED THAT COMMUNITY CONCERN ABOUT LATCH-KEY CHILDREN WAS STRONG ENOUGH TO JUSTIFY EXTENDING THE SCHOOL YEAR. THE DISTRICT ANNOUNCED THAT ONE ELEMENTARY SCHOOL WOULD BE OPEN FROM 6:00 A.M. UNTIL 6:00 P.M. WITH PARENTS PAYING FOR THE EXTENDED-DAY SERVICES. FOUR STUDENTS SHOWED UP. WITHIN TWO YEARS, PUBLIC DEMAND FORCED THE EXTENSION OF THE CONCEPT TO EVERY ELEMENTARY SCHOOL IN THE CITY. THIS YEAR, 50 PERCENT OF THE CITY'S 5,000 ELEMENTARY SCHOOL STUDENTS CAN BE FOUND IN THE PROGRAM ON ANY GIVEN DAY, ALL ON A VOLUNTARY BASIS ON THE PART OF PARENTS.

PLANS ARE NOW WELL ADVANCED TO OPEN MURFREESBORO'S FIRST K-8 YEAR-ROUND SCHOOL IN AUGUST 1994. PARENTAL FREEDOM OF CHOICE WILL DETERMINE ENROLLMENT. DISTINGUISHING BETWEEN THE "SCHOOL DAY," "EDUCATIONAL SERVICES," AND "EXTENDED SCHOOL SERVICES," THE SCHOOL WILL OFFER EDUCATIONAL SERVICES FROM 8:00 A.M. UNTIL 5:30 P.M., AND EXTENDED SERVICES BEFORE SCHOOL FROM 6:00 A.M. AND AFTER SCHOOL UNTIL 7:00 P.M. EXTENDED SERVICES WILL BE AVAILABLE FIVE DAYS A WEEK, 52 WEEKS A YEAR. INTERIM SESSIONS WILL OFFER 40 EXTRA DAYS OF ACADEMIC TIME.

PARENTS CHOOSING TO TAKE ADVANTAGE OF EDUCATIONAL SERVICES FOR THEIR CHILDREN AFTER 3:00 P.M. (OR DURING THE 40 DAYS) WILL PAY A SMALL FEE, AS WILL PARENTS OPTING FOR EXTENDED SERVICES. STUDENTS DIRECTED BY SCHOOL PERSONNEL TO ATTEND SUPPLEMENTARY CLASSES WILL DO SO AT DISTRICT EXPENSE. MURFREESBORO EXPECTS TO ACCOMPLISH ALL OF THIS WITHIN ITS REGULAR PER-PUPIL EXPENDITURES FIGURES. MAYOR JOE JACKSON BRIDLES AT THE SUGGESTION THAT EXTENDED SERVICES UNDERMINE THE FAMILY. "YOU'VE GOT IT EXACTLY BACKWARDS," HE RESPONDS. "THESE SERVICES SUPPORT THE FAMILY BY MAKING IT POSSIBLE FOR PEOPLE TO WORK WITHOUT WORRYING BECAUSE THEY KNOW THEIR CHILDREN ARE INVOLVED IN CONSTRUCTIVE LEARNING."

## V.

### GIVE TEACHERS THE TIME THEY NEED

**WE RECOMMEND THAT TEACHERS BE  
PROVIDED WITH THE PROFESSIONAL  
TIME AND OPPORTUNITIES THEY NEED  
TO DO THEIR JOBS.**

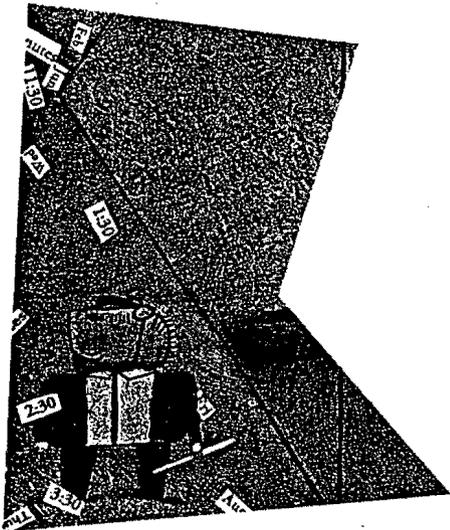
The daily working life of most teachers is one of unrelieved time pressure and isolation; they work, largely alone, in a classroom of 25-30 children or adolescents for hours every day. Unlike teachers in many systems overseas, who can take advantage of continuous, daily opportunities for professional development, American teachers have little time for preparation, planning, cooperation, or professional growth.

The Commission believes that time for planning and professional development is urgently needed—not as a frill or an add-on, but as a major aspect of the agreement between teachers and districts.

The whole question of teachers and time needs to be rethought in a serious and systematic way. The issue is not simply teachers. It is not just time. The real issue is education quality. Teachers need time to develop effective lessons. They need time to assess students in meaningful ways and discuss the results with students individually. They need time to talk to students, and listen to them, and to confer with parents and other family members. They need time to read professional journals, interact with their colleagues, and watch outstanding teachers demonstrate new strategies.

Districts can provide this time in several ways: extending the contract year to pay teachers for professional development, using the longer day for the same purpose, or providing for the widespread and systematic use of a cadre of well-prepared, full-time, substitute teachers.

The last thing districts should encourage is sending children home to provide time for “teacher professional days.” We will never have truly effective schools while teachers’ needs are met at the expense of students’ learning time.



## VI.

### INVEST IN TECHNOLOGY

**WE RECOMMEND THAT SCHOOLS SEIZE ON THE PROMISE OF NEW TECHNOLOGIES TO INCREASE PRODUCTIVITY, ENHANCE STUDENT ACHIEVEMENT, AND EXPAND LEARNING TIME.**

Technology is a great unrealized hope in education reform. It can transform learning by improving both the effectiveness of existing time and making more time available through self-guided instruction, both in school and out. Technology has already changed much of the rest of American society—profit and non-profit, private sector and government alike—because it makes it possible to produce more with less. A similar revolution is possible in education.

At a minimum, computers and other technological aids promise to rid teachers and administrators of the mundane record keeping that is such a characteristic of school life today, permitting teachers to spend more time designing instructional programs for their students.

But the true promise of technology lies in the classroom. Technology makes it possible for today's schools to escape the assembly-line mentality of the "factory model" school. With emerging hardware and software, educators can personalize learning.

Instead of the lock-step of lecture and laboratory, computers and other new

telecommunications technologies make it possible for students to move at their own pace. Effective learning technologies have already demonstrated their ability to pique student interest and increase motivation, encouraging students not only to spend more of their own time in learning but also to be more deeply involved in what they are doing.

Finally, it should be noted that the "information superhighway" can reshape education as it will other areas of American life. The school revolution, however, depends both on a concerted investment strategy to help educators obtain these technologies and on educators confronting their reluctance to supplement the techniques of the 19th century (textbooks, chalk and blackboards) with the technologies of the 21st (CD-ROMs, modems, and fiber optics). They must do so. In order to help them, states should establish special funds to provide low-interest loans and grants, and they should create large-scale purchasing agreements for new technologies and teacher training in their use.

## VII.

### DEVELOP LOCAL ACTION PLANS TO TRANSFORM SCHOOLS

WE RECOMMEND THAT EVERY DISTRICT CONVENE LOCAL LEADERS TO DEVELOP ACTION PLANS THAT OFFER DIFFERENT SCHOOL OPTIONS AND ENCOURAGE PARENTS, STUDENTS, AND TEACHERS TO CHOOSE AMONG THEM.

School reform cannot work if it is imposed on the community top-down. Genuine, long-lasting reform grows from the grassroots.

The Commission believes every community must engage in a community-wide debate about the shape and future of its schools. To that end, we encourage every district, with the support of the superintendent and local school board, to engage major school stakeholders in a comprehensive, long-term dialogue about the hopes, aspirations, and future directions of local education. The conversation should include students, parents, taxpayers, employers, and representatives of public assistance, juvenile justice, health and other social services agencies. It should be organized around learning time. If this conversation is to be productive, it is essential to include teachers and administrators as equal partners.

We are convinced that larger school districts can offer families a wide array of alternative school calendars by encouraging individual schools to adopt distinctive approaches. The more options, the better. No single configuration will satisfy every need. Districts of any size, with a sense of vision, boldness, and entrepreneurship can experiment with block scheduling, team teaching, longer days and years, and extending time with new distance-learning technologies.

No community in the United States is so small or impoverished that it cannot benefit from an examination of how it uses time—

if not in extending the day or year, at least in re-configuring how it uses the time now available.

The Commission wants to stress that this recommendation provides a real opportunity for local leadership groups—the business community, colleges and universities, churches, civic groups, newspapers and the electronic media—to go beyond criticizing schools by helping frame the education debate community by community. This is not just a task for educators. There can be no doubt that the 1989 Education Summit, convened under the leadership of the White House and the nation's governors, went a long way towards focusing Americans on the goals they hold in common for their schools. Local leaders can do a lot to transform their communities and their schools by convening similar education summits, county by county, city by city, district by district, and, if need be, school by school.

Finally, the Commission issues a challenge to local school boards: use your time to perform the leadership role for which you have been elected or appointed.

Recent analyses demonstrate convincingly that far too many boards function as managers instead of policymakers. School board time should be devoted to local policy, goals, and the education needs of children, not to micro-management of school operations.

Our challenge: help your community crystallize a vision for its schools.



### “YEAR-ROUND EDUCATION”

PRINCIPAL HOWARD LAPPIN OF LOS ANGELES' JAMES A. FOSHAY MIDDLE SCHOOL SHOWED THE COMMISSION AN EXAMPLE OF A “YEAR-ROUND EDUCATION” PROGRAM. DESPITE THE NAME, MOST YEAR-ROUND SCHOOLS ARE A REORGANIZATION OF THE 180-DAY SCHOOL YEAR; THEY DO NOT PROVIDE ADDITIONAL TIME FOR EITHER LEARNING OR NONACADEMIC SERVICES. NEVERTHELESS, THEIR EXISTENCE INDICATES THAT ALTERNATIVE CALENDARS ARE FEASIBLE IN MANY AREAS AND YEAR-ROUND EDUCATION IS PROBABLY THE MOST WIDELY COPIED ALTERNATIVE TO THE TRADITIONAL CALENDAR. NATIONWIDE, NEARLY 2,000 PUBLIC AND PRIVATE SCHOOLS, ENROLLING MORE THAN 1.4 MILLION CHILDREN, ARE ON YEAR-ROUND CALENDARS, WITH THE LION'S SHARE OF SCHOOLS AND ENROLLMENT IN CALIFORNIA—ABOUT 1,300 SCHOOLS AND 1.16 MILLION CHILDREN.

THE YEAR-ROUND SCHEDULE CREATES FOUR SEPARATE SCHOOLS WITHIN FOSHAY'S WALLS. FOSHAY OPERATES FOUR DIFFERENT SCHEDULES, EACH BEGINNING AND ENDING AT A DIFFERENT TIME OF THE YEAR WITH ONE-QUARTER OF THE SCHOOL'S ENROLLMENT. STUDENTS NORMALLY SPEND ONLY 180 DAYS AT SCHOOL, BUT IT IS USED YEAR ROUND, WITH THREE-QUARTERS OF THE SCHOOL'S ENROLLMENT IN THE BUILDING AT ANY GIVEN TIME. TWO-WEEK INTER-SESSIONS BETWEEN SCHOOL TERMS PERMIT STUDENTS TO RECEIVE AN ADDITIONAL 60 HOURS (TEN DAYS) OF INSTRUCTION IF NEEDED.

THE SCHOOL OPERATES SOME SATURDAY CLASSES FOR BOTH STUDENTS AND PARENTS, INCLUDING A JOINT EFFORT WITH THE UNIVERSITY OF SOUTHERN CALIFORNIA. THE JOINT PROGRAM ENROLLS 60 STUDENTS WHO ARE GUARANTEED FULL ASSISTANCE TO ATTEND USC IF THEY PERSIST AND COMPLETE THE SCHOLASTIC ASSESSMENT TEST WITH COMBINED MATH AND ENGLISH SCORES OF AT LEAST 1000. THE USC PROGRAM ALSO REQUIRES MANDATORY SATURDAY CLASSES FOR THE STUDENTS AND THEIR PARENTS.

## VIII.

### SHARE THE RESPONSIBILITY: FINGER POINTING AND EVASION MUST END

#### WE RECOMMEND THAT ALL OF OUR PEOPLE SHOULDER THEIR INDIVIDUAL RESPONSIBILITIES TO TRANSFORM LEARNING IN AMERICA.

No single recommendation can capture the essential point with which the Commission concluded the first chapter: learning must become a national obsession in the United States.

In America's great education debate we find too often a belief that the solution is up to government or "the system." Nothing could be further from the truth. It is up to us. Most of what needs to be done can only be done by the people most directly involved. There are no short-cuts. Lightning will not strike and transform American schools if each of us acts as though the task belongs to somebody else.

To put learning in America powerfully back on track everyone will have to do more, make sacrifices, and work harder. Great institutions like the American school do not fail simply because they collapse from within. Complacency within combines with public apathy to enfeeble institutions, leaving behind impressive but empty facades.

The implications are clear. Schools cannot do the job alone. All of us have to shoulder our responsibilities. If we think this transformation too difficult, we must again learn the wisdom of the African proverb, "It takes a whole village to raise a child."

It takes a family to raise a child. Parents are more than their children's "first teachers"—they are lifelong examples bearing witness to community norms and expectations, to the values that give meaning, texture, and a sense of purpose to life.

It takes communities to raise a child. But in place of healthy communities, too often we find neighborhoods deteriorating amidst the alienation, rootlessness, and despair of violent streets.

It takes schools to raise a child. But where there should be a shared sense of

common purpose among school, family, and community, too often we find a circle of blame. Parents blame the community for the child's problems. Communities blame the school. And the school, too frequently, blames both. Then it closes itself off in its time-bound world.

The finger pointing and evasions must come to an end—up and down the line from the federal government to the family and student. Although concrete recommendations are difficult to make, several ground rules point the way ahead.

**Government should focus on results, not red tape.** The sheer number of rules and regulations hamstringing schools from federal and state governments has grown beyond reason. Their cumulative effect is to handcuff schools.

All federal programs should follow the larger intent of the Clinton administration's legislation, *GOALS 2000: Educate America Act*. This bipartisan legislation puts the National Education Goals into statutory language. It promises to free local schools from regulation in favor of accountability. It focuses on results, not red tape.

The federal government should encourage local schools to use categorical programs to supplement *learning time* for target students. Too often these programs have defeated their own purpose: funds have been used for programs that replace the school's learning time. They should support after-school, weekend, and summer programs.

At the state level, the Commission applauds states such as Kentucky and Washington which have adopted comprehensive education reform efforts, most of which promise to (1) limit regulatory oversight in return for demonstrated results in the schools; (2) offer additional time for

teachers' professional development; and (3) provide sanctions and rewards for schools based on performance.

It is at the school district and local board level that we find the major possibilities for freeing schools of red tape in favor of accountability. A large number of promising experiments are underway around the country to free schools of burdensome district regulation. Many of these experiments revolve around time; many do not. We encourage school boards—through the local action plans suggested in Recommendation VII—to examine these experiments and adapt the most promising to their own needs.

### **Higher education needs to get involved.**

Colleges and universities, as institutions, have been bystanders for the most part in the school reform debate. It is time they got involved. They can help in at least four ways.

First, higher education already offers a model that holds learning fixed and makes time a variable. Students can earn a bachelor's degree in three, four, even eight years; the same is true of doctoral study.

Second, the school reform movement *cannot* succeed unless academic institutions honor the results of new standards and assessments. Admissions requirements should validate learning, not seat time.

Third, colleges and universities educating teachers must align their programs with the movement to higher standards. This will involve changing not only offerings in schools of education, but also the design of undergraduate programs in core disciplines.

Finally, a handful of colleges and universities across the country are struggling to reinvent local schools. There are 3,500 colleges and universities in the United States and there should be 3,500 examples. It is not necessary to operate a school or district or provide medical checkups and family counseling—although some academic institutions are doing each of these things. But it is necessary to do something.

**The business world should keep up the pressure.** Much of the impetus for school

reform, at the national, state, and local levels, has been generated by business leaders insisting that changes in the workplace require radically different kinds of school graduates. Corporate and small business leaders have also been actively supporting reform coalitions, applying corporate techniques to school operations, and creating a variety of one-on-one school partnerships in which individual firms work directly with individual classrooms, schools, or districts.

Now is no time for timidity in the school reform effort. Leaders cannot blow an uncertain trumpet. Business leaders must keep up the pressure for comprehensive reform to improve student achievement.

**Parents, students, and teachers must lead the way.** Finally, we want to speak directly to the people with the greatest stake in the learning enterprise—parents, grandparents, aunts, uncles, foster parents and guardians, and to teachers and students themselves.

*To parents, grandparents, relatives and guardians:* With your support for the agenda for reform outlined in this document, success is assured. Without it, we do not know how the agenda can be achieved.

You may worry that new academic standards will add to your children's stress. That is not our intent. In fact, that is why we insist that time be made a part of the standards discussion. Indeed, our hope is that schools will be more attractive, interesting, and lively places for both students and adults when time becomes the servant of learning. Schools should also be more hospitable to you, once teachers are released from the relentless treadmill of today's calendar and the academic day is more attuned to your family's needs.

We know that your aspirations for your children are unlimited, no matter your circumstances or the difficulties in which you find yourselves. You can bring those aspirations within reach. We have little to offer other than the advice of experts. But their words bear repeating. Play with your children every day. Read to them every night. Make sure they see a doctor regularly. Take an active interest in the day-to-day activities of the school and the community. Check

homework, turn off the television, and make sure that your teenagers are not working so long earning pocket money that they have no time for school. Above all, encourage your children.

What we ask, of course, takes time. But your reward will come as you watch your children become the kind of men and women you knew they could be.

*To teachers:* You are the inheritors of a tradition of service and scholarship stretching back through history. Your first obligation is to that inheritance.

If you accept minimal effort from students or colleagues or excuse shoddy performance, then you have fallen short, no matter how understandable your reasons. You cannot remain true to the tradition you bear by acquiescing to the social promotion of students who are not prepared for the next step.

Only parents and students have a greater stake than you in this debate. Clearly our proposals will make a huge difference in your working life. The nature of the change, however, remains to be worked out with your participation. This Commission consciously avoided specifying a precise number of days in the school year, or hours in the school day, because we believe those issues must be worked out district by district and school by school.

Although we insist on breaking down the prison walls, it is not our intention to impose new demands on you without providing the support we know you need. It is up to you and your colleagues to put muscle and sinew on the reform framework outlined in this document. We think you will—not because we recommend it, but because you know it is right. You best understand that we are correct when we say learning is a prisoner of time.

Your satisfaction will lie in a more professional working environment. It will also be found in a lifetime following the progress of adults who achieved their full potential because of what you were able to do with and for them in the classroom.

*Last, we say to students:* We know that in the midst of today's pressures, your classes,

school, and homework often appear to be distractions from the business of growing up. We were once in your shoes. We, however, were lucky. When we left school, we expected to face a promising future, and for the most part our expectations were met.

You, too, can make good if you are prepared to work at it. You may think your academic success depends on whether or not you are "smart." But academic progress, as our international friends understand, depends on hard work and perseverance. It is your job to learn, to become the "worker" in your own education. You must understand that learning is never a passive activity; it is always active. Your success in school depends primarily on your own diligence. The returns on your efforts will be many, including the satisfaction of knowing that adults who complained about your generation were wrong—and you proved them wrong.

### FINANCING: DOLLARS, SCHOLARS, AND TIME

"Time is money," runs an old adage. There is no doubt that the recommendations we have advanced will cost money. We suggest it will be money well spent. In fact, a leading economist suggests that when we consider the costs of day care, the effects of summer learning loss, and the ultimate benefits of increased learning time, we can view any initial costs for such time as an investment with more promising pay-offs than most other uses of tax dollars. Where are the funds to come from in a period in which the federal domestic budget is frozen for the next several years, state revenues and outlays are under pressure, and local taxpayers resist higher taxes? The picture in public finance is not optimistic.

But neither is it a disaster. The United States is the wealthiest country in the history of the world. American schools are already handsomely supported by international standards. In constant, inflation-adjusted dollars, real spending on education in America increased 200 percent between 1959 and 1989-90.

We are convinced the American people will support these recommendations if they believe high quality education will accompany the changes and if educators bring common sense and ingenuity to the table.

The Commission believes priorities need to be set in education funding: all current expenditures should be reallocated to support the academic activities of the school. Education dollars should be spent on academics first and foremost. Budgets should distinguish between education and non-education activities.

At the same time, extending the envelope of the school day and year opens up the possibility of using funds in different ways. Federal compensatory funds, as we have suggested, can be employed to extend the school day and provide summer opportunities for those who require more time. Extended-day and other community services can be supported by other units of

state and local government. Moreover, the costs of extended services can be partially met by modest fees, based on parental ability to pay. And costs can be controlled by carefully phasing in new services, using student-teachers and noncertified personnel, and making greater use of full-time staff on flexible schedules.

It should be noted that across the United States the ratio of adults to enrolled students exceeds one to ten, according to data from the National Center for Education Statistics.<sup>3</sup> Surely it is possible to restructure adult use of time so that more teachers and administrators actually encounter students on a daily basis in the classroom, face to face. This does not require additional money.

Throughout this document, the Commission has asked the question: Is there a better way? As these models demonstrate, visionary school leaders in districts of all kinds—large and small, wealthy and poor, urban and rural—are already supporting many of the reforms we advocate. These districts are financing the kinds of changes needed today to anticipate the challenges the future will place before us.

Several things are clear from these models. Many different alternative calendars do exist, most attuned to local needs. Parental choice is a significant feature of most of these models. Fees for additional services are charged in many of these alternatives. Above all, communities of all kinds face a powerful, pent-up demand for new and different educational services.

In the final analysis, the true costs depend on what we think is important. If we value learning, the cost of "doing it right the first time" is less than the expense involved in "doing it wrong" and having to do it over again. As the American business community now understands full well, in the end quality costs less.

### FACING THE TEST OF TIME

Eleven years ago, a small booklet, *A Nation at Risk*, launched one of the great reform movements in American public life. It changed the terms of the education debate by urging education leaders to look beyond the details of schooling to three big issues: time, content, and expectations.

The response was dramatic and sustained. Expectations for student performance have been raised markedly—the public expects more, and so, too, do teachers and principals. Content standards are in the midst of drastic revision that holds out the promise of a world-class education for all.

But learning remains a prisoner of time. The description of the problem contained in *A Nation at Risk* is still true: “Compared to other nations, American students spend less time on school work; and time spent in the classroom and on homework is often used ineffectively.” For practical people, reforming expectations and content were thought to be easier problems to solve; time, a more difficult issue to tackle. But in terms of learning, time as an elastic resource is the main road to excellence.

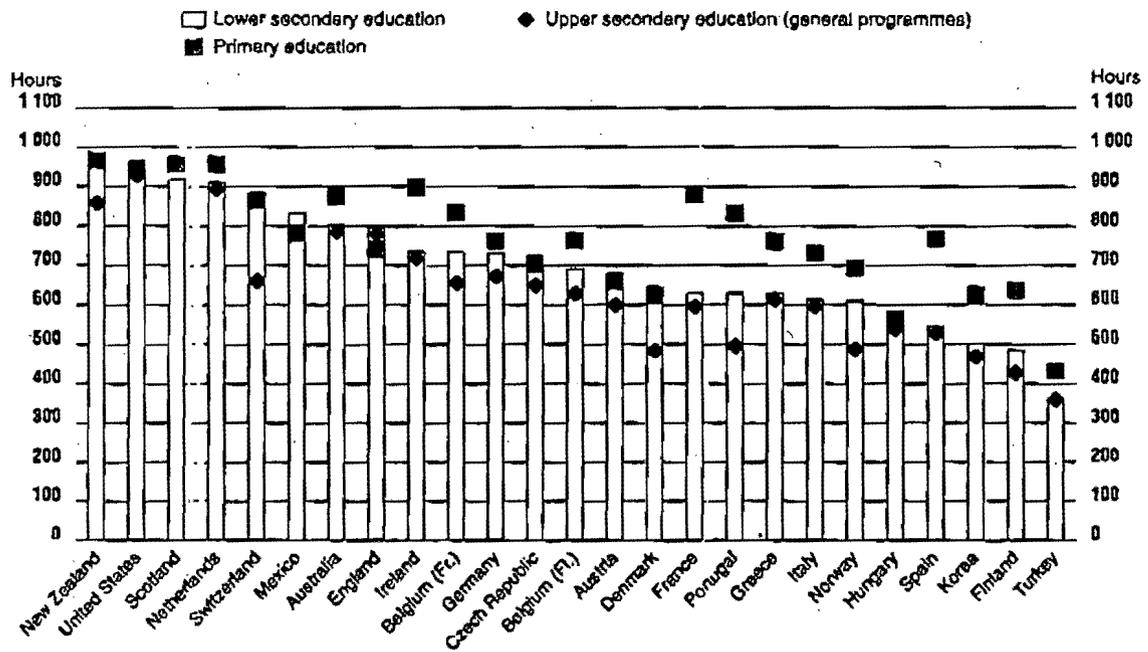
Americans can justifiably take pride in all they have accomplished and are trying to accomplish through their schools. We have built a remarkable system of public education through twelfth grade, universally available to all. We have provided access to postsecondary education at levels matched by no other nation. We have led the world in attending to the needs of the disadvantaged, the dispossessed, and the disabled. We are in the midst of the longest, sustained education reform movement since the common school was created in the 19th century.

