

Instructional Time and Curricular Emphases: U.S. State Policies in Comparative Perspective

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Introduction

The monitoring of pupil achievement in reading and mathematics has expanded significantly since the passage of the No Child Left Behind (NCLB) Act in the United States. As a consequence, schools are under intense pressure to devise strategies to strengthen student performance in these subjects. At the same time, there has been a proliferation of comparative studies of pupil achievement (e.g., Programme for International Student Assessment [PISA], Trends in International Mathematics and Science Study [TIMSS], and Progress in International Reading Literacy Study [PIRLS]), which focus on intercountry rankings in a relatively narrow set of subjects and competencies: mathematics, science, and reading literacy. Many scholars and analysts, in the United States and elsewhere, are concerned that the disproportionate attention to monitoring achievements in these subject areas may unintentionally contribute to a diminution of focus on other curricular subjects (e.g., social studies, arts, and foreign languages) and thus contribute to a narrowing of the school curriculum.

In light of these concerns, reforming school time policies becomes a salient issue. Typically, instructional time policies are framed within the context of a “zero-sum game.” In other words, there are a set number of school days per year and hours per school day during which the weekly curriculum must be distributed. If some subjects gain in importance, others must, by definition, be weakened. Other options, however, can be contemplated. For example, if overall instructional time is increased, then there may be less pressure to “narrow the curriculum,” because there would be sufficient time to bolster instruction in mathematics and reading while maintaining in-depth instruction in other subjects, such as history, civic education, and the arts.

Proponents of education reform have often examined foreign education systems when considering various policy options. The present study follows this tradition, by drawing explicit comparisons of the instructional time and curricular poli-

cies of U.S. states with countries that are members of the Organisation for Economic Co-operation and Development (OECD).¹ Specifically, this paper uses different official sources to compare U.S. states and OECD countries on intended yearly instructional time and the relative emphasis given to major curricular subjects during primary and lower secondary education (first through ninth grades). The quantitative information is drawn from official documents published by U.S. state governments and compiled by the United Nations Education, Scientific and Cultural Organization's (UNESCO's) International Bureau of Education (IBE) and the OECD.

In relation to overall instructional time, these comparisons show the following:

- On average, OECD countries mandate about 700 to 720 yearly hours of instruction time in the first two years of primary education. Intended instructional time increases in each subsequent grade level and reaches more than 900 annual hours in ninth grade—an average increase of about 25 annual hours per grade, with significant jumps in third through fifth grades and between sixth and seventh grade. Time policies show considerable variation in the early primary grades and greater homogeneity and convergence in the upper grades of primary education.
- U.S. states on average hold classes for 170 to 180 days a year (the average being between 177 and 179 days).
- For the U.S. states that provide detailed information on how many hours during the school day are devoted to instruction, it is estimated that students should receive, on average, between 874 and 891 hours of instructional time in the early primary grades (first through third grades). This increases to between 925 and 930 hours in fourth through sixth grades and between 960 to 982 hours during junior high and senior high school grades. As is the case in OECD countries, time policies in U.S. states are more heterogeneous in first through third grades and in high school grades and less so in fourth through sixth grades of elementary school.
- Overall, then, the *official intended school year* is longer in almost all U.S. states (i.e., they allocate more hours per year for classroom instruction) in elementary and high school grades than the average OECD country.

In relation to curricular emphases, these comparisons show the following:

- Language education is *the* core subject area in the first nine grades of formal schooling, although its relative emphasis declines in the upper-elementary grades. In addition, most OECD countries teach more than one “official” language or require foreign language instruction in the elementary grades.
- U.S. states tend to place considerably more emphasis on language arts than the vast majority of OECD countries. However, U.S. states require little instruction in foreign language(s) in the elementary grades and, if they do, the relative emphasis of this subject area is weak.
- Mathematics is required throughout the primary and lower secondary grades, although its emphasis declines at the higher grade levels. Official mathematics policies in U.S. states are similar to those in OECD countries: on average, 18 percent of total instructional time is devoted to mathematics instruction.
- Instruction in the natural and physical sciences is required in all OECD countries and its relative emphasis in the official curriculum increases across grade levels. The evidence suggests that U.S. states devote relatively more attention to the sciences than OECD countries.
- In most countries, the teaching of social science subjects typically follows (in terms of grade sequencing) the teaching of basic literacy and numeracy. Subjects like history, geography, civics, and, to a lesser extent, social studies are less prevalent in first through fourth grades, and more prevalent in fifth through eighth grades.
- The evidence suggests that U.S. states place relatively greater emphasis on social science subjects (e.g., social studies, history, geography, and civics) in the elementary grades than OECD countries. The opposite is the case for aesthetic education (e.g., art, music, dance, and singing). Comparisons of subject emphases at the junior high level were unavailable.