Today a new challenge beckons: we must face the test of time. “Time,” said Aeschylus 25 centuries ago, “teaches all things.” Now at last we must learn its lesson about education: American students will have their best chance at success when they are no longer serving time, but when time is serving them.

# TEACHING TIME

- Teaching time affects the amount of time available for planning and other professional activities, and is related to motivational aspects of the teaching profession.
- In both primary and secondary education, countries vary widely in the number of teaching hours per year for the average public school teacher. Teachers in some countries spend twice as much time teaching than teachers in other countries.
- In primary education teaching hours are typically higher than in secondary education.

Chart D3.1. Statutory number of teaching hours per year in public institutions, by level of education (1998)



Countries are ranked in descending order of the number of teaching hours in lower secondary schools.  
 Source: OECD.

D3

## ■ POLICY CONTEXT

Together with factors such as student/teaching staff ratios, students' hours of instruction and teachers' salaries, the amount of time teachers spend teaching influences the financial resources which have to be devoted to education. At the same time, teaching time is an important element of teachers' working conditions. It affects the amount of time available for planning and other professional activities, and is also related to motivational aspects of the teaching profession. The proportion of working time associated with teaching can be interpreted as a measure of teachers' workload. It provides information on the amount of time available for other activities, such as lesson preparation, correction, in-service training and staff meetings.

*This indicator shows the number of hours per year a full-time classroom teacher is required to spend teaching and highlights the relationship between teaching time and working time across OECD countries.*

## ■ EVIDENCE AND EXPLANATIONS

In both primary and secondary education, countries vary in the number of teaching hours per year required of the average public school teacher. In primary education teaching hours are usually higher than in secondary education.

In most countries, teaching hours are higher in primary education than in lower secondary and upper secondary education. The average number of teaching hours in primary education is 788, in contrast to 700 hours in lower secondary education. In upper secondary education the mean is lower still, 642 hours in general programmes and 678 hours in vocational programmes.

In primary education the number of teaching hours per year ranges from 583 in Hungary to 985 in New Zealand. In lower secondary schools, it ranges from 502 in Korea to 985 in New Zealand. In upper secondary education, hours range in general programmes from 428 hours in Finland to 943 hours in the United States, and in vocational programmes between 497 in Korea and 1 008 in Belgium (French Community).

*Teachers in some countries spend up to twice as much time teaching as teachers in other countries.*

**D3**

In Hungary and Turkey the number of teaching hours per year is comparatively low at all levels of education reported (around 580 hours or less), while in the Netherlands, New Zealand and the United States it is high (900 hours or more). In Finland and Korea teaching hours are low in secondary education (both at the lower secondary and the upper secondary level). In Belgium teaching hours are high in upper secondary vocational education (around 950 hours or more) (see Table D3.1).

*At all levels of education, teaching hours in Hungary and Turkey are comparatively low.*

Although in some countries a teacher's school day is spent almost exclusively teaching, in other countries, teachers are also formally required to spend some time every day/week working on non-teaching activities. This non-teaching time can be devoted to activities such as preparation of lessons, correction of assignments and tests, professional development, support of students, and meetings with parents.

*In most countries, formal working hours exceed teaching time.*

The structure of teachers' working time varies widely between countries, making it difficult to establish an internationally comparable measure of working time. In some countries, teachers are required to be at school for a mandatory number of hours each week, while in others they are simply expected to work a specific amount of time, whether at home or at school. In

*While statutory teaching time is relatively easy to measure, total working time is not.*

**D3 Teaching Time**

*In some countries teachers are required to work a specific number of hours per week, at home or at school, in order to earn their full-time salary...*

*... while in other countries teachers are required to be at school for a specific number of hours each week, both for teaching and for non-teaching activities.*

*In Belgium, Finland, France, Germany and Portugal teachers are required to be at school only for the hours that they are scheduled to teach.*

*Variation in the amount of time that 8th-grade mathematics teachers are required to spend on teaching and on non-teaching activities.*

*The amount of time formally required for non-teaching activities varies more between countries than teaching time.*

order to earn a full time salary. While teachers' working time is not directly comparable across these organisational models, data on working time can give an indication of the level of effort formally required of teachers in different countries.

In the Czech Republic, Denmark, Greece, Hungary, Korea, the Netherlands, Norway, Spain and Sweden full-time teachers are required to work a specific number of hours per week, (including both teaching activities and non-teaching activities) in order to earn their full-time salary. The working hours may be spent at school or outside school, although in Spain at least 30 of the 37.5 hours must be spent at school according to formal policy. Specified working hours per week are lowest in Denmark, Spain and Greece (around 37 hours) and highest in Korea and Norway (44 hours). But in Norway the relatively high number of working hours per week is combined with a relatively low number of working weeks.

In Australia and Scotland full-time teachers are required to spend a specific number of working hours at school per week (38 and 27.5 hours respectively). In Ireland teachers at ISCED levels 0 and 1 are required to be at school for the whole school day (5 hours and 40 minutes per day) including break time and the lunch period when they supervise the pupils. In Mexico and New Zealand it is only at ISCED level 1 that full-time teachers are required to spend a specific number of working hours (both 25 hours) per week at school. In lower secondary education and upper secondary general education teachers in New Zealand can set their own working hours on the basis of the number of classes that they are assigned to teach.

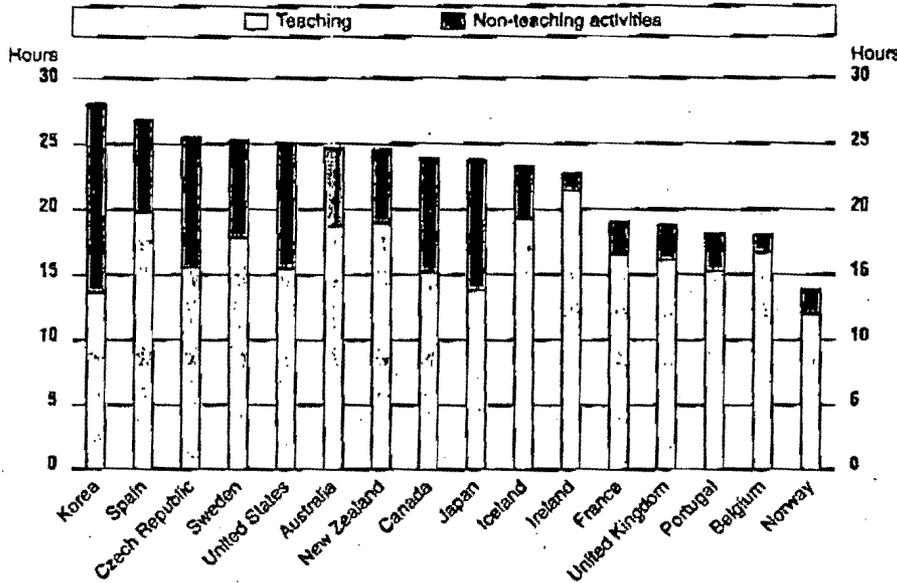
In Belgium, Finland, France, Germany and Portugal full-time teachers are only required to be at school for the specified number of teaching hours. In Ireland, this is also the case for teachers at ISCED level 2 and 3. There is no requirement as to how much time they must spend on non-teaching activities each week. In Germany there is no mandatory or formal amount of time that teachers must spend working, but there is a customary amount of time (38.5 or 40 hours) worked by all civil servants. In the United States, teachers' working hours are set at the local or school level. The average number of working hours per week is 33.6 hours.

An alternative source of information on teaching and working comes from a survey of teachers. In the Third International Mathematics and Science Study (TIMSS), the mathematics teachers of 8th-grade students were asked about the amount of time that they are formally required to spend on teaching and on non-teaching activities. In most OECD countries participating in TIMSS, the mathematics teachers of 8th-grade students reported teaching, on average, between 15 and 18 hours per week. Teachers in Korea and Norway taught less (13.6 and 12 hours, respectively) while teachers in Ireland and the Netherlands taught more than 20 hours per week.

Variation between countries in the total amount of time that teachers are formally expected to work each week is primarily determined by the amount of time prescribed for non-teaching activities. Among the 17 countries for which data are available from TIMSS, the total scheduled time of 8th-grade mathematics teachers varies between 13 hours in Hungary and 28 hours in Korea. In five countries, teachers spend more than 25 hours in school (the Czech Republic, Korea, Spain, Sweden and the United States).

Teaching Time

Chart D3.2. Number of hours in the school week that 8th-grade mathematics teachers have formally scheduled for teaching and non-teaching activities (1995)



The TIMSS survey shows that in general teachers also spend a significant amount of time working in addition to their formally scheduled hours, e.g. attending conferences or correcting of students' work, which is not represented in this chart.

Source: International Association for the Evaluation of Educational Achievement (IEA)/TIMSS. For notes see Annex 3.

**D3**

There is more uniformity between countries in the number of hours that mathematics teachers have scheduled to teach than in the amount of time they are formally required to spend on non-teaching activities. In half of the countries, mathematics teachers have formally scheduled less than four hours per week, on average, on non-teaching activities, while in eight countries this amounts to seven hours or more.

In Belgium, Ireland and Norway, the teachers of 8th-grade mathematics students reported that they spent less than two hours of formally scheduled time, on average, on non-teaching activities, while in the Czech Republic, Hungary, Japan, Korea and the United States teachers spent about ten hours or more. The latter countries, along with Canada and Sweden, tend to have the largest proportion of formally scheduled time devoted to curriculum planning.

The teachers of 8th-grade mathematics students in some countries spend 10 hours per week or more on non-teaching activities.

In most countries, however, non-teaching time is devoted to supervision of students. The amount of time that teachers of 8th-grade mathematics students spend on student supervision is primarily affected by two factors: 1) the degree to which other school staff monitor students during non-teaching time, 2) the degree to which students are required to be at school during non-teaching time.

Formally scheduled non-teaching time is primarily devoted to supervision of students.

**D3 Teaching Time****DEFINITIONS***Teaching time*

Teaching time is defined as the total number of hours per year for which a full-time classroom teacher is formally responsible for teaching a group or class of students. Periods of time formally allowed for breaks between lessons or groups of lessons are excluded. Deviations from this definition are reported in Annex 3.

*Working time*

Working time refers to the normal working hours of a full-time teacher. It varies widely across OECD countries. According to the formal policy in a given country working time can refer:

- only to the time directly associated with teaching (and other curricular activities for students such as assignments and tests, but excluding annual examinations);
- or to time directly associated with teaching and to hours devoted to other activities related to teaching, such as lesson preparation, counselling of students, correction of assignments and tests, professional development, meetings with parents, staff meetings and general school tasks.

It does not include paid overtime. The different perceptions of working time are reported in Annex 3.

*Data are from the 1999 OECD/INES survey on Teachers and the Curriculum and refer to the school year 1997/98. They are reported in accordance with formal policies for public institutions.*

Teaching hours per year are calculated on the basis of teaching hours per day multiplied by the number of teaching days per year, or on the basis of teaching hours per week multiplied by the number of weeks per year when schools are open for teaching. The hours per year that are accounted for by days when schools are closed for festivities and celebrations are excluded.

If teaching hours are not formally prescribed at the central or regional level in a particular country, survey data on the amount of time that teachers actually spend teaching has been substituted (e.g., in the United States). See Annex 3 for a discussion of data sources.

## Teaching Time

Table D3.1. Number of teaching hours per year in public institutions by level of education (1998)

	Primary education (ISCED 1)	Lower secondary education (ISCED 2)	Upper secondary education (ISCED 3) general programmes	Upper secondary education (ISCED 3) vocational programmes
Australia	803	802	802	m
Austria	678	651	616	629
Belgium (Fl.)	781	691	644	947
Belgium (Fr.)	854	733	671	1 008
Czech Republic	724	695	666	666
Denmark	644	644	500	680
England	760	798	798	m
Finland	656	485	428	m
France	899	629	611	611
Germany	781	732	688	696
Greece	780	629	629	629
Hungary	583	555	555	555
Ireland	915	735	735	m
Italy	748	612	612	612
Korea	644	502	486	497
Mexico	800	832	m	m
Netherlands	975	910	910	875
Norway	713	611	505	589
New Zealand	985	985	874	a
Portugal	850	629	512	512
Scotland	975	917	x	a
Spain	788	545	545	545
Switzerland	883	860	676	726
Turkey	432	360	360	486
United States	958	964	943	943
<b>Country mean</b>	<b>788</b>	<b>700</b>	<b>642</b>	<b>678</b>

Source: OECD Education Database. See Annex 3 for notes.

D3

**D3 Teaching Time**

Table D3.2. How working time is organised (1998)

1. Full-time teachers work a specified number of hours per week to earn their full-time salary, including non-teaching activities.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
Czech Republic	42.5	42.5	42.5	42.5	42.5
Denmark	37.0	37.0	37.0	37.0	
Greece	37.5	37.5	37.5	37.5	37.5
Hungary	40.0	40.0	40.0	40.0	40.0
Korea		44.0	44.0	44.0	44.0
Netherlands	38.0	38.0	38.0	38.0	38.0
Norway		44.0	44.0	44.0	44.0
Spain	37.5	37.5	37.5	37.5	37.5
Sweden		40.0	40.0	40.0	40.0
2. Full-time teachers are required to be at school for a specified number of hours per week to earn their full-time salary, including non-teaching activities.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
Australia		38.0	38.0	38.0	
England		33.3	33.3	33.3	
Ireland	28.3	28.3			
Mexico	20.0	25.0			
New Zealand		25.0			
Scotland		27.5	27.5		
3. Full-time teachers are only required to be at school for a specified number of teaching hours. There is no requirement for how much time must be spent on non-instructional activities.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
Austria			m	m	m
Belgium (Fl.)	21.7	21.7	19.2	17.9	26.3
Belgium (Fr.)	21.7	21.7	19.2	17.9	26.3
Finland	17.3	17.3	17.3	17.3	
France	27.0	27.0	18.4	18.4	18.4
Ireland			22.0	22.0	
Italy	a	a	a	a	a
Portugal	30.0	28.0	31.3	31.6	31.6
4. There is no mandatory or formal amount of time that teachers must spend working, but there is a customary amount of time that all civil servants work.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
Australia	37.5				
Germany	38.5	38.5	38.5	38.5	38.5
5. Teachers' working hours are set at the local or school level. It is possible to calculate an average across these decision-making units.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
New Zealand	22.5				
United States		33.6	33.6	33.6	33.6
6. Teachers set their own working hours, based on the number of classes they are assigned to teach.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
New Zealand			25.0	26.0	
7. Other.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
Mexico			25.0		

Source: OECD Education Database. See Annex 3 for notes.

## Teaching Time

Table D3.3. Number of hours in the school week that 8th-grade students' mathematics teachers have formally scheduled for teaching and non-teaching activities (1995)

	Teaching activities	Non-teaching activities						Total hours
		Student supervision	Student counselling	Administrative duties	Individual curriculum planning	Co-operative curriculum planning	Non-student contact time	
Australia	18.7	2.8	0.3	1.1	0.5	0.1	1.3	24.7
Austria	r 16.4	m	m	m	m	m	m	m
Belgium	r 16.7	r 0.4	0.3	0.3	r 0.1	0.0	r 0.3	18.0
Canada	15.2	3.4	0.7	0.7	2.0	0.6	1.4	24.0
Czech Republic	15.5	1.5	0.6	1.6	4.7	0.3	1.3	25.5
Denmark	15.7	m	m	m	m	m	m	m
France	16.5	s 0.1	s 0.6	s 0.0	s 0.0	s 0.1	s 1.7	19.0
Hungary	m	1.8	2.6	1.6	4.8	m	2.2	12.9
Iceland	r 19.3	r 0.8	s 0.4	r 1.3	r 0.4	r 0.3	r 0.8	23.3
Ireland	21.4	0.5	0.1	0.5	0.0	0.0	0.2	22.7
Japan	13.8	1.9	1.6	1.9	2.3	0.3	1.9	23.8
Korea	13.6	4.9	2.2	3.0	2.8	0.4	1.2	28.0
Netherlands	20.5	m	m	m	m	m	m	m
New Zealand	19.0	2.0	0.3	1.3	0.5	0.1	1.5	24.6
Norway	12.0	0.8	r 0.4	r 0.6	m	m	m	13.8
Portugal	15.2	0.7	0.7	0.5	0.2	0.2	0.6	18.2
Spain	19.8	1.4	1.0	1.4	0.8	0.8	1.7	26.8
Sweden	17.8	2.0	0.1	0.9	2.4	0.9	1.1	25.3
Switzerland	17.6	m	m	m	m	m	m	m
United Kingdom <sup>1</sup>	s 16.1	s 0.2	s 0.2	s 0.5	s 0.1	s 0.1	s 1.7	18.9
United States	15.5	4.8	0.4	0.3	2.0	1.1	0.9	25.1

Note: An "r" indicates that data for mathematics teachers are only available for 70-84% of 8th-grade students.

An "s" indicates that data for mathematics teachers are only available for 50-69% of 8th-grade students.

1. Only England.

Source: International Association for the Evaluation of Educational Achievement (IEA)/TIMSS.

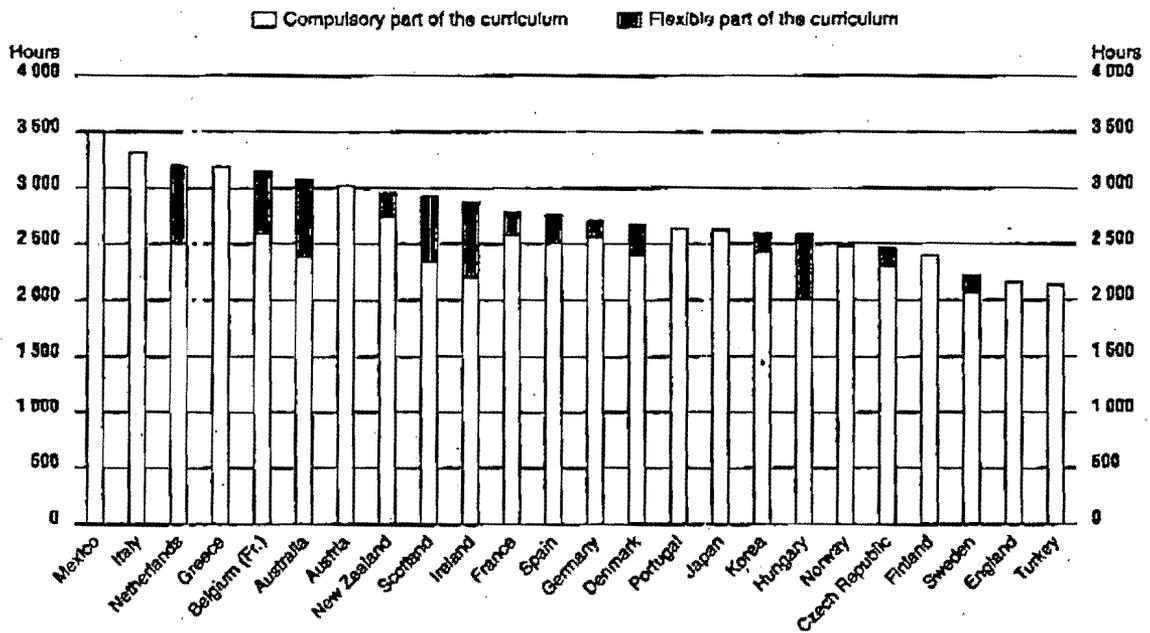
**D3**

## TOTAL INTENDED INSTRUCTION TIME FOR PUPILS IN LOWER SECONDARY EDUCATION

- Intended instruction time refers to the number of full hours of instruction during the three-year-period during which pupils are aged 12 to 14.
- Total intended instruction time varies considerably across countries. It is longest in Italy and Mexico (3 315 and 3 500 hours respectively), and shortest in Turkey and England (2 136 and 2 160 hours respectively).
- The difference between Mexico and Turkey (1 364 hours) corresponds to more than a full year of instruction in Mexico.

Chart D4.1. Intended instruction time between the ages of 12 and 14 divided into compulsory and flexible parts of the curriculum (1998)

**D4**



Countries are ranked in descending order of the total intended instruction time between the ages of 12 and 14.  
Source: OECD.

**Total Intended Instruction Time for Pupils in Lower Secondary Education**

**■ POLICY CONTEXT**

Instruction time is the main resource invested in the process of education. Policy-makers seeking to improve educational outcomes often seek to increase the amount of time for which students are engaged in learning activities. However tight budgets and strong teachers' unions may restrict the changes that can be achieved by policy-makers.

The instruction time that can be devoted to each student is closely related to factors such as class size, teaching time (Indicator D3) and student/teaching staff ratios (Indicator B7). The optimal balance between these factors may vary for different subject areas and levels of education.

The indicator will compare intended instruction time for students, both compulsory time (i.e. core subjects that all students must take) and flexible time (when there is a choice of subject-matter). The total, aggregate, number of intended hours of instruction for all three grades in which the majority of pupils are 12, 13 and 14 years of age is presented, as well as the breakdown of intended instruction time by major subject areas. The indicator will also discuss the degree to which the "intended curriculum" applies to all streams in which 14-year-old students can be enrolled.

*This indicator shows the total number of intended hours of instruction for all three grades in which the majority of pupils are 12, 13 and 14 years of age.*

**■ EVIDENCE AND EXPLANATIONS**

Intended instruction time refers to the number of hours during which pupils aged 12, 13 and 14 years are given instruction over three years in both the compulsory and the flexible parts of the curriculum. In many cases, the actual amount of time that students spend in instruction does not fully correspond to the intended instruction time. Time may be lost because of a lack of qualified substitutes for absent teachers or student absences. School closures for examinations, teachers' meetings or inclement weather may also reduce actual instruction time. Furthermore, intended instruction time can also vary from year to year. Changes to the curriculum or to the required number of teaching hours and variability in the length of holiday periods all directly increase or reduce intended instruction time. In some countries, there is even variation between regions or between different types of school.

*The total, aggregate, number of intended hours of instruction between the ages of 12 and 14 is calculated by multiplying the total intended number of lessons in the three years by the duration of one lesson.*

**D4**

Total intended instruction time for pupils aged 12 to 14-years inclusive, aggregated over three years, ranges from 2 136 hours in Turkey to 3 500 hours in Mexico. The mean over three years is 2 768 hours.

Among OECD countries, intended instruction time in mathematics and science over three years varies considerably from 550 hours or less in Finland, Norway and Turkey, to around 890 hours in Austria and New Zealand, and 1 167 hours in Mexico. The mean intended instruction time is 670 hours (Table D4.1b).

*Intended instruction time in mathematics and science over 3 years ranges from 504 hours to 1 167 hours among OECD countries.*

On average across OECD countries, about 39 per cent of instruction time is devoted to three basic subject areas: reading and writing in the mother tongue (15 per cent), mathematics (13 per cent) and science (11 per cent). The next highest percentages of instruction time are devoted to the modern foreign languages (11 per cent) and social studies (12 per cent). The smallest percentages of instruction time are devoted to vocational skills (2 per cent), religion (3 per cent) and technology (5 per cent). Arts and physical education receive 8 per cent each, and other subjects 5 per cent.

*Across OECD countries, reading and writing in the mother tongue, mathematics, and science comprise 39 per cent of the total intended instruction time.*

**D4 Total Intended Instruction Time for Pupils in Lower Secondary Education**

*Countries vary in the proportion of instruction time devoted to different subject areas.*

In Denmark, Ireland, Italy and Sweden at least 20 per cent of Intended Instruction time is devoted to reading and writing in the mother tongue (In Ireland time devoted to teaching Irish and English is included), whereas in the Netherlands only 10 per cent of instruction time is devoted to this subject. In Germany 21 per cent of the instruction time is devoted to modern foreign languages, while in Australia, New Zealand and the United States this figure is only 6, 4 and 7 per cent, respectively.

In Mexico, the greatest proportion of instruction time is dedicated to science and social studies (19 and 18 per cent, respectively). In the Czech Republic, Ireland and Portugal social studies also receive 17 per cent or more of total instruction time, more than the OECD mean for social studies (12 per cent).

In 10 out of 26 OECD countries for which comparable data are available, 10 per cent or more of total intended instruction time is regarded as flexible. In the other countries, the time allotted to the different sections of the curriculum in lower secondary education is to a large extent prescribed.

Although the amount of time that students spend studying different subjects in lower secondary education is prescribed in most countries, some have a sizeable degree of flexibility.

In Austria, England, Finland, Greece, Italy, Mexico, Norway, Portugal, Turkey and the United States, the entire curriculum is prescribed (although students may have limited choice within broad prescriptions as in the United States, for example). In other countries a substantial part is flexible: Belgium (Flemish Community) (30 per cent), Australia, Ireland (both 23 per cent), Hungary, the Netherlands (22 per cent) and Scotland (20 per cent). This flexible part mainly comprises optional subjects (see Annex 3 for details). In some countries, curricula vary between regions or types of school.

*In most countries, each of the streams in which a 14-year-old student can be enrolled has a prescribed curriculum.*

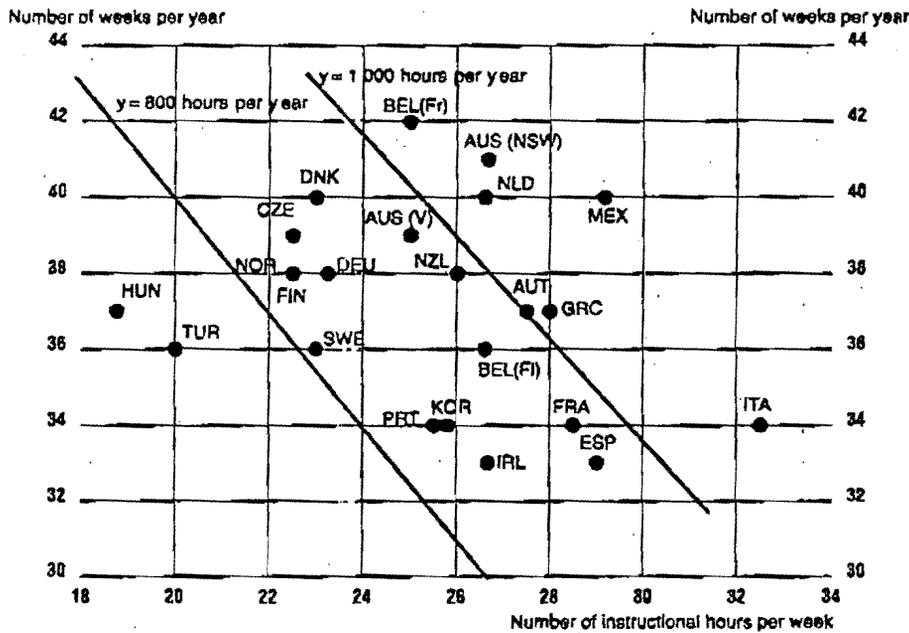
In 18 out of 24 countries, there is a prescribed curriculum for each of the streams in which a 14-year-old student may be enrolled (see Annex 3 for details). In the other six countries there is some flexibility. In Austria, the data on intended instruction time apply to two-thirds of all students. Furthermore, Austrian schools are entitled to change the curriculum within a given framework. In the Flemish Community of Belgium and France, the data refer to general programmes. The intended instruction time for pre-vocational and vocational programmes is slightly different. In the Netherlands, one group of 14-year-olds in pre-vocational programmes have the option of spending more hours on vocational subjects, while others may learn an extra modern or classical language. In the Czech Republic, there is a range of educational programmes. In Italy, the total number of intended hours of instruction differs: 75 per cent of schools teach for 30 hours per week, while the other 25 per cent teach for 40 hours per week.

**Organisation of Instruction time**

It remains an open research question whether students learn more by attending school for a greater number of "shorter" school weeks or by attending for longer hours over a smaller number of weeks. Some research has shown that

## Total Intended Instruction Time for Pupils in Lower Secondary Education

Chart D4.2. Number of instructional hours per week and number of instructional weeks per year



Note: For more details concerning the year of the data collection for each country, see sources in Annex 3.  
Source: OECD.

Some research has shown that students can forget a significant amount of material over long school holidays. More weeks in the school year can be more costly, however, than more hours per week – although the latter can take away from teachers' preparation time.

**D4.1**

students can forget a significant amount of material over long school holidays. More weeks in the school year can be more costly, however, than more hours per week – although the latter can detract from teachers' preparation time.

The average number of hours of instruction provided per school week ranges from around 20 in Hungary and Turkey to 28 hours or more in France, Greece, Italy and Mexico (Chart D4.2). On the other hand, the length of the school year can range from around 34 weeks or less in France, Ireland, Italy, Korea, Portugal and Spain to 40 weeks or more in Australia, Denmark, Mexico and the Netherlands.

#### DEFINITIONS

Intended instruction time refers to the number of hours per year for which pupils receive instruction in both the compulsory and the flexible part of the curriculum. Compulsory subjects are to be taught by each school and to be attended by each student. Optional subjects form the flexible part of the curriculum. Annex 3 gives more information on instruction time and curriculum in each country.

The total number of intended hours of instruction per year was calculated by multiplying the total number of classroom sessions per year by the duration of one session.

Data on instruction time are from the 1999 OECD/INES survey on Teachers and the Curriculum and refer to the school year 1997/98.

**D4 Total Intended Instruction Time for Pupils in Lower Secondary Education**

*The prescribed curriculum is the subject content defined by the government or the education system.*

The prescribed curriculum is the subject content defined by the government or the education system. The prescribed curriculum is embodied in textbooks, in curriculum guides, in the content of examinations, and in policies, regulations, and other official statements issued to direct the education system. Data for the United Kingdom and the United States, however, are based on sample survey data and reflect the curriculum as it is implemented rather than as it is prescribed.

The classification of subject areas used in this indicator is explained in Annex 3.

The organisation of instruction time at ISCED 2 for 14 year-olds refers to the formal number of class hours (1 hour = 60 minutes) per year for instructional activities for students at ISCED level 2. The reference year is the school year 1997/98. If a country has no formal policy, the number of hours is estimated from survey data.

Instruction time includes only time that is compulsory. It does not include time for non-compulsory or quasi-compulsory subjects.

Hours lost when schools are closed for festivities and celebrations, such as national holidays, are excluded.

## Total Intended Instruction Time for Pupils in Lower Secondary Education

Table D4.1a. Intended instruction time in hours per year for students aged 12 to 14 (1998)

	Ages			Total
	12	13	14	
Australia	1 022	1 027	1 027	3 076
Austria	987	987	1 048	3 022
Belgium (Fl.)	m	1 067	1 067	m
Belgium (Fr.)	1 048	1 048	1 048	3 145
Czech Republic	782	811	869	2 461
Denmark	840	900	930	2 670
England	720	720	720	2 160
Finland	686	855	855	2 396
France	833	975	975	2 783
Germany	860	921	921	2 702
Greece	1 064	1 064	1 064	3 192
Hungary	780	902	902	2 584
Ireland	957	957	957	2 872
Italy	1 105	1 105	1 105	3 315
Japan	875	875	875	2 625
Korea	867	867	867	2 601
Mexico	1 167	1 167	1 167	3 500
Netherlands	1 067	1 067	1 067	3 200
New Zealand	985	988	988	2 961
Norway	770	855	855	2 480
Portugal	878	878	878	2 635
Scotland	975	975	975	2 925
Spain	851	937	957	2 763
Sweden	741	741	741	2 222
Turkey	720	720	696	2 136
United States	m	m	980	m
<b>Country mean</b>	<b>899</b>	<b>937</b>	<b>944</b>	<b>2 768</b>

Source: OECD Education Database. See Annex 3 for notes.

Table D4.1b. Intended instruction time for mathematics and science in hours per year for students aged 12 to 14 (1998)

	Ages			Total
	12	13	14	
Australia	247	232	232	711
Austria	247	278	370	894
Belgium (Fl.)	m	167	167	m
Belgium (Fr.)	185	216	247	648
Czech Republic	203	203	261	666
Denmark	210	240	240	690
England	174	178	217	569
Finland	162	177	177	516
France	208	257	257	722
Germany	198	229	229	656
Greece	182	213	274	669
Hungary	194	222	250	666
Ireland	200	200	200	601
Italy	221	221	221	663
Japan	175	204	223	603
Korea	204	204	204	612
Mexico	367	433	367	1 167
Netherlands	200	200	200	600
New Zealand	320	240	320	880
Norway	171	200	171	542
Portugal	227	312	198	737
Scotland	195	195	195	585
Spain	224	198	198	620
Sweden	189	189	189	567
Turkey	168	168	168	504
United States	m	m	295	m
<b>Country mean</b>	<b>211</b>	<b>223</b>	<b>233</b>	<b>670</b>

Source: OECD Education Database. See Annex 3 for notes.

D4

**D4 Total Intended Instruction Time for Pupils in Lower Secondary Education****Table D4.2. Instruction time per subject as a percentage of total intended instruction time for students aged 12 to 14 (1998)**

	Reading and writing mother tongue	Mathematics	Science	Social studies	Modern foreign languages	Technology	Arts	Physical education	Religion	Vocational skills	Other	Total compulsory part	Flexible part
Australia	13	13	10	10	6	8	8	7	n	n	3	77	23
Austria	12	15	14	12	10	6	12	11	6	n	n	100	n
Belgium (Fl.)	13	13	3	6	14	6	3	6	6	n	n	70	30
Belgium (Fr.)	15	14	7	11	12	2	2	8	6	n	7	82	18
Czech Republic	14	14	13	18	11	n	9	7	n	4	5	94	6
Denmark	20	13	12	11	10	n	9	7	3	n	3	90	10
England	12	12	14	11	11	12	10	8	4	1	5	100	n
Finland	18	11	10	10	9	x	6	8	4	n	22	100	n
France	17	14	12	13	11	7	8	11	n	n	n	93	7
Germany	14	13	11	11	21	x	9	9	x	x	8	95	5
Greece	12	11	10	10	15	5	6	8	6	1	16	100	n
Hungary	13	13	13	10	10	n	6	6	n	3	3	78	22
Ireland	23	12	9	19	x	x	x	5	7	x	2	77	23
Italy	23	10	10	14	11	9	13	7	3	n	n	100	n
Japan	14	12	11	12	13	8	11	10	n	n	8	100	n
Korea	14	12	12	11	12	5	10	9	n	4	6	93	7
Mexico	14	14	19	18	9	9	6	6	n	3	3	100	n
Netherlands	10	10	8	11	14	5	7	9	n	n	3	78	22
New Zealand	18	16	14	14	4	8	4	11	n	5	n	93	7
Norway	16	13	9	11	16	n	8	10	7	n	10	100	n
Portugal	13	13	15	17	10	n	10	10	3	n	10	100	n
Scotland	10	10	10	10	10	10	10	5	5	n	n	80	20
Spain	19	12	11	11	8	5	14	9	x	n	2	90	10
Sweden	22	14	12	13	12	x	7	7	x	4	n	93	7
Turkey	17	13	10	7	13	n	3	3	7	10	17	99	n
United States	17	16	14	12	7	3	7	12	1	5	7	100	n
<b>Country mean</b>	<b>15</b>	<b>13</b>	<b>11</b>	<b>12</b>	<b>11</b>	<b>5</b>	<b>8</b>	<b>8</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>92</b>	<b>8</b>

Source: OECD Education Database. See Annex 3 for notes.



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# Education

## School Term Dates

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### 2000 School Terms

<p><b>AUSTRALIAN CAPITAL TERRITORY</b></p> <p>25 January to 7 April</p> <p>28 January to 14 April</p> <p>1 May to 30 June</p> <p>17 July to 8 September</p> <p>3 October to 19 December</p>	<p><b>VICTORIA</b></p> <p>25 January to 7 April</p> <p>26 April to 23 June</p> <p>10 July to 15 September</p> <p>2 October to 19 December</p>	<p><b>WESTERN AUSTRALIA</b></p> <p>1 February to 7 April</p> <p>26 April to 30 June</p> <p>17 July to 22 September</p> <p>9 October to 15 December</p>
<p><b>NEW SOUTH WALES</b></p> <p>28 January to 14 April</p> <p>1 May to 30 June</p> <p>17 July to 8 September</p> <p>3 October to 19 December</p>	<p><b>QUEENSLAND</b></p> <p>27 January to 20 April</p> <p>2 May to 30 June</p> <p>17 July to 15 September</p> <p>2 October to 15 December</p>	<p><b>TASMANIA</b></p> <p>15 February to 2 June</p> <p>19 June to 14 September</p> <p>2 October to 20 December</p>
<p><b>SOUTH AUSTRALIA</b></p> <p>31 January to 14 April</p>	<p><b>NORTH TERRITORY</b></p> <p>31 January to 7 April</p>	

$39 + (31 - 17)$   
 $39 + 14$   
 $53$   
 $28 + 19 + 30$   
 $19$   
 $30$   
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$14$   
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 $31$   
 $2$   
 $62 + 14 + 11$   
 $62$   
 $25$   
 $87$   
 $29$   
 $79$   
 $138$   
 $87$   
 $29$   
 $274$

1 May to 7 July	17 April to 23 June	
24 July to 15 September	24 July to 29 September	
3 October to 15 December	9 October to 15 December	

**2001 School Terms**

<b>AUSTRALIAN CAPITAL TERRITORY</b> 5 February to 12 April 30 April to 6 July 23 July to 28 September 15 October to 21 December	<b>VICTORIA</b> 30 January to 6 April 23 April to 29 June 16 July to 21 September 8 October to 21 December	<b>WESTERN AUSTRALIA</b> 5 February to 12 April 30 April to 6 July 23 July to 28 September 15 October to 20 December
<b>NEW SOUTH WALES</b> 29 January to 12 April 30 April to 6 July 23 July to 28 September 15 October to 20 December	<b>QUEENSLAND</b> 25 January to 12 April 23 April to 22 June 9 July to 21 September 8 October to 14 December	<b>TASMANIA</b> 15 February to 1 June 18 June to 7 September 24 September to 20 December
<b>SOUTH AUSTRALIA</b> 29 January to 12 April 30 April to 6 July 23 July to 28 September 15 October to 14 December	<b>NORTHERN TERRITORY</b> 29 January to 6 April 17 April to 22 June 23 July to 28 September 8 October to 14 December	

**2002 School Terms**

<p><b>AUSTRALIAN CAPITAL TERRITORY</b></p> <p>5 February to 12 April</p> <p>30 April to 6 July</p> <p>23 July to 28 September</p> <p>15 October to 21 December</p>	<p><b>VICTORIA</b></p> <p>30 January to 28 March</p> <p>15 April to 28 June</p> <p>15 July to 20 September</p> <p>7 October to 20 December</p>	<p><b>WESTERN AUSTRALIA</b></p> <p>4 February to 19 April</p> <p>6 May to 5 July</p> <p>22 July to 27 September</p> <p>14 October to 19 December</p>
<p><b>NEW SOUTH WALES</b></p> <p>29 January to 12 April</p> <p>29 April to 5 July</p> <p>22 July to 27 September</p> <p>14 October to 20 December</p>	<p><b>QUEENSLAND</b></p> <p>24 January to 28 March</p> <p>8 April to 21 June</p> <p>8 July to 20 September</p> <p>7 October to 13 December</p>	<p><b>TASMANIA</b></p> <p>14 February to 31 May</p> <p>17 June to 6 September</p> <p>23 September to 19 December</p>
<p><b>SOUTH AUSTRALIA</b></p> <p><b>to be announced</b></p>	<p><b>NORTHERN TERRITORY</b></p> <p>28 January to 5 April</p> <p>15 April to 21 June</p> <p>22 July to 27 September</p> <p>7 October to 13 December</p>	

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## LESSONS FROM ABROAD

**I**nternational comparisons of education are difficult. Cultural factors influence performance and school systems differ. Despite such problems, international comparisons are not impossible and a great deal can be learned from examining schooling abroad. In fact, unflattering comparisons of the academic performance of American students with those from other lands spurred attempts at school improvement in the United States throughout the 1980s.

From its review of other nations, the Commission draws several conclusions:

- Students in other post-industrial democracies receive twice as much instruction in core academic areas during high school.
- Schools abroad protect academic time by distinguishing between the “academic day” and the “school day.”
- Many of our economic competitors supplement formal education with significant out-of-school learning time.
- School performance abroad has consequences and is closely related to opportunities for employment and further education.
- Teachers in other countries enjoy freedom and respect as professionals.

In short, education abroad is built around high expectations. Schools hold themselves and the adults and students in them to high standards; in consequence they enjoy high levels of support from parents and the community. As the Commission observed first-hand, schools overseas reflect a cultural passion for learning.

### TWICE AS MUCH CORE INSTRUCTION

Recent comparisons of the number of annual “instructional hours” in different countries indicate that Americans rank in the top half of the nine countries examined. By the standard of time as an instructional resource, American education measures up well.

This standard, however, provides false comfort. As the Commission saw in Germany and Japan, learning is serious business abroad. “Academic time” is rarely touched. Distinctions are made between the academic day (which the Germans call the half day) and the school day (in Germany, the full day).

When asked about the school day, officials produce documents outlining a time frame similar to that in the typical American school. They feel no need to explain extracurricular activities within the school day, because these activities are not allowed to interfere with academic time. Academic time, by and large, is devoted to core academic study—native language and literature, mathematics, science, history, civics, geography, the arts, and second and third languages.

The use of “instructional” time in the United States is markedly different. The Commission analyzed time requirements for core academic subjects in 41 states and the District of Columbia.<sup>1</sup> The results are startling: on average, students can receive a high school diploma—often sufficient in itself for university entrance—if they devote only 41 percent of their school time to core academic work.

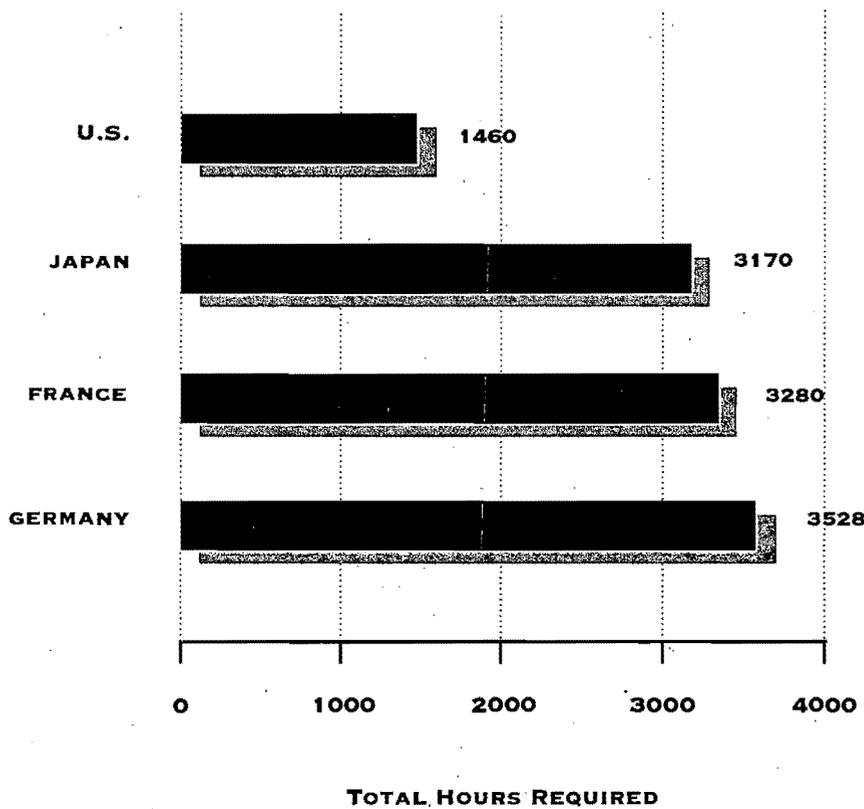
It is conceivable that American students devote more time to demanding coursework than states require. That hope, however, is misplaced: 1993 data from the U.S. Department of Education indicate that the

AS 1994 DAWNED, CALLS FOR MUCH MORE DEMANDING SUBJECT MATTER STANDARDS BEGAN TO BEAR FRUIT. THEIR PURPOSE IS TO BRING ALL AMERICAN YOUNGSTERS UP TO WORLD-CLASS PERFORMANCE STANDARDS.

<sup>1</sup> Nine states did not provide information.

FIGURE 1<sup>2</sup>

THE FINAL FOUR YEARS IN FOUR NATIONS:  
ESTIMATED REQUIRED CORE ACADEMIC TIME



2. Sources: United States estimate developed from The Digest of Education Statistics (NCES, 1992); State Education Indicators (Council of Chief State School Officers, 1990), and the Commission's review of academic requirements in 41 states and the District of Columbia. The estimate for Japan was developed from Monbusho (1993 publication of the Japanese Ministry of Education, Science and Culture) and site visits to Japanese secondary schools, and confirmed by senior Japanese ministry officials at a meeting in Washington. The estimate for France was developed from a French publication, Organization of the French Educational System Leading to the French Baccalaureat, and confirmed by French officials. The German estimate is actually the number of hours of required coursework for one state, Berlin.

course of study most students follow is very close to what states require.

Figure 1 compares requirements for core academic instruction in the final four years of secondary school in four countries: Germany, France, Japan, and the United States. It displays minimum time requirements at the secondary level in core academic subjects, based on our observations abroad and official state and national publications. In their final four years of secondary school, according to our estimates, French, German, and Japanese students receive more than twice as much core academic instruction as American students. Although these estimates are approximations, we are convinced they reflect the magnitude of the academic time trap in which American schools are caught.

Figure 1 speaks for itself. No matter how the assumptions underlying the figure are modified, the result is always the same—students abroad are required to work on demanding subject matter at least twice as long. In practical terms, this means that most foreign students are studying language, literature, science and two or more languages, while many of our young people spend their time in study halls, pep rallies, driver education, and assemblies.

Even the most committed advocate of the *status quo* will concede that American students cannot learn as much as their foreign peers in half the time. By this standard, our education system still has a long way to go.

One need look no further than Figure 1 to understand why European and Asian visitors to the United States commonly understand English while their children outperform American students on tests of student achievement. Americans abroad, by contrast, assume they will deal with people who speak English. Our high school students have trouble reading, writing, and solving simple mathematics problems.

The emphasis on core academic instruction abroad does not mean that other activities are ignored. Up to 50 percent of German students, even in farming areas, remain at the school after the academic day ends in clubs, sports, and addition-

al classes of one kind or another. In Japan, students clean their school when the academic day ends and then enter activity periods.

#### OUT-OF-SCHOOL LEARNING

The formidable learning advantage Japanese and German schools provide to their students is complemented by equally impressive out-of-school learning. Large numbers of Japanese students (two-thirds of all students in Tokyo; nationally about 15 percent of all students in grade four rising to nearly 50 percent by grade nine) attend *jukus*—private, tutorial services that enrich instruction, provide remedial help, and prepare students for university examinations.

A Japanese research institute official told the Commission that elementary school teachers teach to the “middle of the class.” Gifted students who might get bored or students who need extra assistance are expected to turn to the *juku* for help.

*Jukus* are a big business in Japan. Spending on the estimated 35,000 *jukus* reaches about 800 billion yen annually (over \$7 billion), costing the average family, according to Japanese officials, about \$2,500 per year, per child.

In Japan, schools and the larger society generally ignore “ability” or “aptitude” as factors in school success. The Japanese are convinced that hard work can help every student meet high standards. Diligence, application, and enterprise are the keys—if a student is not “getting it,” more time, usually self-directed time, is the answer.

*Jukus* do not exist in Germany. But if German students are similar to their peers throughout Europe, 50 percent of them spend two or more hours on daily homework, and only 7 or 8 percent watch television for five or more hours a day. In the United States, only 29 percent of students report doing as much homework and three times as many watch television daily for five or more hours.

In sum, compared to American students, German and Japanese youth are exposed in high school to much more demanding academic subjects, for many more hours.

They spend more serious time learning outside the school. And they fritter away less time in front of the television.

#### **PERFORMANCE CARRIES CONSEQUENCES**

Another distinction that can be drawn between American education and schooling abroad is in consequences for school performance. In Germany and Japan, learning matters. Performance, not seat time, is what counts. Students understand that what they learn in school will make a real difference to their chances in life. In the United States, paper credentials count. Apart from the small percentage of students interested in highly selective colleges and universities, most students understand that possession of even a mediocre high school diploma is enough to get them into some kind of college or job.

Students in German vocational schools know that what they learn in class is closely related to what they will do on the job, because their apprenticeship experience (an alternating routine of learning in class and learning on the job) demonstrates the relationship every day. German students interested in pursuing a university career also understand that they will have to pass the *Abitur*, a demanding examination covering secondary school preparation.

Examination pressure is even more severe in Japan. Since attendance in upper secondary schools (grades 10-12) is not compulsory in Japan, young people take examinations even to enter public high schools. Although 90 percent of Japanese young people complete high school, the particular high school attended is critical to the chances for university admission. Moreover, Japanese students also must sit for intense, pressure-filled, competitive examinations for admission to the best universities.

#### **PROFESSIONAL PRACTICE**

Teachers are held to much higher standards in both Germany and Japan. In Germany, teachers are expected to be more



knowledgeable in their subjects than are teachers in the United States. Teacher preparation, consequently, takes up to six years (compared to four in the United States). In Japan, aspiring teachers are required to pass a rigorous examination prior to certification. The organization of school time in both societies encourages continued development of teachers, who are given the time they need to grow and cooperate as professionals.