The paper is organized into five parts: The background section briefly reviews relevant background literature and previous research. The section on methodological considerations describes the research methodology, including the compilation of curricular data and the construction of the study’s main variables.² The findings section presents trends and patterns for total yearly intended instructional time mandated in OECD countries and relevant U.S. states, and presents trends in curricular emphases in OECD countries and selected U.S. states. The concluding discussion places the main findings in the context of previous research.

Background

In recent years, there has been a renewed interest in the curricular contents of national education systems—how they are structured, the extent to which they have changed over time, and how much they influence what kids know and learn. Because in large part of the highly publicized, comparative studies of pupil achievement sponsored by the International Association for the Evaluation of Educational Achievement (IEA), the OECD (e.g., PISA), and UNESCO,³ policy makers are paying greater attention to key school resources such as available instructional time, the organization of the school curriculum, languages of instruction, teacher effectiveness, and the scope, pace, and complexity of classroom instruction.

For comparative education scholars, international studies of pupil achievement have called into question widely held assumptions about the curriculum. For example, many scholars assume that the school curricula of education systems fundamentally reflect national priorities or distinctive cultural worldviews, thus making broad comparisons of school curricula especially difficult and problematic.⁴ Social historians of school curricula, who examine changes in the configurations of education knowledge, assume that “internal” societal actors—for example, national stakeholders, economic elites, disciplinary gatekeepers, and education specialists—play the dominant role in determining what counts as official school knowledge.⁵

Cross-national studies of school curricula, by contrast, downplay national contestations over subject contents and highlight the globalizing forces of cultural isomorphism. Such analyses of official curricular structures underscore the extent to which the basic categories of the school curriculum became increasingly standardized over the course of the twentieth century.⁶ Other findings to emerge from these studies include the following:

- Most subjects taught in primary schools belong to six major curricular categories: language education, mathematics, natural sciences, social sciences, aesthetic education, and physical education. These categories represent the basic primary curriculum worldwide and typically consist of between 80 and 90 percent of total instructional time during the first six grades of schooling. Other subject categories—for example, religious and moral education, health education, and vocational education and practical skills—are required in many education systems, although their presence is contingent on historical or cultural conditions.⁷
- From 1920 to 1985, the relative emphasis on these major curricular areas remained remarkably stable. Two longitudinal trends were discerned: (1) the

emphases on mathematics, natural sciences, and foreign languages increased over time; and (2) the teaching of history, geography, and civics as separate subjects declined in favor of a more interdisciplinary subject like social studies.

- Although the structure of primary school curricula remained fairly stable, the specific contents of certain subjects experienced considerable shifts. Principles such as individualism, child-centrism, a rationalized polity, and environmental protection gained prominence in national curricula.⁸ Transnational topics became more pervasive in the social sciences,⁹ and civics increasingly emphasized the post-national citizen actively involved in world affairs.¹⁰
- At the upper-secondary level, gymnasium-type programs and classical language instruction declined in almost all world regions (Europe being a notable exception). Concurrently, there was an increase in the prevalence of general/comprehensive programs and specialized tracks emphasizing mathematics, sciences, and modern languages.¹¹
- Most academic upper-secondary systems followed two basic organizing principles: (1) a single, general, or comprehensive high school program allowing some measure of course selection by students; or (2) two or more specialized programs of study (e.g., mathematics and science, humanities, law), each emphasizing distinctive contents. The latter mode typically emerged in systems in which classical programs once predominated. Some countries mixed or combined these two modes.