Japanese teachers generally deal with more students in each classroom, but teach fewer classes; the typical class has between 35 and 40 students, compared to an average of 23 in the United States. However, Japanese teachers are typically in "front of the class" for only four hours a day. Time spent outside the classroom is not considered wasted, but an essential aspect of professional work. The same phenomenon can be seen in Germany—teachers are in front of a class for 21 to 24 hours a week, but their work week is 38 hours long. Non-classroom time is spent on preparation, grading, in-service education, and consulting with colleagues.

In both countries, the Commission sensed considerably greater encouragement of teacher professionalism than is apparent in the United States. In Germany, for example, teachers select the texts they will use to meet *Länder* (state) standards; in 15 of the 16 states, teachers design and administer their own tests for the *Abitur*; and teachers validate colleagues' testing by sharing examinations with each other and discussing test questions.

#### NOT JUST A MATTER OF TIME

It is clear from these observations that the issue of improving student performance is not simply a matter of time. Time is clearly critical. In the context of a global market for educated people, the fact that youth abroad receive the equivalent of several additional years of schooling cannot be ignored. But other factors are equally important. Elsewhere, core academic instruction is emphasized. Academic time

is protected. Expectations for out-of-school learning are high. Teachers are held to high standards and treated as professionals.

All of these are critical factors in the success of schooling abroad. And all of them are feasible, because foreign schools understand that effective learning depends on freeing schools, teachers, and students from the bonds of time.

## RECOMMENDATIONS

**A**s various panaceas have been advanced in the last decade to solve the problems of learning in America, education reform has moved in fits and starts. Indeed, as different helmsmen have seized the wheel, the ship of education reform has gone round in circles. If we have learned anything from these efforts, it is that no single solution exists for the problems of American schools.

Reform can only succeed if it is broad and comprehensive, attacking many problems simultaneously. In that effort, high standards and time are more than simply additional oars in the water. With standards

as our compass, time can be the rudder of reform.

In our judgment, educators have created a false dilemma in debating whether additional instructional time can be found within the confines of the current day and calendar, or needs to be sought by extending both. False dilemmas produce bad choices. To meet new demands, the United States needs both—the best use of available time and more time.

### EIGHT RECOMMENDATIONS

We offer eight recommendations to put time at the top of the nation's reform agenda:

- I. REINVENT SCHOOLS AROUND LEARNING, NOT TIME.
- II. FIX THE DESIGN FLAW: USE TIME IN NEW AND BETTER WAYS.
- III. ESTABLISH AN ACADEMIC DAY.
- IV. KEEP SCHOOLS OPEN LONGER TO MEET THE NEEDS OF CHILDREN AND COMMUNITIES.
- V. GIVE TEACHERS THE TIME THEY NEED.
- VI. INVEST IN TECHNOLOGY.
- VII. DEVELOP LOCAL ACTION PLANS TO TRANSFORM SCHOOLS.
- VIII. SHARE THE RESPONSIBILITY: FINGER POINTING AND EVASION MUST END.

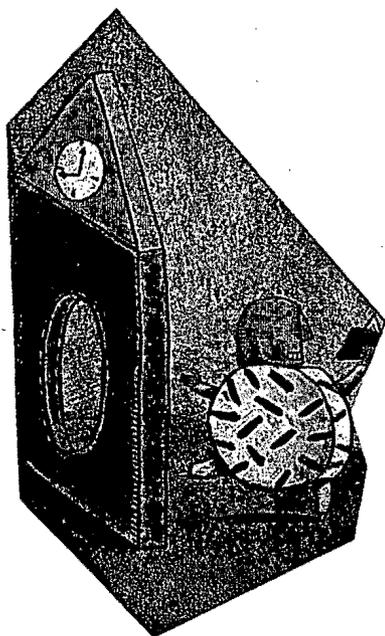
VETERAN TEACHERS ARE WELL AWARE THAT TODAY'S STUDENTS BRING MANY MORE PROBLEMS TO SCHOOL THAN CHILDREN DID A GENERATION AGO.

## RECOMMENDATIONS

### I.

#### REINVENT SCHOOLS AROUND LEARNING, NOT TIME

WE RECOMMEND A COMMITMENT  
TO BRING EVERY CHILD IN THE  
UNITED STATES TO WORLD-CLASS  
STANDARDS IN CORE ACADEMIC AREAS.



By far the most important part of this Commission's charge relates not to time but to student learning. The first issue is not "How much time is enough?" but "What are we trying to accomplish?" As witnesses repeatedly told the Commission, there is no point to adding more time to today's schools if it is used in the same way. We must use time in new, different, and better ways.

The Commission is convinced the following areas represent the common core all students should master: English and language arts, mathematics, science, civics, history, geography, the arts, and foreign languages. This core defines a set of expectations students abroad are routinely expected to meet. American students can meet them as well.

Regular assessments at different stages of students' lives should require every student to demonstrate a firm grasp of demanding material in each of these areas, a grasp extending far beyond the trivial demands of most multiple-choice tests. They should assess not only the mastery of essential facts, but also the student's ability to write, reason, and analyze.

## FIX THE DESIGN FLAW: USE TIME IN NEW AND BETTER WAYS

WE RECOMMEND THAT STATE AND LOCAL BOARDS WORK WITH SCHOOLS TO REDESIGN EDUCATION SO THAT TIME BECOMES A FACTOR SUPPORTING LEARNING, NOT A BOUNDARY MARKING ITS LIMITS.

The conviction that learning goals should be fixed and time a flexible resource opens up profound opportunities for change.

At a minimum, fixing the design flaw means recognizing that very young children enter school at very different levels of readiness. Some enter kindergarten already reading. Others readily manage computer programs appropriate to their age and skill levels. But some cannot recognize letters from the alphabet or identify numbers or pictures. Sadly, too many are already abused and neglected. School readiness is the basic foundation on which the rest of the school program is built.

Fixing the design flaw also makes possible radical change in the teaching and learning process. New uses of time should ensure that schools rely much less on the 51-minute period, after which teachers and students drop everything to rush off to the next class. Block scheduling—the use of two or more periods for extended exploration of complex topics or for science laboratories—should become more common. Providing a more flexible school day could also permit American schools to follow international practice—between classes students remain in the room and teachers come to them.

A more flexible time schedule is likely to encourage greater use of team teaching, in which groups of teachers, often from different disciplines, work together with students. Greater flexibility in the schedule will also make it easier for schools to take advantage of instructional resources in the community—workplaces, libraries, churches, and community youth groups—and to work effectively with emerging technologies.

Fixing the design flaw means that grouping children by age should become a thing

of the past. It makes no more sense to put a computer-literate second grader in *Introduction to Computers* than it does to place a recent Hispanic immigrant in *Introductory Spanish*. Both should be placed at their level of accomplishment. Although the Commission does not believe 15-year olds should leave high school early, meeting high performance standards in key subjects should be the requirement for the high school diploma, not simply seat time or Carnegie units. In the case of genuinely exceptional students who meet these requirements while very young, schools should offer them the opportunity to take advanced courses.

Above all, fixing the flaw means that time should be adjusted to meet the individual needs of learners, rather than the administrative convenience of adults. The dimensions of time in the learning process extend far beyond whether one student needs more time and another can do with less. The flexible use of time can permit more individualized instruction.

We should not forget that students are like adults in many ways. Some are able to focus intensely on demanding materials for long periods; others need more frequent breaks. Many students, like many adults, learn best by reading; some learn best by listening; others, by doing, or even by talking amongst themselves. Offering more frequent breaks, providing more opportunities for hands-on learning, encouraging group work—these techniques and others can parole some of the students who today feel most confined by the school's rigid time demands.

All of these possibilities—and many others—lie within reach if the design flaw is fixed. All of them are much more difficult within the prison of time-bound education.

### III.

#### ESTABLISH AN ACADEMIC DAY

**WE RECOMMEND THAT SCHOOLS PROVIDE ADDITIONAL ACADEMIC TIME BY RECLAIMING THE SCHOOL DAY FOR ACADEMIC INSTRUCTION.**

The Commission is convinced that if American students are to meet world-class standards all children will need more academic time. Reclaiming the academic day means providing at least 5.5 hours of *core academic instructional time* daily. That time should be devoted exclusively to the common core of subjects identified in Recommendation I.

The Commission's analysis of how time is currently used in American schools makes one thing clear: even within the confines of a 180-day school year, reclaiming the academic day should, alone, nearly double the amount of instructional time in core curriculum areas. For some students, reclaiming the academic day will provide all the additional time they need to meet new standards. For most others, however, more academic time will be required.

Establishing an academic day means, in essence, that the existing school day be devoted almost exclusively to core academic instruction. What this means is obvious: many worthwhile student programs—athletics, clubs, and other activities—will have to be sacrificed unless the school day is lengthened. We do not believe they should be sacrificed, or that communities will agree to do without them. At the same time, we cannot agree to sacrificing the academic core of the school to other activities. Instead, all student activities should be offered during a longer school day.

Compensatory programs and special efforts for the gifted and talented can be provided during the longer school day. Language instruction for non-native English speakers should be provided in this longer day. Students who want to accelerate their studies, perhaps spending only three years in high school, can also use this time.





**DEVELOPING A NEW GENERATION OF SCIENTISTS,  
SCHOLARS, AND LEADERS**

NO ONE CAN VISIT THE THOMAS JEFFERSON HIGH SCHOOL FOR SCIENCE AND TECHNOLOGY, ALEXANDRIA, VIRGINIA, WITHOUT REALIZING IT IS ONE OF THE MOST REMARKABLE PUBLIC SCHOOLS IN THE UNITED STATES—REMARKABLE FOR THE WEALTH OF THE SUBURBAN SCHOOL DISTRICT THAT SUPPORTS IT, THE TALENTS OF ITS SELECTED STUDENTS, THE SKILL OF ITS STAFF, THE TECHNOLOGIES IT EMPLOYS, AND THE SUPPORT IT RECEIVES FROM THE BUSINESS COMMUNITY.

IT IS REMARKABLE FOR SOMETHING ELSE AS WELL. ITS SCHEDULE IS DIFFERENT; EVERY SCHOOL DAY AT THOMAS JEFFERSON IS LENGTHENED BY ONE PERIOD, DURING WHICH EVERY ONE OF ITS 1,600 9TH TO 12TH GRADERS IS REQUIRED TO PARTICIPATE IN A STUDENT ACTIVITY OR RELATED COURSEWORK SUCH AS TUTORING, LABORATORIES, OR GUIDANCE ACTIVITIES. DAILY SCHEDULES ARE ALSO FLEXIBLE ENOUGH TO LET EVERY CLASS MEET FOR AT LEAST ONE DOUBLE-PERIOD EVERY WEEK.

THE SELECTIVITY OF THE SCHOOL—AND CORPORATE SPONSORSHIP OF STATE-OF-THE-ART TECHNOLOGICAL ENVIRONMENTS IN AREAS SUCH AS OPTICS, ENERGY SYSTEMS, TELECOMMUNICATIONS, BIOTECHNOLOGY, AND INDUSTRIAL ROBOTICS—MAKES IT EASY TO OVERLOOK THE SCHOOL'S SCHEDULE AS A FACTOR IN ITS SUCCESS.

WHAT DOES THE EXTRA PERIOD MEAN IN PRACTICE? ACCORDING TO SOPHOMORE PAUL HELMS, "IT IS ONE OF THE MOST IMPORTANT THINGS IN THE SCHOOL. I USE IT TO GO TO BOTH THE FELLOWSHIP OF CHRISTIAN ATHLETES AND TO A LATIN HONORS CLASS." SENIOR SETH MITCHO: "EIGHTH PERIOD HAS HELPED MAKE THIS SCHOOL THE CENTER OF OUR LIVES AND OFTEN OF OUR FAMILIES."

A SCHEDULE THAT HELPS MAKE SCHOOL THE CENTER OF THE LIVES OF STUDENTS AND FAMILIES MAY BE THE MOST REMARKABLE THING ABOUT THE THOMAS JEFFERSON HIGH SCHOOL FOR SCIENCE AND TECHNOLOGY.

## IV.

### KEEP SCHOOLS OPEN LONGER TO MEET THE NEEDS OF CHILDREN AND COMMUNITIES

WE RECOMMEND THAT SCHOOLS RESPOND TO THE NEEDS OF TODAY'S STUDENTS BY REMAINING OPEN LONGER DURING THE DAY AND THAT SOME SCHOOLS IN EVERY DISTRICT REMAIN OPEN THROUGHOUT THE YEAR.

No magic number of hours in the day, or days in the year, will guarantee learning for all students. As a rule of thumb, about 5.5 hours of core academic instruction daily is a useful frame of reference for the typical student. But it is only a frame of reference. Many students will need more time; some will need less.

As noted under Recommendation III, establishing an academic day of necessity requires lengthening the school day, both for extracurricular activities and for time to offer some students academic programs designed to give them special help or opportunities.

Schools open throughout the year can also provide many services to adults, serving as centers in which community agencies offer adult education, "intergenerational" literacy efforts teaching parents and children together, and programs stressing, for example, parenting or job skills. When the walls of the prison of time are torn down, schools can realize their full potential as community learning centers, vibrant and responsive to the educational needs of citizens of every age.

We stress again that many children, in many different communities, are growing up today without the family and community support taken for granted when the public school was created 150 years ago. The documented need for child care and uncoordinated nature of the variety of public and private providers now trying to meet it—licensed and unlicensed, for profit and not-for-profit, in homes and in community facilities—can no longer be ignored.

No single agency can meet all of the needs of today's families, nor can any major public agency ignore them. Extended-day services that offer safe havens for children in troubled neighborhoods are a logical solution to the child care problem; a problem that does not go away when schools close for the summer. Moreover, schools have every interest in making sure that a wide variety of other services—immunizations, health screening, nutrition, and mental health, among others—are available to children and their families. Without such services, it is unlikely that the first of the National Education Goals ("school readiness") can be achieved.

Fixing the design flaw requires acknowledging something else as well: state mandatory attendance requirements defining how many days students should attend school should not define how many days schools should remain open. In fact, state financial support should encourage more learning time. If Americans are ever to escape the education time trap, some schools in every district should be open throughout the year so that students can find the help they need, when they need it.

Finally, we note that in suggesting greater use of school facilities to meet the needs of children and communities, we are not recommending that schools provide these services directly or pay for them. Schools should act as advocates, insisting that the needs of children and families be met and making school facilities available whenever possible for services essential to student learning.



**THE EXTENDED DAY AND YEAR: ONE COMMUNITY'S EXPERIENCE  
WITH PUBLIC DEMAND**

THE MURFREESBORO SCHOOLS IN TENNESSEE MAY HAVE THE MOST COMPREHENSIVE EXTENDED-DAY AND -YEAR PROGRAM IN THE UNITED STATES. IN 1986, MURFREESBORO DECIDED THAT COMMUNITY CONCERN ABOUT LATCH-KEY CHILDREN WAS STRONG ENOUGH TO JUSTIFY EXTENDING THE SCHOOL YEAR. THE DISTRICT ANNOUNCED THAT ONE ELEMENTARY SCHOOL WOULD BE OPEN FROM 6:00 A.M. UNTIL 6:00 P.M. WITH PARENTS PAYING FOR THE EXTENDED-DAY SERVICES. FOUR STUDENTS SHOWED UP. WITHIN TWO YEARS, PUBLIC DEMAND FORCED THE EXTENSION OF THE CONCEPT TO EVERY ELEMENTARY SCHOOL IN THE CITY. THIS YEAR, 50 PERCENT OF THE CITY'S 5,000 ELEMENTARY SCHOOL STUDENTS CAN BE FOUND IN THE PROGRAM ON ANY GIVEN DAY, ALL ON A VOLUNTARY BASIS ON THE PART OF PARENTS.

PLANS ARE NOW WELL ADVANCED TO OPEN MURFREESBORO'S FIRST K-8 YEAR-ROUND SCHOOL IN AUGUST 1994. PARENTAL FREEDOM OF CHOICE WILL DETERMINE ENROLLMENT. DISTINGUISHING BETWEEN THE "SCHOOL DAY," "EDUCATIONAL SERVICES," AND "EXTENDED SCHOOL SERVICES," THE SCHOOL WILL OFFER EDUCATIONAL SERVICES FROM 8:00 A.M. UNTIL 5:30 P.M., AND EXTENDED SERVICES BEFORE SCHOOL FROM 6:00 A.M. AND AFTER SCHOOL UNTIL 7:00 P.M. EXTENDED SERVICES WILL BE AVAILABLE FIVE DAYS A WEEK, 52 WEEKS A YEAR. INTERIM SESSIONS WILL OFFER 40 EXTRA DAYS OF ACADEMIC TIME.

PARENTS CHOOSING TO TAKE ADVANTAGE OF EDUCATIONAL SERVICES FOR THEIR CHILDREN AFTER 3:00 P.M. (OR DURING THE 40 DAYS) WILL PAY A SMALL FEE, AS WILL PARENTS OPTING FOR EXTENDED SERVICES. STUDENTS DIRECTED BY SCHOOL PERSONNEL TO ATTEND SUPPLEMENTARY CLASSES WILL DO SO AT DISTRICT EXPENSE. MURFREESBORO EXPECTS TO ACCOMPLISH ALL OF THIS WITHIN ITS REGULAR PER-PUPIL EXPENDITURES FIGURES. MAYOR JOE JACKSON BRIDLES AT THE SUGGESTION THAT EXTENDED SERVICES UNDERMINE THE FAMILY: "YOU'VE GOT IT EXACTLY BACKWARDS," HE RESPONDS. "THESE SERVICES SUPPORT THE FAMILY BY MAKING IT POSSIBLE FOR PEOPLE TO WORK WITHOUT WORRYING BECAUSE THEY KNOW THEIR CHILDREN ARE INVOLVED IN CONSTRUCTIVE LEARNING."



## VI.

### INVEST IN TECHNOLOGY

**WE RECOMMEND THAT SCHOOLS SEIZE ON THE PROMISE OF NEW TECHNOLOGIES TO INCREASE PRODUCTIVITY, ENHANCE STUDENT ACHIEVEMENT, AND EXPAND LEARNING TIME.**

Technology is a great unrealized hope in education reform. It can transform learning by improving both the effectiveness of existing time and making more time available through self-guided instruction, both in school and out. Technology has already changed much of the rest of American society—profit and non-profit, private sector and government alike—because it makes it possible to produce more with less. A similar revolution is possible in education.

At a minimum, computers and other technological aids promise to rid teachers and administrators of the mundane record keeping that is such a characteristic of school life today, permitting teachers to spend more time designing instructional programs for their students.

But the true promise of technology lies in the classroom. Technology makes it possible for today's schools to escape the assembly-line mentality of the "factory model" school. With emerging hardware and software, educators can personalize learning.

Instead of the lock-step of lecture and laboratory, computers and other new

telecommunications technologies make it possible for students to move at their own pace. Effective learning technologies have already demonstrated their ability to pique student interest and increase motivation, encouraging students not only to spend more of their own time in learning but also to be more deeply involved in what they are doing.

Finally, it should be noted that the "information superhighway" can reshape education as it will other areas of American life. The school revolution, however, depends both on a concerted investment strategy to help educators obtain these technologies and on educators confronting their reluctance to supplement the techniques of the 19th century (textbooks, chalk and blackboards) with the technologies of the 21st (CD-ROMs, modems, and fiber optics). They must do so. In order to help them, states should establish special funds to provide low-interest loans and grants, and they should create large-scale purchasing agreements for new technologies and teacher training in their use.

## VII.

### DEVELOP LOCAL ACTION PLANS TO TRANSFORM SCHOOLS

**WE RECOMMEND THAT EVERY DISTRICT CONVENE LOCAL LEADERS TO DEVELOP ACTION PLANS THAT OFFER DIFFERENT SCHOOL OPTIONS AND ENCOURAGE PARENTS, STUDENTS, AND TEACHERS TO CHOOSE AMONG THEM.**

School reform cannot work if it is imposed on the community top-down. Genuine, long-lasting reform grows from the grassroots.

The Commission believes every community must engage in a community-wide debate about the shape and future of its schools. To that end, we encourage every district, with the support of the superintendent and local school board, to engage major school stakeholders in a comprehensive, long-term dialogue about the hopes, aspirations, and future directions of local education. The conversation should include students, parents, taxpayers, employers, and representatives of public assistance, juvenile justice, health and other social services agencies. It should be organized around learning time. If this conversation is to be productive, it is essential to include teachers and administrators as equal partners.

We are convinced that larger school districts can offer families a wide array of alternative school calendars by encouraging individual schools to adopt distinctive approaches. The more options, the better. No single configuration will satisfy every need. Districts of any size, with a sense of vision, boldness, and entrepreneurship can experiment with block scheduling, team teaching, longer days and years, and extending time with new distance-learning technologies.

No community in the United States is so small or impoverished that it cannot benefit from an examination of how it uses time—

if not in extending the day or year, at least in re-configuring how it uses the time now available.

The Commission wants to stress that this recommendation provides a real opportunity for local leadership groups—the business community, colleges and universities, churches, civic groups, newspapers and the electronic media—to go beyond criticizing schools by helping frame the education debate community by community. This is not just a task for educators. There can be no doubt that the 1989 Education Summit, convened under the leadership of the White House and the nation's governors, went a long way towards focusing Americans on the goals they hold in common for their schools. Local leaders can do a lot to transform their communities and their schools by convening similar education summits, county by county, city by city, district by district, and, if need be, school by school.

Finally, the Commission issues a challenge to local school boards: use your time to perform the leadership role for which you have been elected or appointed.

Recent analyses demonstrate convincingly that far too many boards function as managers instead of policymakers. School board time should be devoted to local policy, goals, and the education needs of children, not to micro-management of school operations.

Our challenge: help your community crystallize a vision for its schools.



## "YEAR-ROUND EDUCATION"

PRINCIPAL HOWARD LAPPIN OF LOS ANGELES' JAMES A. FOSHAY MIDDLE SCHOOL SHOWED THE COMMISSION AN EXAMPLE OF A "YEAR-ROUND EDUCATION" PROGRAM. DESPITE THE NAME, MOST YEAR-ROUND SCHOOLS ARE A REORGANIZATION OF THE 180-DAY SCHOOL YEAR; THEY DO NOT PROVIDE ADDITIONAL TIME FOR EITHER LEARNING OR NONACADEMIC SERVICES. NEVERTHELESS, THEIR EXISTENCE INDICATES THAT ALTERNATIVE CALENDARS ARE FEASIBLE IN MANY AREAS AND YEAR-ROUND EDUCATION IS PROBABLY THE MOST WIDELY COPIED ALTERNATIVE TO THE TRADITIONAL CALENDAR. NATIONWIDE, NEARLY 2,000 PUBLIC AND PRIVATE SCHOOLS, ENROLLING MORE THAN 1.4 MILLION CHILDREN, ARE ON YEAR-ROUND CALENDARS, WITH THE LION'S SHARE OF SCHOOLS AND ENROLLMENT IN CALIFORNIA—ABOUT 1,300 SCHOOLS AND 1.16 MILLION CHILDREN.

THE YEAR-ROUND SCHEDULE CREATES FOUR SEPARATE SCHOOLS WITHIN FOSHAY'S WALLS. FOSHAY OPERATES FOUR DIFFERENT SCHEDULES, EACH BEGINNING AND ENDING AT A DIFFERENT TIME OF THE YEAR WITH ONE QUARTER OF THE SCHOOL'S ENROLLMENT. STUDENTS NORMALLY SPEND ONLY 180 DAYS AT SCHOOL, BUT IT IS USED YEAR ROUND, WITH THREE-QUARTERS OF THE SCHOOL'S ENROLLMENT IN THE BUILDING AT ANY GIVEN TIME. TWO-WEEK INTER-SESSIONS BETWEEN SCHOOL TERMS PERMIT STUDENTS TO RECEIVE AN ADDITIONAL 60 HOURS (TEN DAYS) OF INSTRUCTION IF NEEDED.

THE SCHOOL OPERATES SOME SATURDAY CLASSES FOR BOTH STUDENTS AND PARENTS, INCLUDING A JOINT EFFORT WITH THE UNIVERSITY OF SOUTHERN CALIFORNIA. THE JOINT PROGRAM ENROLLS 60 STUDENTS WHO ARE GUARANTEED FULL ASSISTANCE TO ATTEND USC IF THEY PERSIST AND COMPLETE THE SCHOLASTIC ASSESSMENT TEST WITH COMBINED MATH AND ENGLISH SCORES OF AT LEAST 1000. THE USC PROGRAM ALSO REQUIRES MANDATORY SATURDAY CLASSES FOR THE STUDENTS AND THEIR PARENTS.

## VIII.

### SHARE THE RESPONSIBILITY: FINGER POINTING AND EVASION MUST END

#### WE RECOMMEND THAT ALL OF OUR PEOPLE SHOULDER THEIR INDIVIDUAL RESPONSIBILITIES TO TRANSFORM LEARNING IN AMERICA.

No single recommendation can capture the essential point with which the Commission concluded the first chapter: learning must become a national obsession in the United States.

In America's great education debate we find too often a belief that the solution is up to government or "the system." Nothing could be further from the truth. It is up to us. Most of what needs to be done can only be done by the people most directly involved. There are no short-cuts. Lightning will not strike and transform American schools if each of us acts as though the task belongs to somebody else.

To put learning in America powerfully back on track everyone will have to do more, make sacrifices, and work harder. Great institutions like the American school do not fail simply because they collapse from within. Complacency within combines with public apathy to enfeeble institutions, leaving behind impressive but empty facades.

The implications are clear. Schools cannot do the job alone. All of us have to shoulder our responsibilities. If we think this transformation too difficult, we must again learn the wisdom of the African proverb, "It takes a whole village to raise a child."

It takes a family to raise a child. Parents are more than their children's "first teachers"—they are lifelong examples bearing witness to community norms and expectations, to the values that give meaning, texture, and a sense of purpose to life.

It takes communities to raise a child. But in place of healthy communities, too often we find neighborhoods deteriorating amidst the alienation, rootlessness, and despair of violent streets.

It takes schools to raise a child. But where there should be a shared sense of

common purpose among school, family, and community, too often we find a circle of blame. Parents blame the community for the child's problems. Communities blame the school. And the school, too frequently, blames both. Then it closes itself off in its time-bound world.

The finger pointing and evasions must come to an end—up and down the line from the federal government to the family and student. Although concrete recommendations are difficult to make, several ground rules point the way ahead.

**Government should focus on results, not red tape.** The sheer number of rules and regulations hamstringing schools from federal and state governments has grown beyond reason. Their cumulative effect is to handcuff schools.

All federal programs should follow the larger intent of the Clinton administration's legislation, *GOALS 2000: Educate America Act*. This bipartisan legislation puts the National Education Goals into statutory language. It promises to free local schools from regulation in favor of accountability. It focuses on results, not red tape.

The federal government should encourage local schools to use categorical programs to supplement *learning time* for target students. Too often these programs have defeated their own purpose: funds have been used for programs that replace the school's learning time. They should support after-school, weekend, and summer programs.

At the state level, the Commission applauds states such as Kentucky and Washington which have adopted comprehensive education reform efforts, most of which promise to (1) limit regulatory oversight in return for demonstrated results in the schools; (2) offer additional time for

teachers' professional development; and (3) provide sanctions and rewards for schools based on performance.

It is at the school district and local board level that we find the major possibilities for freeing schools of red tape in favor of accountability. A large number of promising experiments are underway around the country to free schools of burdensome district regulation. Many of these experiments revolve around time; many do not. We encourage school boards—through the local action plans suggested in Recommendation VII—to examine these experiments and adapt the most promising to their own needs.

#### **Higher education needs to get involved.**

Colleges and universities, as institutions, have been bystanders for the most part in the school reform debate. It is time they got involved. They can help in at least four ways.

First, higher education already offers a model that holds learning fixed and makes time a variable. Students can earn a bachelor's degree in three, four, even eight years; the same is true of doctoral study.

Second, the school reform movement *cannot* succeed unless academic institutions honor the results of new standards and assessments. Admissions requirements should validate learning, not seat time.

Third, colleges and universities educating teachers must align their programs with the movement to higher standards. This will involve changing not only offerings in schools of education, but also the design of undergraduate programs in core disciplines.

Finally, a handful of colleges and universities across the country are struggling to reinvent local schools. There are 3,500 colleges and universities in the United States and there should be 3,500 examples. It is not necessary to operate a school or district or provide medical checkups and family counseling—although some academic institutions are doing each of these things. But it is necessary to do something.

**The business world should keep up the pressure.** Much of the impetus for school

reform, at the national, state, and local levels, has been generated by business leaders insisting that changes in the workplace require radically different kinds of school graduates. Corporate and small business leaders have also been actively supporting reform coalitions, applying corporate techniques to school operations, and creating a variety of one-on-one school partnerships in which individual firms work directly with individual classrooms, schools, or districts.

Now is no time for timidity in the school reform effort. Leaders cannot blow an uncertain trumpet. Business leaders must keep up the pressure for comprehensive reform to improve student achievement.

**Parents, students, and teachers must lead the way.** Finally, we want to speak directly to the people with the greatest stake in the learning enterprise—parents, grandparents, aunts, uncles, foster parents and guardians, and to teachers and students themselves.

*To parents, grandparents, relatives and guardians:* With your support for the agenda for reform outlined in this document, success is assured. Without it, we do not know how the agenda can be achieved.

You may worry that new academic standards will add to your children's stress. That is not our intent. In fact, that is why we insist that time be made a part of the standards discussion. Indeed, our hope is that schools will be more attractive, interesting, and lively places for both students and adults when time becomes the servant of learning. Schools should also be more hospitable to you, once teachers are released from the relentless treadmill of today's calendar and the academic day is more attuned to your family's needs.

We know that your aspirations for your children are unlimited, no matter your circumstances or the difficulties in which you find yourselves. You can bring those aspirations within reach. We have little to offer other than the advice of experts. But their words bear repeating. Play with your children every day. Read to them every night. Make sure they see a doctor regularly. Take an active interest in the day-to-day activities of the school and the community. Check

homework, turn off the television, and make sure that your teenagers are not working so long earning pocket money that they have no time for school. Above all, encourage your children.

What we ask, of course, takes time. But your reward will come as you watch your children become the kind of men and women you knew they could be.

*To teachers:* You are the inheritors of a tradition of service and scholarship stretching back through history. Your first obligation is to that inheritance.

If you accept minimal effort from students or colleagues or excuse shoddy performance, then you have fallen short, no matter how understandable your reasons. You cannot remain true to the tradition you bear by acquiescing to the social promotion of students who are not prepared for the next step.

Only parents and students have a greater stake than you in this debate. Clearly our proposals will make a huge difference in your working life. The nature of the change, however, remains to be worked out with your participation. This Commission consciously avoided specifying a precise number of days in the school year, or hours in the school day, because we believe those issues must be worked out district by district and school by school.

Although we insist on breaking down the prison walls, it is not our intention to impose new demands on you without providing the support we know you need. It is up to you and your colleagues to put muscle and sinew on the reform framework outlined in this document. We think you will—not because we recommend it, but because you know it is right. You best understand that we are correct when we say learning is a prisoner of time.

Your satisfaction will lie in a more professional working environment. It will also be found in a lifetime following the progress of adults who achieved their full potential because of what you were able to do with and for them in the classroom.

*Last, we say to students:* We know that in the midst of today's pressures, your classes,

school, and homework often appear to be distractions from the business of growing up. We were once in your shoes. We, however, were lucky. When we left school, we expected to face a promising future, and for the most part our expectations were met.

You, too, can make good if you are prepared to work at it. You may think your academic success depends on whether or not you are "smart." But academic progress, as our international friends understand, depends on hard work and perseverance. It is your job to learn, to become the "worker" in your own education. You must understand that learning is never a passive activity; it is always active. Your success in school depends primarily on your own diligence. The returns on your efforts will be many, including the satisfaction of knowing that adults who complained about your generation were wrong—and you proved them wrong.

### FINANCING: DOLLARS, SCHOLARS, AND TIME

"Time is money," runs an old adage. There is no doubt that the recommendations we have advanced will cost money. We suggest it will be money well spent. In fact, a leading economist suggests that when we consider the costs of day care, the effects of summer learning loss, and the ultimate benefits of increased learning time, we can view any initial costs for such time as an investment with more promising pay-offs than most other uses of tax dollars. Where are the funds to come from in a period in which the federal domestic budget is frozen for the next several years, state revenues and outlays are under pressure, and local taxpayers resist higher taxes? The picture in public finance is not optimistic.

But neither is it a disaster. The United States is the wealthiest country in the history of the world. American schools are already handsomely supported by international standards. In constant, inflation-adjusted dollars, real spending on education in America increased 200 percent between 1959 and 1989-90.

We are convinced the American people will support these recommendations if they believe high quality education will accompany the changes and if educators bring common sense and ingenuity to the table.

The Commission believes priorities need to be set in education funding: all current expenditures should be reallocated to support the academic activities of the school. Education dollars should be spent on academics first and foremost. Budgets should distinguish between education and non-education activities.

At the same time, extending the envelope of the school day and year opens up the possibility of using funds in different ways. Federal compensatory funds, as we have suggested, can be employed to extend the school day and provide summer opportunities for those who require more time. Extended-day and other community services can be supported by other units of

state and local government. Moreover, the costs of extended services can be partially met by modest fees, based on parental ability to pay. And costs can be controlled by carefully phasing in new services, using student-teachers and noncertified personnel, and making greater use of full-time staff on flexible schedules.

It should be noted that across the United States the ratio of adults to enrolled students exceeds one to ten, according to data from the National Center for Education Statistics.<sup>3</sup> Surely it is possible to restructure adult use of time so that more teachers and administrators actually encounter students on a daily basis in the classroom, face to face. This does not require additional money.

Throughout this document, the Commission has asked the question: Is there a better way? As these models demonstrate, visionary school leaders in districts of all kinds—large and small, wealthy and poor, urban and rural—are already supporting many of the reforms we advocate. These districts are financing the kinds of changes needed today to anticipate the challenges the future will place before us.

Several things are clear from these models. Many different alternative calendars do exist, most attuned to local needs. Parental choice is a significant feature of most of these models. Fees for additional services are charged in many of these alternatives. Above all, communities of all kinds face a powerful, pent-up demand for new and different educational services.

In the final analysis, the true costs depend on what we think is important. If we value learning, the cost of "doing it right the first time" is less than the expense involved in "doing it wrong" and having to do it over again. As the American business community now understands full well, in the end quality costs less.

### FACING THE TEST OF TIME

Eleven years ago, a small booklet, *A Nation at Risk*, launched one of the great reform movements in American public life. It changed the terms of the education debate by urging education leaders to look beyond the details of schooling to three big issues: time, content, and expectations.

The response was dramatic and sustained. Expectations for student performance have been raised markedly—the public expects more, and so, too, do teachers and principals. Content standards are in the midst of drastic revision that holds out the promise of a world-class education for all.

But learning remains a prisoner of time. The description of the problem contained in *A Nation at Risk* is still true: “Compared to other nations, American students spend less time on school work; and time spent in the classroom and on homework is often used ineffectively.” For practical people, reforming expectations and content were thought to be easier problems to solve; time, a more difficult issue to tackle. But in terms of learning, time as an elastic resource is the main road to excellence.

Americans can justifiably take pride in all they have accomplished and are trying to accomplish through their schools. We have built a remarkable system of public education through twelfth grade, universally available to all. We have provided access to postsecondary education at levels matched by no other nation. We have led the world in attending to the needs of the disadvantaged, the dispossessed, and the disabled. We are in the midst of the longest, sustained education reform movement since the common school was created in the 19th century.

Today a new challenge beckons: we must face the test of time. “Time,” said Aeschylus 25 centuries ago, “teaches all things.” Now at last we must learn its lesson about education: American students will have their best chance at success when they are no longer serving time, but when time is serving them.

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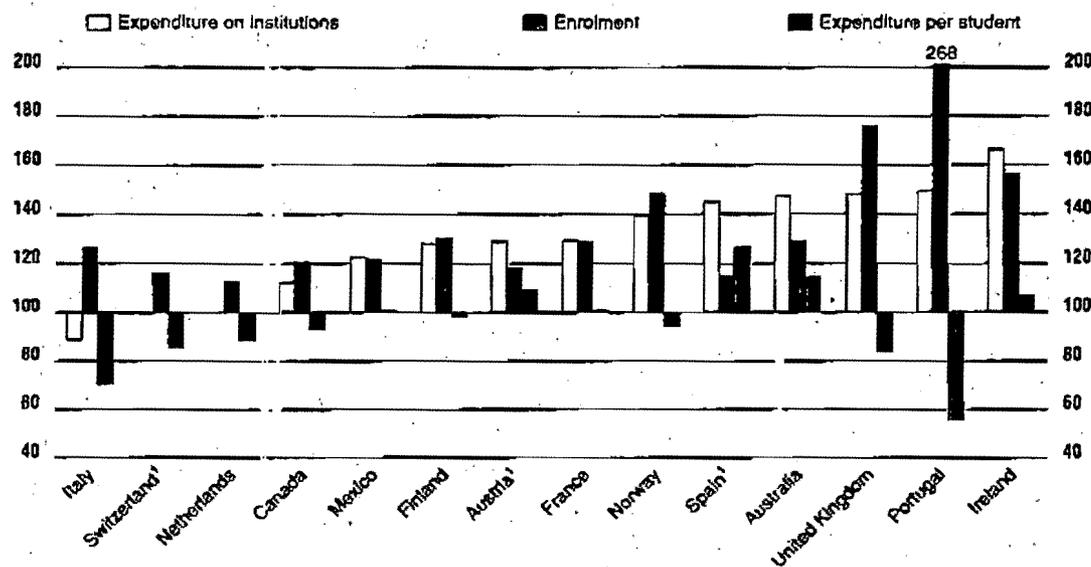
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## EDUCATIONAL EXPENDITURE PER STUDENT

- Educational expenditure per student at the primary and secondary levels increased in most countries between 1990 and 1996, even though enrolment increased in many of them at the same time.
- At the tertiary level, expenditure per student decreased in eight out of 14 countries, largely as a result of large increases in enrolment.
- There is a positive relationship between spending per student and per capita GDP. poorer countries spending relatively less per student than richer countries.
- In some countries, low annual expenditure translate into high overall costs of tertiary education because of the long duration of the tertiary programme.

**B4**

Chart B4.1. Index of changes in spending on education, enrolment, and expenditure per student for tertiary education between 1990 and 1996 (1990 = 100)



1. Public institutions only.

Countries are ranked in ascending order of total expenditure on institutions.

Source: OECD Education Database.

**B4 Educational Expenditure per Student****■ POLICY CONTEXT**

*This indicator shows annual expenditure per student in absolute terms (in equivalent US dollars).*

Effective schools require the right combination of talented personnel, adequate facilities, state-of-the-art equipment and motivated students ready to learn. The demand for high-quality education, which can translate into higher costs per student, has to be balanced against the necessity of avoiding undue burdens on taxpayers.

As a result, the question of whether the resources devoted to education yield adequate value for the investments made figures prominently in the public debate. Even small gains in efficiency, of the order of 1 or 2 per cent, could release prodigious resources that could be used to improve educational quality or to increase access to education. Although the optimal volume of resources required to prepare each student for life and work in the modern economy is difficult to assess, international comparisons of spending per student can provide a starting point for evaluating the effectiveness of different models of educational provision.

*It also compares expenditure per student relative to GDP per capita.*

Policy-makers must also balance the importance of improving the quality of educational services with the desirability of expanding access to educational opportunities. A comparative review of how trends in expenditure per student have evolved shows how the expansion of enrolments in many countries, particularly in tertiary education, has affected the allocation of resources per student.

*Trends in the development of expenditure per student are also examined.*

Decisions on the allocation of funds to the various levels of education are also important. For example, some countries emphasise broad access to higher education while others invest in near-universal education for children as young as two or three years of age.

**■ EVIDENCE AND EXPLANATIONS***Expenditure per student in equivalent US dollars*

*As a whole, OECD countries spend US\$3 769 per primary student, US\$5 507 per secondary student and US\$10 893 per tertiary student...*

OECD countries as a whole spend US\$3 769 per student at the primary level, US\$5 507 per student at the secondary level, and US\$10 893 per student at the tertiary level (Chart B4.2). But these overall OECD-averages are heavily influenced by high expenditure in some countries such as the United States. Spending per student in the "typical" OECD country, as represented by the simple mean across all countries, amounts to US\$3 851 at the primary level, US\$5 273 at the secondary level and US\$8 612 at the tertiary level of education.

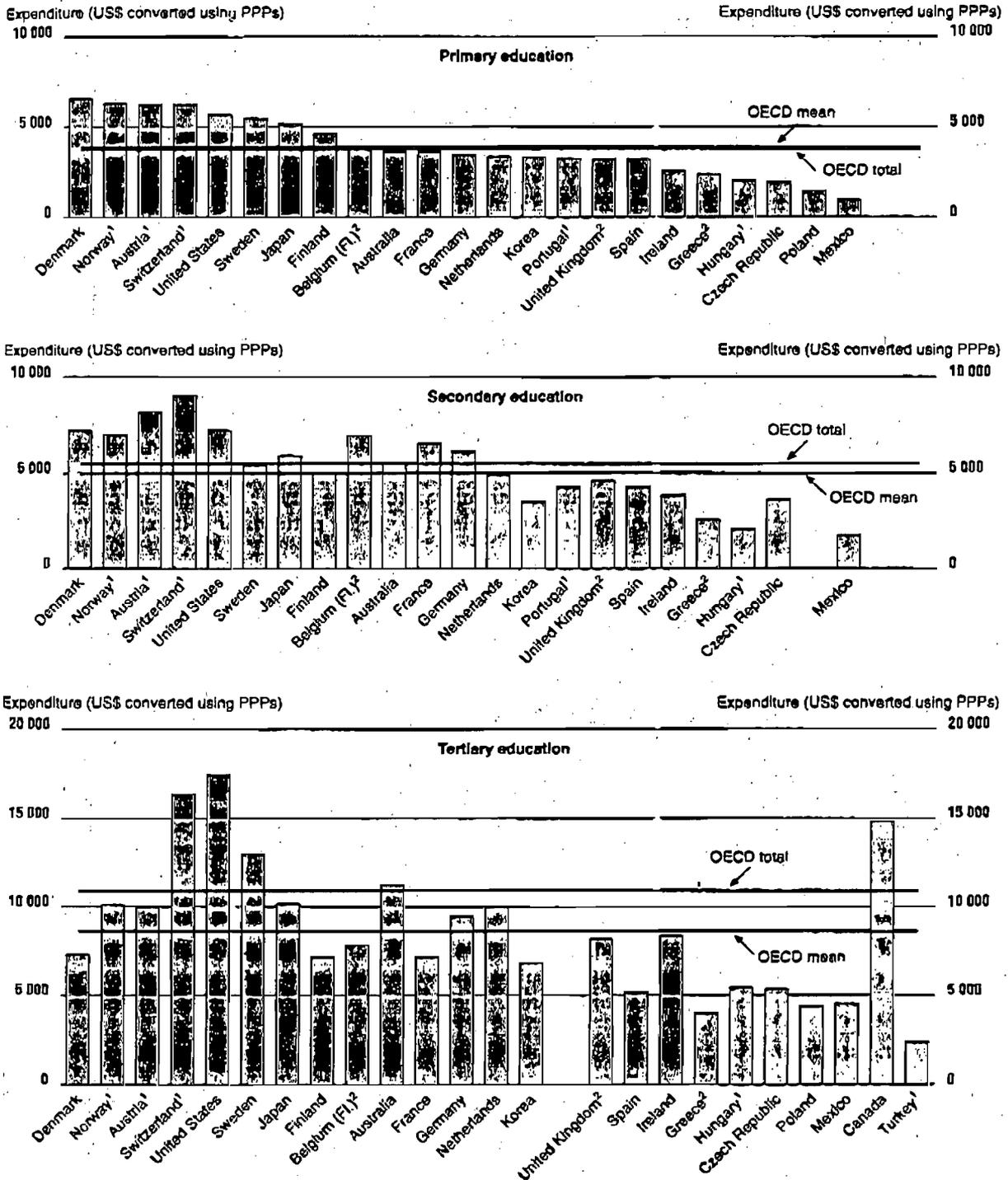
*... but these averages mask a broad range of expenditure per student across countries.*

These averages mask a broad range of expenditure per student across OECD countries: from US\$935 in Mexico to US\$6 596 in Denmark at the primary level, from US\$1 726 in Mexico to US\$9 045 in Switzerland at the secondary level, and from less than US\$3 000 in Turkey to more than US\$17 000 in the United States at the tertiary level.

These comparisons are based on purchasing power parities, not market exchange rates, and therefore reflect the amount of a national currency that will buy the same basket of goods and services in a given country as the US dollar in the United States. These adjustments do not allow for differences in the cost of educational resources of equivalent quality.

Educational Expenditure per Student

Chart B4.2. Annual expenditure per student in public and private institutions, by level of education (1997)



1. Public institutions.  
 2. Public and government-dependent private institutions.  
 Countries are ranked in descending order of expenditure per student at the primary level of education.  
 Source: OECD.

B4

**B4 Educational Expenditure per Student**

Of the 23 OECD countries for which data on expenditure per primary student are available, five spend less than US\$2 500 per primary student (the Czech Republic, Greece, Hungary, Mexico and Poland) and five spend more than US\$5 500 (Austria, Denmark, Norway, Switzerland and the United States).

For secondary education, Greece, Hungary and Mexico spend less than US\$2 600 per student, whereas Austria, Denmark, Switzerland and the United States spend more than US\$7 000 (Table B4.1).

*Expenditure per tertiary student varies between countries by a factor of seven.*

At the tertiary level, expenditure per student varies by a factor of seven, with Turkey and the United States constituting the extremes among the 24 countries for which data are available (Table B4.1). Greece, Mexico, Poland and Turkey report annual expenditure of less than US\$5 000; Canada, Switzerland and the United States report spending over US\$14 000 per student.

*Expenditure per student consistently rises sharply with the level of education and is dominated by personnel costs.*

Expenditure per student exhibits a common pattern throughout the OECD: in each country it rises sharply with the level of education, and it is dominated by personnel costs (Indicator B5). This pattern can be understood by looking at the main determinants of expenditure, particularly the place and mode of educational provision. The vast majority of education still takes place in traditional school and university settings with – despite some differences – similar organisation, curriculum, teaching style and management. These shared features are likely to lead to similar patterns of unit expenditure.

*The labour-intensiveness of education accounts for the predominance of teachers' salaries in overall costs.*

The labour-intensiveness of the traditional model of education accounts for the predominance of teachers' salaries in overall costs. Differences in student/teaching staff ratios (Indicator B7), staffing patterns, teachers' salaries (Indicator D1), teaching materials and facilities influence cost differences between levels of education, types of programmes and types of schools.

*Technology may allow some savings to be made.*

Future gains in efficiency may be achieved through the use of new information technologies, both to hold down unit costs and to maintain, if not improve, learning outcomes. Unit cost savings may also be available through the expansion of distance education, whether intensive use is made of technology or not.

*Lower unit expenditure cannot simply be equated with lower quality of educational services.*

It would be misleading to equate lower unit expenditure generally with a lower quality of educational services. The Czech Republic, Japan, Korea and the Netherlands, for example, which have comparatively moderate expenditure per student, are the countries with some of the best performances by students in mathematics.

*Institutional arrangements often lag behind changes in demographic conditions.*

Institutional arrangements often adapt to changing demographic conditions only after a considerable lag. They can also influence unit expenditure. For example, a declining number of primary students may lead to higher unit costs if staffing is not reduced and/or schools are not closed in proportion. Conversely, in times of increasing enrolment, class sizes may rise, teachers may teach outside their field of specialisation, etc.

In addition, differences in national price levels for educational services, in so far as they deviate from overall price levels, accounted for in the purchasing power parities, have an impact on the differences in unit expenditure between countries.

**Educational Expenditure per Student**

*Changes in expenditure per student between 1990 and 1996*

In 12 out of the 14 countries for which comparable trend data are available for primary and secondary education, expenditure per student increased between 1990 and 1996, even though enrolment increased in many of them at the same time (Chart B4.3). In Ireland, Mexico, Portugal and Spain expenditure per primary and secondary student rose by between 25 and 66 per cent.

Only in Finland and Italy did expenditure per primary and secondary student decrease between 1990 and 1996. In Italy this fall occurred despite a simultaneous decrease in enrolments.

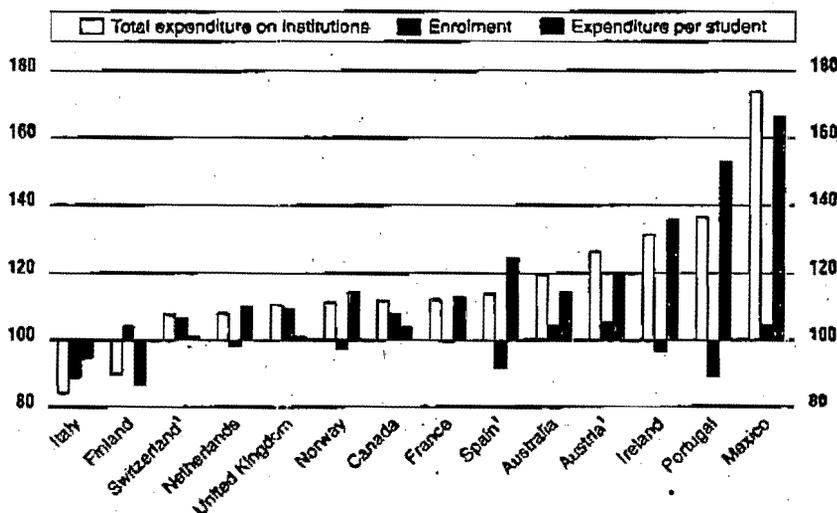
In eight out of 14 OECD countries, tertiary expenditure per student declined between 1990 and 1996, largely as a result of a dramatic increase in the number of students enrolled: in Canada, Finland, Italy, the Netherlands, Norway, Portugal, Switzerland and the United Kingdom, expenditure per tertiary student in 1996 was lower than in 1990 while enrolment was up (Chart B4.1). By contrast, expenditure on tertiary education in Spain increased much faster than enrolments, leading to increases in expenditure per tertiary student of 26.5 per cent. Australia and Austria also experienced increases in their tertiary expenditure even as enrolments increased.