Overall, these studies underscore the growing isomorphism of national curricular policies. Official policies of subjects to be taught and time emphases—mainly at the primary level and, to a lesser degree, at the secondary level—have been converging. These findings capture not only the predominance of the nation-state as the site at which school curricula are constructed and sanctioned, but also the spreading influence of international organizations and transnational professionals in diffusing legitimate prescriptions of educational knowledge and rationalized curriculum models.¹² Cultural distinctiveness and national historical legacies continue to shape curricular policies, but the influence of highly institutionalized world models has become more salient.¹³

Why Are Instructional Time Policies Important?

In the vast majority of education systems, government authorities mandate a certain number of years—and a set quantity of hours per year—during which pupils are required to be in school and engaged in classroom learning. To be sure, not all

school or classroom time is devoted to formal instruction. Nevertheless, the organization of school time is the object of sustained attention by education authorities, who determine how instructional time should address general education aims and purposes as well as specific curricular goals.¹⁴ Other education stakeholders—professional associations, trade unions, teachers, and the business community—often voice concerns about allocations of school time in the official curriculum. Parents are interested in time policies, not only because they affect pupil learning and school success, but also because they can influence moral character, life aspirations, community responsibility, and family loyalty. For children from poor households, the time spent in school represents a relatively protected space outside the vicissitudes of rural or urban life—often an alternative from long hours in low-paying jobs or unpaid labor. In short, school time policies are not simply an issue of teaching and learning; they demarcate an institutionally embedded time interval in which societal purposes, education ideals, and parent-child ties intermesh.

A widely held assumption in the research literature concerns the impact of instructional time on pupil learning.¹⁵ Simply stated, the more time that pupils are required to be present in classrooms, the greater the positive effects of that time on desired learning outcomes, such as knowledge acquired, skills mastered, and values and attitudes internalized. More complex models of allocated time integrate school and classroom contingencies, such as teacher absences because of strikes, in-service training, conferences, or illness, as well as time allocated to noninstructional activities, such as recreation, recesses, examinations, holiday celebrations, or classroom management.¹⁶

Major studies, which have synthesized the findings of dozens of smaller studies, have reached conflicting results. Some meta-analyses indicate strong associations between time in school and learning.¹⁷ Others raise doubts about the presumed positive benefits of more allocated time on learning.¹⁸ Increasingly, the evidence suggests that over some basic threshold, it is not the amount of time per se that improves learning outcomes, but how that allotted time is actually organized by schools and in classrooms. **In particular, the key issue is whether students are actively engaged in learning activities while at school.** Despite this emerging evidence, the presumed benefits of simply increasing instructional time have considerable currency in national and international policy circles.

Methodological Considerations

This section briefly describes the variables employed in this paper.¹⁹ **Intended annual instructional time** is defined as the number of yearly hours that education authorities decide local schools should devote to the teaching of all required and optional curricular subjects as well as other planned learning activities. This quantity of time is not the same as the amount of time that schools are open each year, because it subtracts school time intended for noninstructional purposes (e.g., recess, meals, and passing time).

In most countries, systemwide policies concerning annual instructional hours are inextricably linked to official guidelines concerning the school curriculum. Thus, the best way to estimate annual instructional time is by compiling information from the following: (1) an official timetable (or school plan) that lists the subjects to be taught at each grade level (or education cycle) and the number of weekly periods or instructional hours mandated for each subject;²⁰ and (2) an official statute or administrative decision specifying the length of the working school year in weeks or days. The figures for the OECD countries analyzed in this paper draw on an IBE compilation of such official curricular documents (see the methodological appendix).

Unlike in the OECD countries, instructional time policies in the United States are not mandated at the national level. Policies concerning required annual instructional hours and days are most often set by state governments or, in some cases, by county, city, or district officials and during collective bargaining (see Walsh chapter). Thus, to estimate annual instructional time in U.S. schools, information was compiled from two types of sources: (1) official state legislatures and administrative statutes that establish the minimum yearly amount of required instructional hours (or days per year); and (2) official curricular guidelines that specify the minimum number of hours students must spend each day, week, or year on each curricular subject. The official documents employed in this study were found through Web searches and in official compilations used by state legislatures.²¹

Official policies regarding intended instructional time should not be confused with the amount or intensity of instructional time that students *actually* receive. School surveys in both more and less developed countries indicate that many factors—for example, school closures, teacher absenteeism and strikes, political disruptions, agricultural cycles, and natural disasters—create disjunctures between official time policies and classroom realities.²²

In theory, the **official school curriculum** encompasses several interrelated components: a specification of the subjects to be taught, quantities of instructional

time allocated to subjects, authorized textbooks to accompany classroom instruction, authorized lesson plans or syllabi used by teachers, and directives or guidelines concerning pedagogy and assessments. The present paper focuses only on the first two components of the curriculum.