*Educational expenditure per student increased between 1990 and 1996 in most countries.*

*Tertiary education presents a mixed picture of countries' ability to keep pace with a marked increase in access.*

**B4**

**Chart B4.3. Index of changes in spending on education, enrolment and expenditure per student for primary and secondary education between 1990 and 1996 (1990 = 100)**



*In half the countries where primary and secondary enrolment went up, per student expenditure also increased.*

1. Public institutions only.

Countries are ranked in ascending order of total expenditure on institutions.

Source: OECD Education Database.

**B4 Educational Expenditure per Student***Educational expenditure per student in relation to national GDP*

*OECD countries invest an average of 20 per cent of GDP per capita per primary student, 26 per cent per secondary student and 47 per cent per tertiary student.*

Expenditure per student relative to GDP per capita is a spending measure that takes into account the number of students that a country is trying to educate, as well as its relative wealth. Since education is universal at lower levels, spending per student relative to GDP per capita at the lower levels of education can be interpreted as the resources spent on young people relative to a country's ability to pay. At higher levels of education, this measure is affected by a combination of wealth, spending and enrolment rates.

At the tertiary level, for example, countries can be relatively high on this measure if a relatively large proportion of their wealth is spent on educating a relatively small number of students. For the OECD as a whole, expenditure per student averages 20 per cent of GDP per capita at the primary level, 26 per cent at the secondary level and 47 per cent at the tertiary level.

*Poorer countries tend to spend relatively less per student...*

There is a clear positive relationship between spending per student and GDP per capita (Chart B4.4), showing that poorer countries tend to spend relatively less per student than richer countries as measured by GDP per capita.

*... but there are many exceptions.*

Although the relationship between spending per student and GDP per capita is generally positive there is considerable variation in spending per student among both richer and poorer countries. Five countries with vastly different levels of wealth per capita (Hungary, Japan, Poland, Spain and the United States) spend similar proportions of that wealth on educating the typical primary student: approximately, the OECD country mean of 20 per cent. At the primary level, spending on this measure is 6 percentage points or more above the country mean in three countries (Austria, Denmark and Sweden) and 7 percentage points below the country mean in Ireland and Mexico.

The general picture is similar in secondary education. For example, among the poorest OECD countries, Mexico spends more of its GDP per capita on educating the average secondary student (22 per cent) than a substantially wealthier country such as Ireland (19 per cent). Among the richest OECD countries, Japan and the United States spend only 24 and 25 per cent of GDP per capita on educating the average secondary student, while Austria and Switzerland spend 36 and 35 per cent respectively.

The range in spending between countries on this measure is much wider for tertiary than for primary education. For example, in Canada, Sweden and Switzerland, tertiary spending per student relative to GDP per capita is more than 15 percentage points above the OECD country mean of 47 per cent. At the other end of the scale, Denmark and Spain spend 15 percentage points or more below the OECD country mean. In the case of Denmark this can partially be explained due to exclusion of research expenditure.

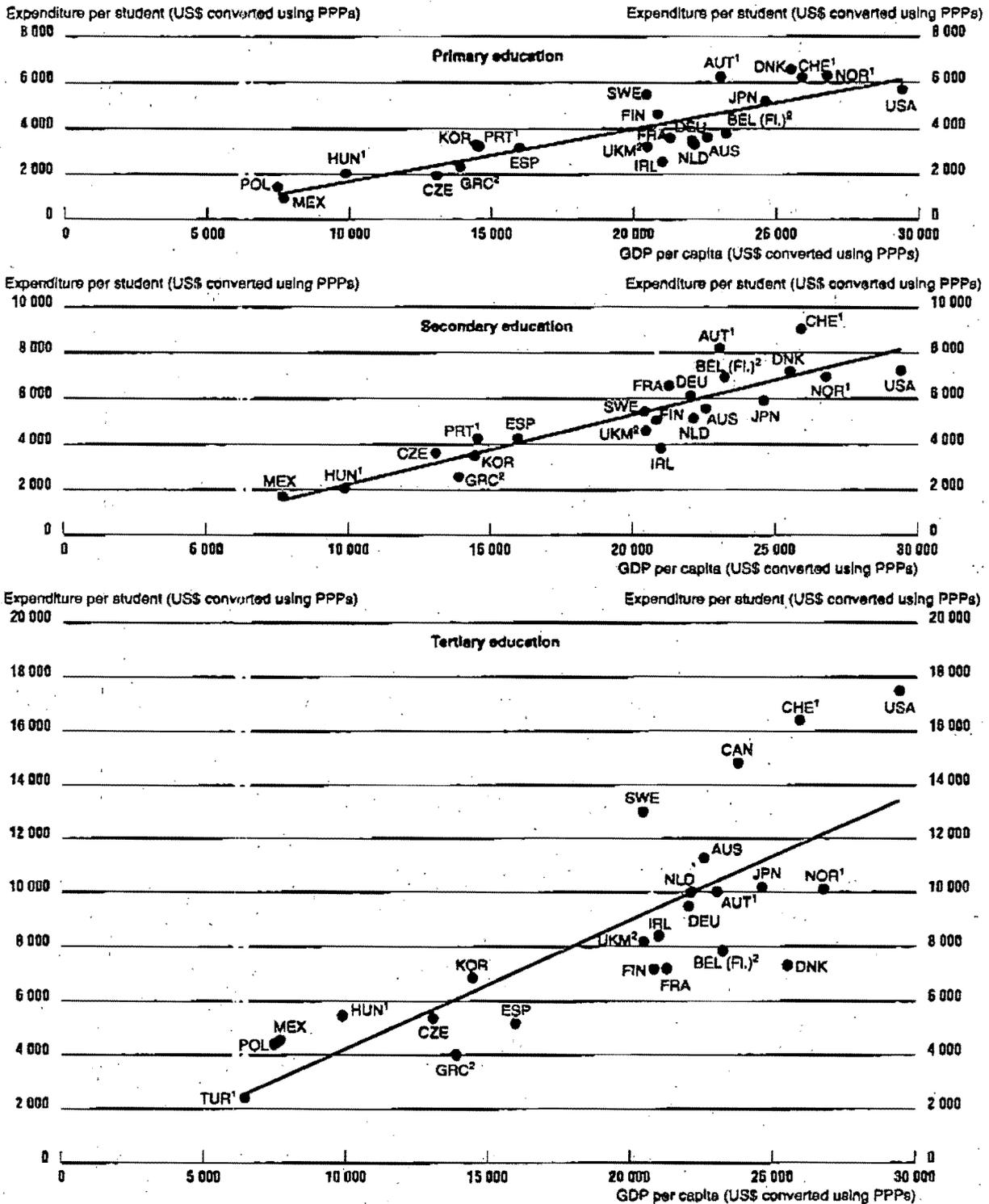
*Differences in educational expenditure per student across levels of education*

*Expenditure per student differ between countries in absolute terms, but relative spending per student also varies by level of education.*

Comparisons of the distribution of expenditure between levels of education are an indication of the relative emphasis placed on education at different levels in various countries, as well as of the relative costs of providing education at those levels. Chart B4.5 presents expenditure per student in early childhood, secondary and tertiary education relative to expenditure per primary student.

Educational Expenditure per Student

Chart B4.4. Annual educational expenditure per student in relation to GDP per capita, by level of education (1997)



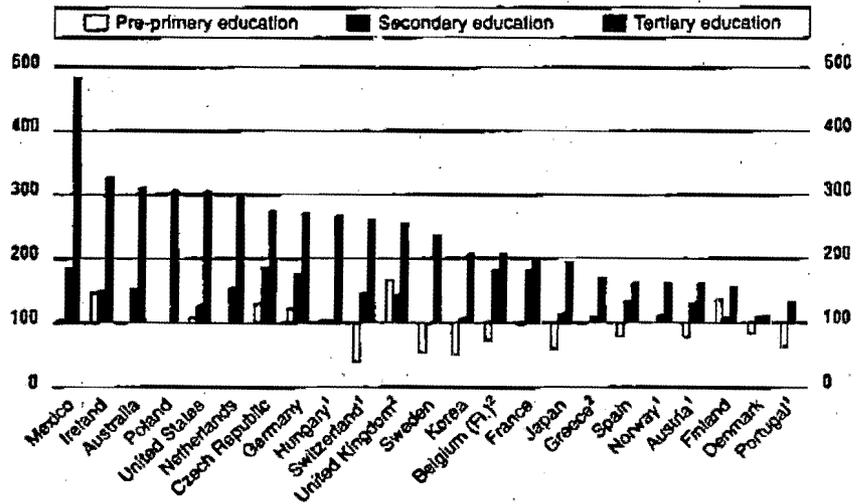
B4

1. Public Institutions.  
 2. Public and government-dependent private Institutions.  
 Source: OECD.

**B4 Educational Expenditure per Student**

**Chart B4.5. Ratio of educational expenditure per student at various levels of education to educational expenditure per student at the primary level, times 100 (1997)**

A ratio of 500 for tertiary education means that expenditure per tertiary student in a particular country is 5 times the expenditure per primary student. A ratio of 50 for pre-primary education means that expenditure per pre-primary student in a particular country is half the expenditure per primary student.



1. Public institutions.
2. Public and government-dependent private institutions.

Countries are ranked in descending order of expenditure per student in tertiary education relative to educational expenditure per student at primary level.

Source: OECD.

Although expenditure per student rises with the level of education in almost all countries, the relative sizes of the differences vary markedly between countries. At the secondary level, expenditure per student is, on average, 1.4 times that at the primary level, although the difference ranges from 1.0 times the expenditure per primary student in Sweden to more than 1.8 times in the Czech Republic, Flemish Community of Belgium, France and Mexico.

The most significant differences in spending per student by level of education occur at the tertiary level.

Although OECD countries spend, on average, 2.4 times more per student at the tertiary level than at the primary level, spending patterns vary widely between countries. For example, whereas Denmark only spends 1.1 times as much on a tertiary student as on a primary student, Mexico spends almost five times as much. These differences may even underestimate real differences in costs, as funding provided for tertiary education by private sources has not been adequately taken into account in some countries.

**Educational expenditure per student over the average duration of tertiary studies**

Annual expenditure per student does not always reflect the full cost of tertiary studies.

Since both the typical duration and the intensity of tertiary education vary between countries, the differences between countries in annual expenditure per student on educational services as shown in Chart B4.2 do not accurately reflect the variation in the total cost of educating the typical tertiary student.

## Educational Expenditure per Student

Today, students can choose from a range of types of institutions and enrolment options in order to find the best fit between their degree objectives, abilities, personal interests and social and economic circumstances. Many students attend part-time, work while enrolled, attend sporadically or attend more than one institution before graduating. These varying enrolment patterns can affect the interpretability of expenditure per student.

The ranking of countries by annual expenditure per student on educational services is strongly affected by differences in how countries define full-time, part-time and full-time equivalent enrolment. Some countries count every participant at the tertiary level as a full-time student while others determine a student's intensity of participation by the credits which he or she obtains for successful completion of specific course units during a specified reference period. Countries that can accurately account for part-time enrolment will have higher expenditure per full-time equivalent student than countries that cannot differentiate between different modes of student attendance.

Similarly, comparatively low annual expenditure per student may result in comparatively high overall costs of tertiary education if the typical duration of tertiary studies is relatively long. Table B4.4 shows the average expenditure that is incurred per student throughout the course of tertiary studies in 17 countries. The figures account for all students for whom expenditure is incurred, including those who do not finish their studies. Although the calculations are based on a number of simplifying assumptions and therefore should be treated with some caution (see Annex 3), some striking shifts in the rank order of countries between the annual and aggregate expenditure can be noted.

For example, annual spending per tertiary-type A student in the Netherlands is about the same as in Germany (US\$10 028 in the Netherlands compared with US\$10 083 in Germany). But because of differences in the tertiary degree structure (Indicator C4), the average duration of university-equivalent studies is more than one third longer in Germany than in the Netherlands (6.1 years in Germany, compared with 3.9 years in the Netherlands). As a consequence, the aggregate expenditure for each university-equivalent student is more than 50 per cent higher in Germany than in the Netherlands (US\$61 415 compared with US\$39 108).

The total cost of tertiary-type A studies in Switzerland (US\$90 298) is more than twice the cost of these studies in Australia, Canada, France, the Netherlands, and Norway. These differences must be interpreted in the light of possible differences between countries in the academic level of the qualifications of students leaving university. While similar trends are observed in tertiary-type B studies, the total cost of these studies tends to be much lower than that of tertiary type-A programmes, largely because of their shorter duration.

### Important notes on interpretation

When differences between countries in expenditure per student are interpreted, a number of factors should be taken into account.

The data used in calculating expenditure per student include only direct public and private expenditure on educational institutions. Public subsidies for students' living expenses have been excluded to ensure the international comparability of the data.

*Students can choose from a range of institutions and enrolment options.*

*Part-time attendance may explain some of the differences between countries.*

*Low annual expenditure may translate into high overall costs of tertiary education if the duration of tertiary studies is long.*

**B4**

**B4 Educational Expenditure per Student**

Expenditure data for students in private educational institutions are not available for some countries (indicated by one or two asterisks in the table). Many of the countries that have data on independent private institutions cover only a very small number of them. In such cases, only the expenditure on public and government-dependent private institutions is taken into account.

*Variation in expenditure does not always reflect variation in real resources.*

The variation in expenditure per student does not always reflect variation in real resources provided to students (for instance, variations in student/teaching staff ratios). In some cases, it reflects variation in relative prices.

**DEFINITIONS**

*Data refer to the financial year 1997 and are based on the UOE data collection on education statistics, administered in 1999 (for details see Annex 3).*

Expenditure per student on a particular level of education is calculated by dividing the total expenditure at that level by the corresponding full-time equivalent enrolment. Only those types of educational institution and programme are taken into account for which both enrolment and expenditure data are available. The enrolment data are adjusted by interpolation so as to match either the financial year or the calendar year of each country (Annex 3 gives details). The result in national currency is then converted into equivalent US dollars by dividing the national currency figure by the purchasing power parity (PPP) index. The PPP exchange rates used pertain to GDP and were derived from the OECD National Accounts Database for OECD countries and from the World Bank database for non-member countries (Annex 2 gives further details). The PPP exchange rate gives the amount of a national currency that will buy the same basket of goods and services in a given country as the US dollar in the United States. The PPP exchange rate is used because the market exchange rate is affected by many factors (interest rates, trade policies, expectations of economic growth, etc.) that have little to do with current, relative domestic purchasing power in different countries.

*Data for 1990 are expressed in 1996 prices.*

All expenditure data, as well as the GDP for 1990, are adjusted to 1996 prices using the private consumer price index.

The country mean is calculated as the simple average over all OECD countries for which data are available. The OECD total reflects the value of the indicator if the OECD region is considered as a whole (the Reader's Guide gives details).

Expenditure per student relative to GDP per capita is calculated by expressing expenditure per student in units of national currency as a percentage of GDP per capita, also in national currency. In cases where the educational expenditure data and the GDP data pertain to different reference periods, the expenditure data are adjusted to the same reference period as the GDP data, using inflation rates for the country in question (see Annex 2).

Expected expenditure over the average duration of tertiary studies (Table B4.4) is calculated by multiplying current annual expenditure by the typical duration of tertiary studies. The methodology used for the estimation of the typical duration of tertiary studies is described in Annex 3.

For the estimation of the duration of tertiary education, data are based on a special survey carried out among OECD countries in 1997.

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**Educational Expenditure per Student**

Because of the implementation of the new ISCED-97 classification, post-1996 data on educational funding are not comparable with earlier data. The data used for computing the index of change have therefore been restricted to the years 1990-96 for comparability purposes, and are based on the ISCED-76 classification. There is no reason to expect that the change in ISCED classification would affect the magnitude of the trends observed in the various countries, since both starting and ending points would be adjusted similarly.

*The data used for computing the index of change have been restricted to the years 1990-96 and are based on the ISCED-76 classification.*

**B4**

**B4 Educational Expenditure per Student****Table B4.1. Expenditure per student (US dollars converted using PPPs) on public and private institutions by level of education (based on full-time equivalents) (1997)**

	Early childhood	Primary	Lower secondary	Upper secondary	All secondary	Post-secondary non-tertiary	Tertiary		
							All	Tertiary-type B	Tertiary-type A and advanced research programmes
<b>OECD countries</b>									
Australia	m	3 633	5 012	6 443	5 570	7 437	11 240	7 852	12 024
Austria <sup>1</sup>	4 867	6 258	7 215	9 462	8 213	7 412	9 993	x	x
Belgium (Fl.) <sup>2</sup>	2 768	3 813	x	x	6 938	x	7 834	x	x
Canada	3 942	m	m	m	m	4 862	14 809	14 872	14 783
Czech Republic	2 526	1 934	3 331	4 030	3 641	1 688	5 351	2 675	6 159
Denmark	5 487	6 596	6 615	7 683	7 198	7 585	7 294	x	x
Finland	6 340	4 639	4 613	5 463	5 065	m	7 145	6 902	7 192
France	3 462	3 621	6 087	7 167	6 564	5 163	7 177	7 683	7 040
Germany	4 288	3 490	4 652	9 322	6 149	10 839	9 466	3 623	10 083
Greece <sup>2</sup>	x	2 351	x	x	2 581	183	3 990	3 848	4 045
Hungary <sup>1</sup>	2 106	2 035	1 933	2 259	2 093	1 960	5 430	m	5 430
Iceland <sup>1</sup>	3 591	m	m	m	m	m	m	m	m
Ireland	2 559	2 574	x	x	3 864	3 783	7 998	x	x
Italy <sup>1</sup>	4 462	5 073	6 716	5 983	6 284	x	5 972	5 206	5 981
Japan	3 096	5 202	5 512	6 314	5 917	x	10 157	7 750	10 623
Korea	1 676	3 308	3 374	3 652	3 318	a	6 844	4 346	8 512
Luxembourg	m	m	m	m	m	m	m	m	m
Mexico	979	935	1 443	2 320	1 726	a	4 519	x	4 519
Netherlands	3 310	3 335	5 060	4 903	4 992	x	9 989	6 862	10 028
New Zealand	m	m	m	m	m	m	m	m	m
Norway <sup>1</sup>	m	6 315	6 315	7 358	6 973	x	10 108	x	x
Poland	m	1 435	x	1 452	m	x	4 395	x	4 293
Portugal <sup>1</sup>	2 044	3 248	4 183	4 356	4 264	a	m	x	x
Spain	2 320	3 180	3 295	5 335	4 274	x	5 166	4 301	5 217
Sweden	2 943	5 491	5 468	5 417	5 437	m	12 981	x	x
Switzerland <sup>1</sup>	2 451	6 237	7 393	10 833	9 045	7 856	16 376	14 825	16 360
Turkey <sup>1</sup>	m	m	m	m	m	m	2 397	x	x
United Kingdom <sup>2</sup>	5 312	3 206	x	x	4 609	x	8 169	x	x
United States	6 158	5 718	x	x	7 230	x	17 466	x	x
<b>Country mean</b>	<b>3 463</b>	<b>3 851</b>	<b>4 791</b>	<b>5 790</b>	<b>5 273</b>	<b>5 337</b>	<b>8 612</b>	<b>7 295</b>	<b>8 434</b>
<b>OECD total</b>	<b>3 788</b>	<b>3 749</b>	<b>4 175</b>	<b>5 312</b>	<b>5 507</b>	<b>7 084</b>	<b>10 893</b>	<b>6 765</b>	<b>8 252</b>
<b>WEI participants</b>									
Argentina <sup>1</sup>	1 054	1 224	1 467	1 781	1 575	a	11 552	3 494	m
Brazil <sup>1, 3</sup>	820	859	921	1 087	1 002	a	10 791	x	10 791
Chile	1 929	2 115	2 220	2 337	2 292	a	8 775	4 616	9 820
India <sup>1</sup>	28	160	225	334	233	m	m	m	m
Jordan <sup>1</sup>	528	706	659	1 176	807	m	m	m	m
Malaysia <sup>1</sup>	332	820	x	x	1 334	6 285	7 793	6 237	9 129
Paraguay <sup>1</sup>	x	482	x	x	690	x	19 271	19 271	m
Philippines <sup>1</sup>	74	373	570	570	570	3 189	2 170	a	2 170
Uruguay <sup>1</sup>	1 104	974	979	1 536	1 221	a	2 394	4 062	2 096
Zimbabwe	m	353	x	x	647	x	m	m	m

1. Public institutions.

2. Public and government-dependent private institutions.

3. 1996 data.

Source: OECD Education Database. See Annex 3 for notes.

## Educational Expenditure per Student

Table B4.2. Expenditure per student relative to GDP per capita on public and private institutions by level of education (1997)

	Early childhood	Primary	Lower secondary	Upper secondary	All secondary	Post-secondary non-tertiary	Tertiary		
							All	Tertiary-type B	Tertiary-type A and advanced research programmes
<b>OECD countries</b>									
Australia	m	17	23	29	23	34	51	36	55
Austria <sup>1</sup>	21	27	31	41	36	32	43	x	x
Belgium (Fl.) <sup>2</sup>	12	16	x	x	29	x	33	x	x
Canada	17	x	x	x	x	20	62	63	62
Czech Republic	19	15	25	31	28	13	41	20	47
Denmark	22	26	26	30	28	30	29	x	x
Finland	31	23	23	27	25	m	35	34	35
France	16	17	29	34	31	24	34	36	33
Germany	19	16	21	42	28	49	43	26	46
Greece <sup>2</sup>	x	17	x	x	19	1	29	28	29
Hungary <sup>1</sup>	21	21	20	23	21	20	55	m	55
Iceland	14	m	m	m	m	m	m	m	m
Ireland	12	12	x	x	19	18	39	x	x
Italy <sup>1</sup>	m	m	m	m	m	m	m	m	m
Japan	13	21	22	26	24	x	41	31	43
Korea	12	23	23	25	24	a	47	30	39
Luxembourg	m	m	m	m	m	m	m	m	m
Mexico	13	12	19	30	22	8	59	x	59
Netherlands	15	15	23	22	23	x	45	31	45
New Zealand	m	m	m	m	m	m	m	m	m
Norway <sup>1</sup>	m	23	23	27	26	x	38	x	x
Poland	m	19	x	19	m	x	59	x	57
Portugal <sup>1</sup>	14	22	29	30	29	8	m	x	x
Spain	16	20	21	33	27	x	32	27	33
Sweden	14	27	27	27	27	m	64	x	x
Switzerland <sup>1</sup>	9	24	29	42	35	30	63	57	64
Turkey <sup>1</sup>	m	m	m	m	m	m	37	x	x
United Kingdom <sup>2</sup>	26	16	x	x	23	x	40	x	x
United States	21	19	x	x	25	x	59	x	x
<b>Country mean</b>	<b>17</b>	<b>19</b>	<b>24</b>	<b>30</b>	<b>26</b>	<b>19</b>	<b>45</b>	<b>35</b>	<b>48</b>
<b>OECD total</b>	<b>17</b>	<b>18</b>	<b>23</b>	<b>29</b>	<b>25</b>	<b>33</b>	<b>49</b>	<b>34</b>	<b>47</b>
<b>WEI participants</b>									
Argentina <sup>1</sup>	10	12	14	17	15	a	112	34	m
Brazil <sup>1,3</sup>	13	13	14	17	16	a	167	x	167
Chile	15	17	17	18	18	a	69	36	77
India <sup>1</sup>	2	10	14	20	15	m	m	m	m
Jordan <sup>1</sup>	15	21	19	34	23	m	m	m	m
Malaysia <sup>1</sup>	4	10	x	x	16	77	96	77	112
Paraguay <sup>1</sup>	x	12	x	x	17	x	484	484	m
Philippines <sup>1</sup>	2	11	16	16	16	91	62	0	62
Uruguay <sup>1</sup>	12	11	11	17	13	a	26	44	23
Zimbabwe	m	15	x	x	28	x	m	m	m

1. Public institutions.

2. Public and government-dependent private institutions.

3. 1996 data.

Source: OECD Education Database. See Annex 3 for notes.

B4

**B4** Educational Expenditure per Student

Table B4.3. Index of change in spending on education, enrolment and expenditure per student between 1990 and 1996 (1990 = 100)

	Primary and secondary education			Tertiary education		
	Total expenditure on institutions	Enrolment	Expenditure per student	Total expenditure on institutions	Enrolment	Expenditure per student
Australia	119	104	114	147	129	114
Austria <sup>1</sup>	126	105	120	129	118	109
Belgium (Fl.)	109	m	m	109	m	m
Canada	112	108	104	112	121	93
Czech Republic	m	134	m	m	190	m
Denmark	m	m	m	m	m	m
Finland	90	104	86	128	130	98
France	112	99	113	129	129	100
Germany	m	m	m	m	m	m
Hungary	62	m	m	70	m	m
Iceland	m	m	m	m	m	m
Ireland	131	97	136	166	156	107
Israel	m	112	m	m	m	m
Italy	84	89	93	89	126	70
Japan	m	m	m	m	m	m
Korea	m	89	m	m	139	m
Mexico	174	104	166	123	122	101
Netherlands	108	98	110	100	113	89
New Zealand	m	108	m	m	150	m
Norway	111	97	114	139	148	94
Poland	m	m	m	m	m	m
Portugal	137	89	153	149	268	56
Spain <sup>1</sup>	114	91	123	143	113	127
Switzerland <sup>1</sup>	108	106	101	99	116	86
Turkey	m	m	m	m	m	m
United Kingdom	110	109	101	148	176	84
United States	m	m	m	m	m	m

Note: All data are classified according to ISCED-76.

1. Public institutions only.

Source: OECD Education Database. See Annex 3 for notes.

## Educational Expenditure per Student

Table B4.4. Expenditure per student over the average duration of tertiary studies (1997)

Country	Method <sup>1</sup>	Average duration of tertiary studies (in years)			Cumulative expenditure per student over the average duration of tertiary studies		
		All	Tertiary-type B	Tertiary-type A and advanced research programmes	All	Tertiary-type B	Tertiary-type A and advanced research programmes
Austria <sup>2</sup>	AF	6.4	2.3	7.4	63 957	x	x
Canada	CM	1.9	1.4	2.5	27 831	20 591	37 156
Denmark	AF	4.2	2.1	4.4	30 563	x	x
France	AF	4.7	2.8	5.3	33 597	21 265	37 351
Germany	CM	5.1	2.2	6.1	47 901	12 469	61 415
Greece <sup>3</sup>	CM	6.1	5.0	6.9	24 180	19 365	27 832
Hungary <sup>2</sup>	CM	3.9	a	3.9	21 127	m	21 127
Ireland	CM	2.6	2.0	3.0	21 601	x	x
Italy <sup>2</sup>	CM	4.2	1.1	4.9	m	m	m
Korea	CM	3.4	2.1	4.2	23 476	8 996	35 919
Mexico	AF	3.4	x	3.4	15 466	x	15 455
Netherlands	CM	3.9	a	3.9	38 959	a	39 108
Norway <sup>2</sup>	AF	3.3	2.5	4.0	33 053	x	x
Spain	AF	4.6	1.5	4.7	23 507	6 404	24 555
Switzerland <sup>2</sup>	CM	3.6	2.2	5.5	59 351	32 420	90 298
United Kingdom <sup>3</sup>	CM	3.4	1.8	3.5	27 774	x	x
<b>Country mean</b>		<b>4.1</b>	<b>1.9</b>	<b>4.5</b>	<b>32 824</b>	<b>-</b>	<b>-</b>
<b>OECD total</b>		<b>4.2</b>	<b>1.8</b>	<b>4.4</b>	<b>29 979</b>	<b>-</b>	<b>-</b>

Note: The duration of tertiary studies is obtained by a special survey conducted in 1997 for the academic year 1995. Programmes were classified according to ISCED-76.

1. Either the Chain Method (CM) or an Approximation Formula (AF) was used to estimate the duration of tertiary studies.
2. Public institutions.
3. Public and government-dependent private institutions.

Source: OECD Education Database. See Annex 3 for notes.

B4



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**First day for city's all-year school**

**Attendance was strong at the unique new middle school. However, there was some confusion.**

**By Susan Snyder**  
INQUIRER STAFF WRITER

The first thing Freddy Reyes learned at school yesterday was that he wasn't going home, at least not right away.

"I thought I was just going to sign a paper and leave. I thought I was going home to play with my play station," the seventh grader said, pointing out that it is summer.

But he, along with some parents and other students, found out that it was more than registration day at the yet-to-be-named new middle school at B Street and Olney Avenue. Classes began yesterday at the first school in the Philadelphia district with a year-round calendar.

Despite some confusion, attendance hit 91 percent at the 700-student school. Average attendance in the district is about 87 percent.

"We're doing better than the Nasdaq," principal Michael Rosenberg said. "I'm totally shocked for the first day of school."

Rosenberg said district officials did all they could to inform parents: They sought publicity in newspapers, offered several meetings last school year, mailed letters, and sent information home with students at Lowell Elementary, the middle school's primary feeder.

They also sponsored an open house on Saturday at which they gave tours of the \$24 million school, complete with Internet hookups in each classroom, several computer and technology labs, outdoor and indoor cafeteria areas, an Olympic-size gymnasium, a specially designed auditorium with acoustics for theater, and a soon-to-be-installed fitness center.

But Rosenberg said school officials realized they still would

need to spend time educating parents and students about the new calendar and its benefits.

The fifth-, sixth- and seventh-grade students will attend classes 180 days a year, the same number as other students in the district. Their vacations, however, will be spread throughout the year instead of concentrated in the summer.

During vacations, students will have the option of attending "intersessions" that include remedial classes and enrichment programs. The first intersession is scheduled for early October.

The school also will alleviate crowding in the Fels cluster. For seven years, the cluster has had to bus about 700 students to schools elsewhere in the district because of lack of space. For some students, the bus ride was nearly an hour long.

"I just found out last night," said parent Anita Norwood, who works at a nearby supermarket. "I called up work and said I'm not coming in today. I'm taking my daughter to school and spending the day."

She heard about the early school start from her daughter's friend.

"This is great. I couldn't wait to get here," Norwood said, watching her daughter's class.

Although some students expressed mild disappointment at starting so early, many parents and students considered it a plus.

"When I was in school, we pretty much forgot what we learned all year long over the summer. This is a better chance for these children. It's the start of something new," said John Perkins, a correctional officer in the Philadelphia prison system. He has a sixth grader at the school.

Linda Robinson, president of the parents' group at Lowell, supports the new calendar but said parents still had mixed emotions. They are questioning the impact on summer vacations and how beneficial the intersessions will be. Robinson, who has a daughter at the new school, attended Saturday's open house.

"One parent said to me, 'My child is not going to come on Monday. My child's at summer camp, and I already paid for it,' " she said.

Rosenberg said the school was working with parents with special circumstances.

"One parent said, 'I'm sending my kid to Puerto Rico to visit with a grandmother for two weeks.' Fine. We'll use the intersession time to support them," he said. "We've allowed

for a lot of flexibility."

Teachers who opted for assignment at the school were enthusiastic. The staff will be paid regular teachers' salaries with the option of additional money for working any of the 29 intersession days. The staff includes a mix of veterans who transferred from other schools and those just out of college.

Harris Neiburg, a special-education teacher with 27 years in the district, said he became frustrated when his students fell behind after a long summer. He wanted to try something new.

Although the new calendar is like "heaven" to her, seventh-grade teacher Willette Jones knew it would take a little persuasion to get her students to understand being in school while other children may still be out playing.

She informed them that more than two million students nationwide were in year-round schools. She also tested students' knowledge: "True or false. Students in year-round education get no vacations."

"False," student Chandra Holloway said. "If we don't have vacation, we won't get all that excitement out of our systems and we'll be all acting up and bad."

Jones told the students they would get to visit museums and other places during intersessions. That made several of them smile.

When she finished the lesson, she asked the students what they had learned.

"We get interceptions," Saadiq Garner said.

Jones laughed. "Intersessions," she clarified. "We're getting there."

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## Year-round schools come into their own in Valley

By Kristen Go  
The Arizona Republic  
July 27, 2000

Forget about long summer vacations. Many schools throughout the Valley have already started their new year and are part of a growing trend favoring a year-round calendar.

"We are seeing more schools opting for a balanced calendar in terms of cutting down on summer vacation," said Marilyn Stenvall, executive director of the National Association for Year-Round Education.

In 1990, Mobile Elementary School near Maricopa was the only Arizona school on a year-round schedule, Stenvall said. During the 1999-2000 school year, 160 Arizona schools were on a year-round calendar, making it the state with the second-highest number of year-round schools, behind California.

Arizona's statistics mirror a nationwide trend. From 1990 to 1999, nearly 3,000 schools switched to a year-round schedule.

Parents and students don't seem to mind the shortened summers. Stenvall said that more schools will likely switch to year-round schedules. She said such calendars help children remember what they learn.

"They won't collect dust on their brains," said Frank Okamura, who was waiting for his second-grade daughter, Kathleen, after her first day back at Udall Elementary School in west Phoenix.

Other parents and students agree.

"I miss doing homework," said Maria Escobedo, a Udall seventh-grader.

Laura Ford and her family moved from northern Virginia to Chandler four years ago. Chandler schools are on a modified-traditional schedule, which is considered a year-round school. Students receive 45 days of instruction and



Peter Schwepker/The Arizona Republic  
Jessica Hammond, 10, broke her leg two weeks ago in a bike accident and got to start her first day of school on crutches.

New azce  
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~~then 10 days of vacation each quarter.~~

Ford said she and her family at first were skeptical. But she's found that both she and her children, who attend Hamilton High and Shumway Elementary schools, enjoy the change.

"It works really nice for our family," she said. "Particularly for our high school son. He really looks forward to the break every quarter.

"It's very motivating because you know at the end that you get a two-week break. Academically, he does a better job staying focused knowing he has a big vacation coming up."

Chandler Unified School District switched all of its schools to a modified-traditional start three years ago. Before that, the district had used various year-round and traditional calendars. District spokesperson Terry Locke said that like many other districts, Chandler wanted to help students learn more and thought the modified calendar was a good solution.

People think the new approach will disrupt their lives, but that doesn't happen as much as they expect, Stenvall said.

~~"One of the myths about year-round schools is that students go to school every day of the year," Stenvall said. "People hear 'year-round' and they say, 'Good heavens!'"~~

Karen Alexander, principal at Mobile Elementary, between Maricopa and Gila Bend, said that 12 years ago, her district decided to give the new method a try. If the community didn't like it, the school would switch back to a traditional schedule.

Twelve years later, Mobile is still operating on a year-round schedule. She said her rural school, which houses 20 pupils, breaks the monotony of what could be a long summer.

~~Elsewhere, however, parents have discovered that finding child care for year-round schedules can be difficult.~~

"It's easier for parents to find day care for the three-month summer period than to find someone willing to take the kids on the two-week intercessions," said Carol Rozinski, whose children attend Humphrey Elementary School in Chandler.

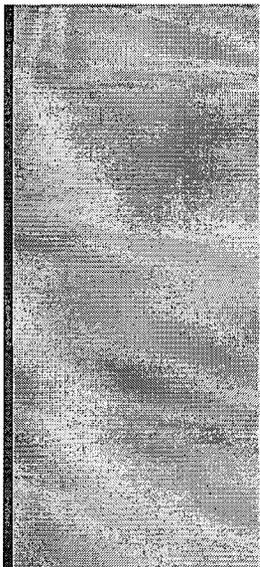
Rozinski is a day-care provider. She said that during intercession, she can't take on additional children because her own children are on break.

Jodi Hammond, whose two daughters attend Udall Elementary, is still worried about finding day care for her children in the fall. But despite her worries, she's glad her daughters attend a year-round school.

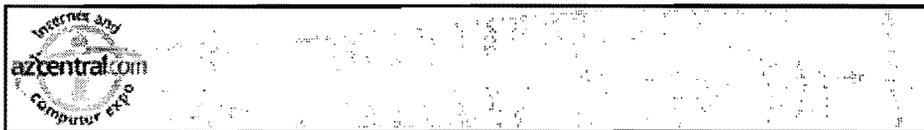
"They don't forget as much over the summer," she said.

Alexander said that with higher retention rates, she believes that more educators will look toward year-round schedules.

"I'm just in favor of it so much," Alexander said. "I just see a trend for schools going this way."



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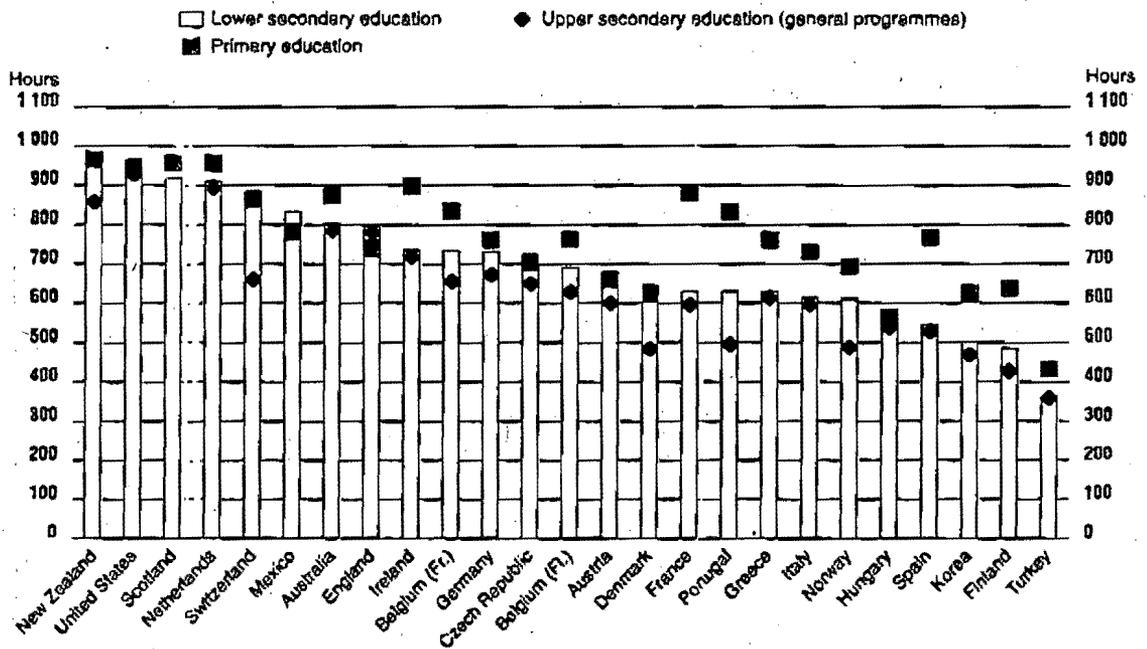
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of Ed. at a Glance and an example  
indicator

Indicators D3 & D4

# TEACHING TIME

- Teaching time affects the amount of time available for planning and other professional activities, and is related to motivational aspects of the teaching profession.
- In both primary and secondary education, countries vary widely in the number of teaching hours per year for the average public school teacher. Teachers in some countries spend twice as much time teaching than teachers in other countries.
- In primary education teaching hours are typically higher than in secondary education.

Chart D3.1. Statutory number of teaching hours per year in public institutions, by level of education (1998)



D3

Countries are ranked in descending order of the number of teaching hours in lower secondary schools.  
 Source: OECD.

## ■ POLICY CONTEXT

Together with factors such as student/teaching staff ratios, students' hours of instruction and teachers' salaries, the amount of time teachers spend teaching influences the financial resources which have to be devoted to education. At the same time, teaching time is an important element of teachers' working conditions. It affects the amount of time available for planning and other professional activities, and is also related to motivational aspects of the teaching profession. The proportion of working time associated with teaching can be interpreted as a measure of teachers' workload. It provides information on the amount of time available for other activities, such as lesson preparation, correction, in-service training and staff meetings.

## ■ EVIDENCE AND EXPLANATIONS

In both primary and secondary education, countries vary in the number of teaching hours per year required of the average public school teacher. In primary education teaching hours are usually higher than in secondary education.

In most countries, teaching hours are higher in primary education than in lower secondary and upper secondary education. The average number of teaching hours in primary education is 788, in contrast to 700 hours in lower secondary education. In upper secondary education the mean is lower still, 642 hours in general programmes and 678 hours in vocational programmes.

In primary education the number of teaching hours per year ranges from 583 in Hungary to 985 in New Zealand. In lower secondary schools, it ranges from 502 in Korea to 985 in New Zealand. In upper secondary education, hours range in general programmes from 428 hours in Finland to 943 hours in the United States, and in vocational programmes between 497 in Korea and 1 008 in Belgium (French Community).

In Hungary and Turkey the number of teaching hours per year is comparatively low at all levels of education reported (around 580 hours or less), while in the Netherlands, New Zealand and the United States it is high (900 hours or more). In Finland and Korea teaching hours are low in secondary education (both at the lower secondary and the upper secondary level). In Belgium teaching hours are high in upper secondary vocational education (around 950 hours or more) (see Table D3.1).

Although in some countries a teacher's school day is spent almost exclusively teaching, in other countries, teachers are also formally required to spend some time every day/week working on non-teaching activities. This non-teaching time can be devoted to activities such as preparation of lessons, correction of assignments and tests, professional development, support of students, and meetings with parents.

The structure of teachers' working time varies widely between countries, making it difficult to establish an internationally comparable measure of working time. In some countries, teachers are required to be at school for a mandatory number of hours each week, while in others they are simply expected to work a specific amount of time, whether at home or at school. In

*This indicator shows the number of hours per year a full-time classroom teacher is required to spend teaching and highlights the relationship between teaching time and working time across OECD countries.*

*Teachers in some countries spend up to twice as much time teaching as teachers in other countries.*

*At all levels of education, teaching hours in Hungary and Turkey are comparatively low.*

*In most countries, formal working hours exceed teaching time.*

*While statutory teaching time is relatively easy to measure, total working time is not.*

**D3**

**D3 Teaching Time**

*In some countries teachers are required to work a specific number of hours per week, at home or at school, in order to earn their full-time salary...*

*... while in other countries teachers are required to be at school for a specific number of hours each week, both for teaching and for non-teaching activities.*

*In Belgium, Finland, France, Germany and Portugal teachers are required to be at school only for the hours that they are scheduled to teach.*

*Variation in the amount of time that 8th-grade mathematics teachers are required to spend on teaching and on non-teaching activities.*

*The amount of time formally required for non-teaching activities varies more between countries than teaching time.*

order to earn a full time salary. While teachers' working time is not directly comparable across these organisational models, data on working time can give an indication of the level of effort formally required of teachers in different countries.

In the Czech Republic, Denmark, Greece, Hungary, Korea, the Netherlands, Norway, Spain and Sweden full-time teachers are required to work a specific number of hours per week, (including both teaching activities and non-teaching activities) in order to earn their full-time salary. The working hours may be spent at school or outside school, although in Spain at least 30 of the 37.5 hours must be spent at school according to formal policy. Specified working hours per week are lowest in Denmark, Spain and Greece (around 37 hours) and highest in Korea and Norway (44 hours). But in Norway the relatively high number of working hours per week is combined with a relatively low number of working weeks.

In Australia and Scotland full-time teachers are required to spend a specific number of working hours at school per week (38 and 27.5 hours respectively). In Ireland teachers at ISCED levels 0 and 1 are required to be at school for the whole school day (5 hours and 40 minutes per day) including break time and the lunch period when they supervise the pupils. In Mexico and New Zealand it is only at ISCED level 1 that full-time teachers are required to spend a specific number of working hours (both 25 hours) per week at school. In lower secondary education and upper secondary general education teachers in New Zealand can set their own working hours on the basis of the number of classes that they are assigned to teach.

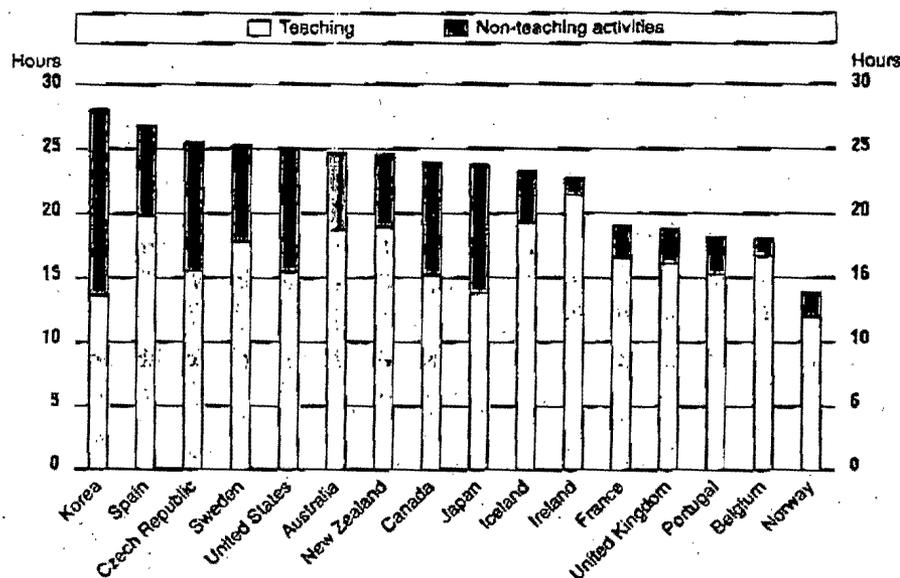
In Belgium, Finland, France, Germany and Portugal full-time teachers are only required to be at school for the specified number of teaching hours. In Ireland, this is also the case for teachers at ISCED level 2 and 3. There is no requirement as to how much time they must spend on non-teaching activities each week. In Germany there is no mandatory or formal amount of time that teachers must spend working, but there is a customary amount of time (38.5 or 40 hours) worked by all civil servants. In the United States, teachers' working hours are set at the local or school level. The average number of working hours per week is 33.6 hours.

An alternative source of information on teaching and working comes from a survey of teachers. In the Third International Mathematics and Science Study (TIMSS), the mathematics teachers of 8th-grade students were asked about the amount of time that they are formally required to spend on teaching and on non-teaching activities. In most OECD countries participating in TIMSS, the mathematics teachers of 8th-grade students reported teaching, on average, between 15 and 18 hours per week. Teachers in Korea and Norway taught less (13.6 and 12 hours, respectively) while teachers in Ireland and the Netherlands taught more than 20 hours per week.

Variation between countries in the total amount of time that teachers are formally expected to work each week is primarily determined by the amount of time prescribed for non-teaching activities. Among the 17 countries for which data are available from TIMSS, the total scheduled time of 8th-grade mathematics teachers varies between 13 hours in Hungary and 28 hours in Korea. In five countries, teachers spend more than 25 hours in school (the Czech Republic, Korea, Spain, Sweden and the United States).

## Teaching Time

**Chart D3.2. Number of hours in the school week that 8th-grade mathematics teachers have formally scheduled for teaching and non-teaching activities (1995)**



*The TIMSS survey shows that in general teachers also spend a significant amount of time working in addition to their formally scheduled hours, e.g. attending conferences or correcting of students' work, which is not represented in this chart.*

Source: International Association for the Evaluation of Educational Achievement (IEA)/TIMSS. For notes see Annex 3.

**D3**

There is more uniformity between countries in the number of hours that mathematics teachers have scheduled to teach than in the amount of time they are formally required to spend on non-teaching activities. In half of the countries, mathematics teachers have formally scheduled less than four hours per week, on average, on non-teaching activities, while in eight countries this amounts to seven hours or more.

In Belgium, Ireland and Norway, the teachers of 8th-grade mathematics students reported that they spent less than two hours of formally scheduled time, on average, on non-teaching activities, while in the Czech Republic, Hungary, Japan, Korea and the United States teachers spent about ten hours or more. The latter countries, along with Canada and Sweden, tend to have the largest proportion of formally scheduled time devoted to curriculum planning.

In most countries, however, non-teaching time is devoted to supervision of students. The amount of time that teachers of 8th-grade mathematics students spend on student supervision is primarily affected by two factors: 1) the degree to which other school staff monitor students during non-teaching time, 2) the degree to which students are required to be at school during non-teaching time.

*The teachers of 8th-grade mathematics students in some countries spend 10 hours per week or more on non-teaching activities.*

*Formally scheduled non-teaching time is primarily devoted to supervision of students.*

**D3 Teaching Time****DEFINITIONS***Teaching time*

Teaching time is defined as the total number of hours per year for which a full-time classroom teacher is formally responsible for teaching a group or class of students. Periods of time formally allowed for breaks between lessons or groups of lessons are excluded. Deviations from this definition are reported in Annex 3.

*Working time*

Working time refers to the normal working hours of a full-time teacher. It varies widely across OECD countries. According to the formal policy in a given country working time can refer:

- only to the time directly associated with teaching (and other curricular activities for students such as assignments and tests, but excluding annual examinations);
- or to time directly associated with teaching and to hours devoted to other activities related to teaching, such as lesson preparation, counselling of students, correction of assignments and tests, professional development, meetings with parents, staff meetings and general school tasks.