The IBE database classified instructional time for each curricular subject or educational activity, by grade level, into a detailed scheme of 32 subject areas, which was later reclassified into 10 curricular categories.²³ Language education presented a rather complex subject area to analyze and was divided into four categories: official/national; local/regional; foreign language; and literature.²⁴ The determination of official languages was based on UNESCO's *World Culture Report*.²⁵ In this paper, the time devoted to language was determined by summing instructional time for official, local, and regional languages as well as for literature; instructional time for foreign languages was analyzed separately.

In general, it should be reiterated that the IBE classification of official curricular subjects was based on the subject labels listed in the official timetables and not the *actual* contents of the labels.

Findings

The paper's main findings are divided into two sections: the first compares up-to-date information on instructional time policies in OECD countries and U.S. states for first through ninth grades. The second examines the relative emphasis countries place on core subject areas: language education, mathematics, sciences, the social sciences, and aesthetic education. Information on official curricular policies in a handful of U.S. states is highlighted and compared with the more extensive information available for OECD countries.

Official Intended Instructional Time: A Comparative Perspective

Table 1 reports annual instructional time in first through ninth grades in OECD countries for the most recent period, typically for the years 2000–02. For several countries, reliable information at the national level or for the entire country was unavailable, so data for more limited geopolitical entities within the countries is reported. Several interesting results emerge: First, during the first two years of primary education countries mandate, on average, about 700 to 720 hours of instructional time per year. Intended instructional time increases in each subsequent grade level and reaches more than 900 annual hours in ninth grade—an average supplement of about 25 annual

hours per grade. These increases, however, are not linear: there are significant jumps during third through fifth grade, and then again around the transition between primary and lower-secondary education between sixth and seventh grade. In between these transition grades, increases in annual instructional time are modest.²⁶

Second, a certain degree of convergence is apparent in table 1 (note the standard deviations at each grade level). National policies concerning intended instructional time vary considerably in the early primary grades and show greater homogeneity and convergence in the upper grades of primary education (fourth through sixth grade) and, to a lesser extent, in lower-secondary education (seventh through ninth grade). Thus, concurrent with increases in instructional time, education systems become increasingly similar with respect to instructional time policies in primary education.

Table 2 examines yearly instructional time policies for first through twelfth grades in 38 U.S. states. In the remaining 12 states, official time policies either do not exist or could not be identified. Table 2 classifies states into two groups depending on the availability of detailed information on noninstructional time provided by official sources. States that report information on time set aside for passing between classes, lunch, recesses, and parent-teacher conferences are placed in the first group of states, namely, those with “defined” instructional time policies. States lacking such detailed information are placed in the second group.

For U.S. states providing detailed information on noninstructional time, we estimate that, on average, states allocate about 874 to 891 hours of instructional time in the early primary grades (first through third). This increases to between 925 and 930 hours in fourth through sixth grade and between 960 and 982 hours during junior high and senior high school grades. As in OECD countries, time policies are more heterogeneous in first through third grade and in high school grades; they are more homogeneous in fourth through sixth grade in elementary school.²⁷

The most significant finding to emerge from table 2 is that **U.S. states allocate, on average, more hours per year for classroom instruction than member countries of OECD**. Among the 27 U.S. states with fairly detailed time information, intended yearly instructional time favors U.S. states at all grade levels. The advantage of U.S. states over OECD countries is highest in the early grades of primary education (on average about 150 to 180 additional hours per year) and remains significant in the upper grades of primary education and in junior high school (ranging from 80 to more than 150 extra hours).²⁸