It does not include paid overtime. The different perceptions of working time are reported in Annex 3.

*Data are from the 1999 OECD/INES survey on Teachers and the Curriculum and refer to the school year 1997/98. They are reported in accordance with formal policies for public institutions.*

Teaching hours per year are calculated on the basis of teaching hours per day multiplied by the number of teaching days per year, or on the basis of teaching hours per week multiplied by the number of weeks per year when schools are open for teaching. The hours per year that are accounted for by days when schools are closed for festivities and celebrations are excluded.

If teaching hours are not formally prescribed at the central or regional level in a particular country, survey data on the amount of time that teachers actually spend teaching has been substituted (e.g., in the United States). See Annex 3 for a discussion of data sources.

## Teaching Time

Table D3.1. Number of teaching hours per year in public institutions by level of education (1998)

	Primary education (ISCED 1)	Lower secondary education (ISCED 2)	Upper secondary education (ISCED 3) general programmes	Upper secondary education (ISCED 3) vocational programmes
Australia	893	802	802	m
Austria	678	651	616	629
Belgium (Fl.)	781	691	644	947
Belgium (Fr.)	854	733	671	1 008
Czech Republic	724	695	666	666
Denmark	644	644	500	680
England	760	798	798	m
Finland	656	485	428	m
France	899	629	611	611
Germany	781	732	688	696
Greece	780	629	629	629
Hungary	583	555	555	555
Ireland	915	735	735	m
Italy	748	612	612	612
Korea	644	502	486	497
Mexico	800	832	m	m
Netherlands	975	910	910	875
Norway	713	611	505	589
New Zealand	985	985	874	a
Portugal	850	629	512	512
Scotland	975	917	x	a
Spain	788	545	545	545
Switzerland	883	860	676	726
Turkey	432	360	360	486
United States	958	964	943	943
<b>Country mean</b>	<b>788</b>	<b>700</b>	<b>642</b>	<b>678</b>

Source: OECD Education Database. See Annex 3 for notes.

D3

**D3 Teaching Time**

Table D3.2. How working time is organised (1998)

1. Full-time teachers work a specified number of hours per week to earn their full-time salary, including non-teaching activities.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
Czech Republic	42.5	42.5	42.5	42.5	42.5
Denmark	37.0	37.0	37.0	37.0	
Greece	37.5	37.5	37.5	37.5	37.5
Hungary	40.0	40.0	40.0	40.0	40.0
Korea		44.0	44.0	44.0	44.0
Netherlands	38.0	38.0	38.0	38.0	38.0
Norway		44.0	44.0	44.0	44.0
Spain	37.5	37.5	37.5	37.5	37.5
Sweden		40.0	40.0	40.0	40.0
2. Full-time teachers are required to be at school for a specified number of hours per week to earn their full-time salary, including non-teaching activities.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
Australia		38.0	38.0	38.0	
England		33.3	33.3	33.3	
Ireland	28.3	28.3			
Mexico	20.0	25.0			
New Zealand		25.0			
Scotland		27.5	27.5		
3. Full-time teachers are only required to be at school for a specified number of teaching hours. There is no requirement for how much time must be spent on non-instructional activities.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
Austria			m	m	m
Belgium (Fl.)	21.7	21.7	19.2	17.9	26.3
Belgium (Fr.)	21.7	21.7	19.2	17.9	26.3
Finland	17.3	17.3	17.3	17.3	
France	27.0	27.0	18.4	18.4	18.4
Ireland			22.0	22.0	
Italy	a	a	a	a	a
Portugal	30.0	28.0	31.3	31.6	31.6
4. There is no mandatory or formal amount of time that teachers must spend working, but there is a customary amount of time that all civil servants work.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
Australia	37.5				
Germany	38.5	38.5	38.5	38.5	38.5
5. Teachers' working hours are set at the local or school level. It is possible to calculate an average across these decision-making units.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
New Zealand	22.5				
United States		33.6	33.6	33.6	33.6
6. Teachers set their own working hours, based on the number of classes they are assigned to teach.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
New Zealand			25.0	26.0	
7. Other.					
	ISCED 0	ISCED 1	ISCED 2	ISCED 3 general	ISCED 3 vocational
Mexico			25.0		

Source: OECD Education Database. See Annex 3 for notes.

## Teaching Time

Table D3.3. Number of hours in the school week that 8th-grade students' mathematics teachers have formally scheduled for teaching and non-teaching activities (1995)

	Teaching activities	Non-teaching activities					Total hours	
		Student supervision	Student counselling	Administrative duties	Individual curriculum planning	Co-operative curriculum planning		Non-student contact time
Australia	18.7	2.8	0.3	1.1	0.5	0.1	1.3	24.7
Austria	r 16.4	m	m	m	m	m	m	m
Belgium	r 16.7	r 0.4	0.3	0.3	r 0.1	0.0	r 0.3	18.0
Canada	15.2	3.4	0.7	0.7	2.0	0.6	1.4	24.0
Czech Republic	15.5	1.5	0.6	1.6	4.7	0.3	1.3	25.5
Denmark	13.7	m	m	m	m	m	m	m
France	16.5	s 0.1	s 0.6	s 0.0	s 0.0	s 0.1	s 1.7	19.0
Hungary	m	1.8	2.6	1.6	4.8	m	2.2	12.9
Iceland	r 19.3	r 0.8	s 0.4	r 1.3	r 0.4	r 0.3	r 0.8	23.3
Ireland	21.4	0.5	0.1	0.5	0.0	0.0	0.2	22.7
Japan	13.8	1.9	1.6	1.9	2.3	0.3	1.9	23.8
Korea	13.6	4.9	2.2	3.0	2.8	0.4	1.2	28.0
Netherlands	20.5	m	m	m	m	m	m	m
New Zealand	19.0	2.0	0.3	1.3	0.5	0.1	1.5	24.6
Norway	12.0	0.8	r 0.4	r 0.6	m	m	m	13.8
Portugal	15.2	0.7	0.7	0.5	0.2	0.2	0.6	18.2
Spain	19.8	1.4	1.0	1.4	0.8	0.8	1.7	26.8
Sweden	17.8	2.0	0.1	0.9	2.4	0.9	1.1	25.3
Switzerland	17.6	m	m	m	m	m	m	m
United Kingdom <sup>1</sup>	s 16.1	s 0.2	s 0.2	s 0.5	s 0.1	s 0.1	s 1.7	18.9
United States	15.5	4.8	0.4	0.3	2.0	1.1	0.9	25.1

Note: An "r" indicates that data for mathematics teachers are only available for 70-84% of 8th-grade students.

An "s" indicates that data for mathematics teachers are only available for 50-69% of 8th-grade students.

1. Only England.

Source: International Association for the Evaluation of Educational Achievement (IEA)/TIMSS.

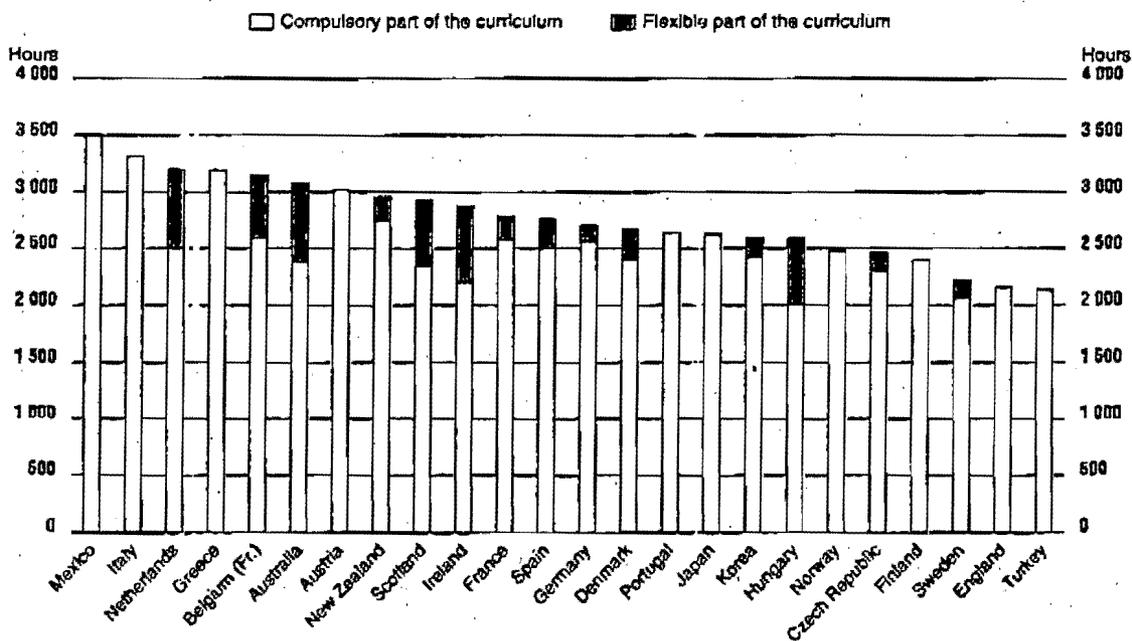
**D3**

## TOTAL INTENDED INSTRUCTION TIME FOR PUPILS IN LOWER SECONDARY EDUCATION

- Intended instruction time refers to the number of full hours of instruction during the three-year-period during which pupils are aged 12 to 14.
- Total intended instruction time varies considerably across countries. It is longest in Italy and Mexico (3 315 and 3 500 hours respectively), and shortest in Turkey and England (2 136 and 2 160 hours respectively).
- The difference between Mexico and Turkey (1 364 hours) corresponds to more than a full year of instruction in Mexico.

Chart D4.1. Intended Instruction time between the ages of 12 and 14 divided into compulsory and flexible parts of the curriculum (1998)

**D4**



Countries are ranked in descending order of the total intended instruction time between the ages of 12 and 14.

Source: OECD.

## Total Intended Instruction Time for Pupils in Lower Secondary Education

### ■ POLICY CONTEXT

Instruction time is the main resource invested in the process of education. Policy-makers seeking to improve educational outcomes often seek to increase the amount of time for which students are engaged in learning activities. However tight budgets and strong teachers' unions may restrict the changes that can be achieved by policy-makers.

The instruction time that can be devoted to each student is closely related to factors such as class size, teaching time (Indicator D3) and student/teaching staff ratios (Indicator B7). The optimal balance between these factors may vary for different subject areas and levels of education.

The indicator will compare intended instruction time for students, both compulsory time (*i.e.* core subjects that all students must take) and flexible time (when there is a choice of subject-matter). The total, aggregate, number of intended hours of instruction for all three grades in which the majority of pupils are 12, 13 and 14 years of age is presented, as well as the breakdown of intended instruction time by major subject areas. The indicator will also discuss the degree to which the "intended curriculum" applies to all streams in which 14-year-old students can be enrolled.

*This indicator shows the total number of intended hours of instruction for all three grades in which the majority of pupils are 12, 13 and 14 years of age.*

### ■ EVIDENCE AND EXPLANATIONS

Intended instruction time refers to the number of hours during which pupils aged 12, 13 and 14 years are given instruction over three years in both the compulsory and the flexible parts of the curriculum. In many cases, the actual amount of time that students spend in instruction does not fully correspond to the intended instruction time. Time may be lost because of a lack of qualified substitutes for absent teachers or student absences. School closures for examinations, teachers' meetings or inclement weather may also reduce actual instruction time. Furthermore, intended instruction time can also vary from year to year. Changes to the curriculum or to the required number of teaching hours and variability in the length of holiday periods all directly increase or reduce intended instruction time. In some countries, there is even variation between regions or between different types of school.

*The total, aggregate, number of intended hours of instruction between the ages of 12 and 14 is calculated by multiplying the total intended number of lessons in the three years by the duration of one lesson.*

**D4**

Total intended instruction time for pupils aged 12 to 14-years inclusive, aggregated over three years, ranges from 2 136 hours in Turkey to 3 500 hours in Mexico. The mean over three years is 2 768 hours.

Among OECD countries, intended instruction time in mathematics and science over three years varies considerably from 550 hours or less in Finland, Norway and Turkey, to around 890 hours in Austria and New Zealand, and 1 167 hours in Mexico. The mean intended instruction time is 670 hours (Table D4.1b).

*Intended instruction time in mathematics and science over 3 years ranges from 504 hours to 1 167 hours among OECD countries.*

On average across OECD countries, about 39 per cent of instruction time is devoted to three basic subject areas: reading and writing in the mother tongue (15 per cent), mathematics (13 per cent) and science (11 per cent). The next highest percentages of instruction time are devoted to the modern foreign languages (11 per cent) and social studies (12 per cent). The smallest percentages of instruction time are devoted to vocational skills (2 per cent), religion (3 per cent) and technology (5 per cent). Arts and physical education receive 8 per cent each, and other subjects 5 per cent.

*Across OECD countries, reading and writing in the mother tongue, mathematics, and science comprise 39 per cent of the total intended instruction time.*

**D4 Total Intended Instruction Time for Pupils in Lower Secondary Education**

*Countries vary in the proportion of instruction time devoted to different subject areas.*

In Denmark, Ireland, Italy and Sweden at least 20 per cent of intended instruction time is devoted to reading and writing in the mother tongue (In Ireland time devoted to teaching Irish and English is included), whereas in the Netherlands only 10 per cent of instruction time is devoted to this subject. In Germany 21 per cent of the instruction time is devoted to modern foreign languages, while in Australia, New Zealand and the United States this figure is only 6, 4 and 7 per cent, respectively.

In Mexico, the greatest proportion of instruction time is dedicated to science and social studies (19 and 18 per cent, respectively). In the Czech Republic, Ireland and Portugal social studies also receive 17 per cent or more of total instruction time, more than the OECD mean for social studies (12 per cent).

In 10 out of 26 OECD countries for which comparable data are available, 10 per cent or more of total intended instruction time is regarded as flexible. In the other countries, the time allotted to the different sections of the curriculum in lower secondary education is to a large extent prescribed.

Although the amount of time that students spend studying different subjects in lower secondary education is prescribed in most countries, some have a sizeable degree of flexibility.

In Austria, England, Finland, Greece, Italy, Mexico, Norway, Portugal, Turkey and the United States, the entire curriculum is prescribed (although students may have limited choice within broad prescriptions as in the United States, for example). In other countries a substantial part is flexible: Belgium (Flemish Community) (30 per cent), Australia, Ireland (both 23 per cent), Hungary, the Netherlands (22 per cent) and Scotland (20 per cent). This flexible part mainly comprises optional subjects (see Annex 3 for details). In some countries, curricula vary between regions or types of school.

*In most countries, each of the streams in which a 14-year-old student can be enrolled has a prescribed curriculum.*

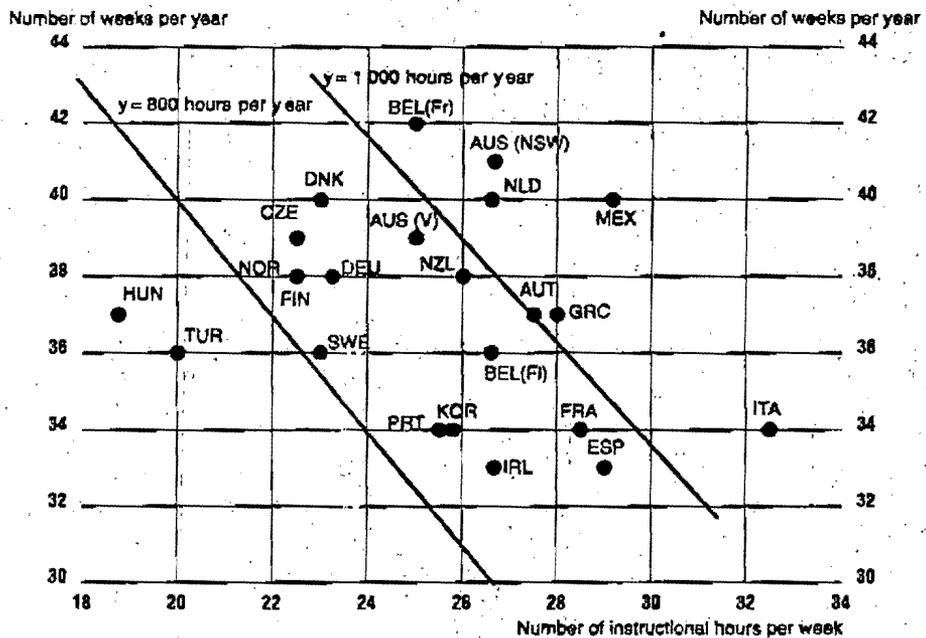
In 18 out of 24 countries, there is a prescribed curriculum for each of the streams in which a 14-year-old student may be enrolled (see Annex 3 for details). In the other six countries there is some flexibility. In Austria, the data on intended instruction time apply to two-thirds of all students. Furthermore, Austrian schools are entitled to change the curriculum within a given framework. In the Flemish Community of Belgium and France, the data refer to general programmes. The intended instruction time for pre-vocational and vocational programmes is slightly different. In the Netherlands, one group of 14-year-olds in pre-vocational programmes have the option of spending more hours on vocational subjects, while others may learn an extra modern or classical language. In the Czech Republic, there is a range of educational programmes. In Italy, the total number of intended hours of instruction differs: 75 per cent of schools teach for 30 hours per week, while the other 25 per cent teach for 40 hours per week.

**Organisation of instruction time**

It remains an open research question whether students learn more by attending school for a greater number of "shorter" school weeks or by attending for longer hours over a smaller number of weeks. Some research has shown that

### Total Intended Instruction Time for Pupils in Lower Secondary Education

#### Chart D4.2. Number of instructional hours per week and number of instructional weeks per year



*Some research has shown that students can forget a significant amount of material over long school holidays. More weeks in the school year can be more costly, however, than more hours per week – although the latter can take away from teachers' preparation time.*

*Note:* For more details concerning the year of the data collection for each country, see sources in Annex 3.  
*Source:* OECD.

**D4.1**

students can forget a significant amount of material over long school holidays. More weeks in the school year can be more costly, however, than more hours per week – although the latter can detract from teachers' preparation time.

The average number of hours of instruction provided per school week ranges from around 20 in Hungary and Turkey to 28 hours or more in France, Greece, Italy and Mexico (Chart D4.2). On the other hand, the length of the school year can range from around 34 weeks or less in France, Ireland, Italy, Korea, Portugal and Spain to 40 weeks or more in Australia, Denmark, Mexico and the Netherlands.

#### DEFINITIONS

Intended instruction time refers to the number of hours per year for which pupils receive instruction in both the compulsory and the flexible part of the curriculum. Compulsory subjects are to be taught by each school and to be attended by each student. Optional subjects form the flexible part of the curriculum. Annex 3 gives more information on instruction time and curriculum in each country.

*Data on instruction time are from the 1999 OECD/INES survey on Teachers and the Curriculum and refer to the school year 1997/98.*

The total number of intended hours of instruction per year was calculated by multiplying the total number of classroom sessions per year by the duration of one session.

**D4 Total Intended Instruction Time for Pupils in Lower Secondary Education**

*The prescribed curriculum is the subject content defined by the government or the education system.*

The prescribed curriculum is the subject content defined by the government or the education system. The prescribed curriculum is embodied in textbooks, in curriculum guides, in the content of examinations, and in policies, regulations, and other official statements issued to direct the education system. Data for the United Kingdom and the United States, however, are based on sample survey data and reflect the curriculum as it is implemented rather than as it is prescribed.

The classification of subject areas used in this indicator is explained in Annex 3.

The organisation of instruction time at ISCED 2 for 14 year-olds refers to the formal number of class hours (1 hour = 60 minutes) per year for instructional activities for students at ISCED level 2. The reference year is the school year 1997/98. If a country has no formal policy, the number of hours is estimated from survey data.

Instruction time includes only time that is compulsory. It does not include time for non-compulsory or quasi-compulsory subjects.

Hours lost when schools are closed for festivities and celebrations, such as national holidays, are excluded.

## Total Intended Instruction Time for Pupils in Lower Secondary Education

Table D4.1a. Intended instruction time in hours per year for students aged 12 to 14 (1998)

	Ages			Total
	12	13	14	
Australia	1 022	1 027	1 027	3 076
Austria	987	987	1 048	3 022
Belgium (Fl.)	m	1 067	1 067	m
Belgium (Fr.)	1 048	1 048	1 048	3 145
Czech Republic	782	811	869	2 461
Denmark	840	900	930	2 670
England	720	720	720	2 160
Finland	686	855	855	2 396
France	833	975	975	2 783
Germany	860	921	921	2 702
Greece	1 064	1 064	1 064	3 192
Hungary	780	902	902	2 584
Ireland	957	957	957	2 872
Italy	1 105	1 105	1 105	3 315
Japan	875	875	875	2 625
Korea	867	867	867	2 601
Mexico	1 167	1 167	1 167	3 500
Netherlands	1 067	1 067	1 067	3 200
New Zealand	985	988	988	2 961
Norway	770	855	855	2 480
Portugal	878	878	878	2 635
Scotland	975	975	975	2 925
Spain	851	957	957	2 765
Sweden	741	741	741	2 222
Turkey	720	720	696	2 136
United States	m	m	980	m
<b>Country mean</b>	<b>899</b>	<b>937</b>	<b>944</b>	<b>2 768</b>

Source: OECD Education Database. See Annex 3 for notes.

Table D4.1b. Intended instruction time for mathematics and science in hours per year for students aged 12 to 14 (1998)

	Ages			Total
	12	13	14	
Australia	247	232	232	711
Austria	247	278	370	894
Belgium (Fl.)	m	167	167	m
Belgium (Fr.)	185	216	247	648
Czech Republic	203	203	261	666
Denmark	210	240	240	690
England	174	178	217	569
Finland	162	177	177	516
France	208	257	257	722
Germany	198	229	229	656
Greece	182	213	274	669
Hungary	194	222	250	666
Ireland	200	200	200	601
Italy	221	221	221	663
Japan	175	204	223	603
Korea	204	204	204	612
Mexico	367	433	367	1 167
Netherlands	200	200	200	600
New Zealand	320	240	320	880
Norway	171	200	171	542
Portugal	227	312	198	737
Scotland	195	195	195	585
Spain	224	198	198	620
Sweden	189	189	189	567
Turkey	168	168	168	504
United States	m	m	295	m
<b>Country mean</b>	<b>211</b>	<b>223</b>	<b>233</b>	<b>670</b>

Source: OECD Education Database. See Annex 3 for notes.

D4

**D4 Total Intended Instruction Time for Pupils in Lower Secondary Education****Table D4.2. Instruction time per subject as a percentage of total intended instruction time for students aged 12 to 14 (1998)**

	Reading and writing mother tongue	Mathematics	Science	Social studies	Modern foreign languages	Technology	Arts	Physical education	Religion	Vocational skills	Other	Total compulsory part	Flexible part
Australia	13	13	10	10	6	8	8	7	n	n	3	77	23
Austria	12	15	14	12	10	6	12	11	6	n	n	100	n
Belgium (Fl.)	13	13	3	6	14	6	3	6	6	n	n	70	30
Belgium (Fr.)	15	14	7	11	12	2	2	8	6	n	7	82	18
Czech Republic	14	14	13	18	11	n	9	7	n	4	5	94	6
Denmark	20	13	12	11	10	n	9	7	3	n	3	90	10
England	12	12	14	11	11	12	10	8	4	1	3	100	n
Finland	18	11	10	10	9	x	6	8	4	n	22	100	n
France	17	14	12	13	11	7	8	11	n	n	n	93	7
Germany	14	13	11	11	21	x	9	9	x	x	8	95	5
Greece	12	11	10	10	15	5	6	8	6	1	16	100	n
Hungary	13	13	13	10	10	n	6	6	n	3	3	78	22
Ireland	23	12	9	19	x	x	x	5	7	x	2	77	23
Italy	23	10	10	14	11	9	13	7	3	n	n	100	n
Japan	14	12	11	12	13	8	11	10	n	n	8	100	n
Korea	14	12	12	11	12	5	10	9	n	4	6	93	7
Mexico	14	14	19	18	9	9	6	6	n	3	3	100	n
Netherlands	10	10	8	11	14	5	7	9	n	n	3	78	22
New Zealand	18	16	14	14	4	8	4	11	n	3	n	93	7
Norway	16	13	9	11	16	n	8	10	7	n	10	100	n
Portugal	13	13	15	17	10	n	10	10	3	n	10	100	n
Scotland	10	10	10	10	10	10	10	5	3	n	n	80	20
Spain	19	12	11	11	8	5	14	9	x	n	2	90	10
Sweden	22	14	12	13	12	x	7	7	x	4	n	93	7
Turkey	17	13	10	7	13	n	3	3	7	10	17	99	n
United States	17	16	14	12	7	3	7	12	1	5	7	100	n
<b>Country mean</b>	<b>15</b>	<b>13</b>	<b>11</b>	<b>12</b>	<b>11</b>	<b>5</b>	<b>8</b>	<b>8</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>92</b>	<b>8</b>

Source: OECD Education Database. See Annex 3 for notes.