Tables 3a and 3b further illustrate this finding for third through fifth and sev-

enth through ninth grades, respectively. For example, Table 3a shows that in third through fifth grade, the length of the school year in most U.S. states (measured by annual instructional hours) tends to be longer than that of OECD countries. Only in Wyoming, South Carolina, Arizona, Oregon, and California are annual instructional time policies closer to the pattern found in OECD countries. Table 3b, which averages data for seventh through ninth grade, shows a similar pattern, although slightly more U.S. states fall within the midrange of OECD countries. In short, **intended yearly instructional time in most U.S. states (with comparable data) tends to be higher than in advanced industrial countries. There is little evidence that the official time policies of U.S. states fall short of those prevalent in OECD countries.** It would appear that the more pertinent question is not how much instructional time is available, but rather **how is instructional time used and for what curricular purposes?**

Which Curricular Subjects Are Emphasized in Official School Curricula?

The subsections below examine how countries distribute annual instructional time into broad curricular categories and specific school subjects during the primary and lower-secondary grades. Comparisons between U.S. states and OECD countries are limited because few of the former have explicit policies specifying the amount of instructional time to be allocated to particular subject areas. Data for OECD countries are more extensive, because they derive from two complementary sources: IBE compilations and OECD's *Education at a Glance*.²⁹ Key findings for major curricular categories are noted below.

Language Education. All countries require instruction in more than one language during the compulsory school years. Indeed, language education is *the* core subject area in the first nine grades of formal schooling. Instruction in *all* language-related subjects (including foreign languages) accounts for a preponderant component of the primary and lower-secondary curriculum. Cross-national analyses point to the growing prevalence of foreign language instruction during the primary school grades. Since the 1980s, more and more countries are requiring pupils to learn a foreign language at the primary level, a requirement which is being introduced at earlier stages of primary education than in the past.³⁰ The strengthening of foreign language instruction highlights the impact of economic and cultural globalization. Countervailing cultural legacies and national differences, however, continue to influence administrative decisions as to which languages are used as a means of instruction and which are taught in school.

Turning to the current situation in OECD countries, tables 4a and 4b report the relative emphasis on language education in third through fifth and seventh through ninth grades, respectively. On average, language education (excluding foreign languages) takes up about one-third of the total instructional time in third through fifth grade and about 30 percent in seventh through ninth grade. As seen in table 4a, some countries such as Luxembourg and the Czech Republic allocate more than 40 percent of instructional time in third through fifth grade to language education, while others, such as Japan, Korea, and Iceland, allocate less than 25 percent of total instructional time. OECD countries differ in the extent to which they require instruction in foreign language(s) in third through fifth grade. Most OECD countries require foreign language instruction in these grades, although quite a few countries (e.g., the Netherlands, the United Kingdom, Ireland, Japan, Mexico, and China) do not. And among countries requiring instruction in a foreign language, some countries (e.g., Italy, Belgium, and Spain) devote more than 10 percent of total instructional time to this curricular subject.

In the lower-secondary grades (seventh through ninth), as seen in table 4b, the overall emphasis on language education declines, but more attention is given to foreign languages. At this level, considerable variation is found among OECD countries in the relative emphasis placed on language education, especially with respect to foreign languages. The information on curricular emphases in table 5, which reports the percentage of total compulsory education devoted to reading, writing, and literature, on the one hand, and modern foreign languages, on the other, confirms the previously noted patterns.

Table 6 reports curricular emphases in elementary education for five U.S. states (Arizona, Connecticut, Massachusetts, Missouri, and Wisconsin) based on official state documents. (Official policies for other U.S. states were not identified.) The table separately averages time allocations per subject area for first through third grade and fourth through sixth grade. With respect to language education, two results are striking:

- U.S. states place considerably more emphasis on language arts than the vast majority of OECD countries. In first through third grade, language education takes up more than 45 percent of total instructional time, and in fourth through sixth grade, it receives 37 percent. By contrast, the OECD average for third through fifth grade is 32 percent.
- U.S. states apparently require little instruction in foreign language(s) in the elementary grades, and if they do, the relative emphasis this subject receives is minimal. By contrast, about three-quarters of OECD countries teach foreign languages in third through fifth grade and, among those that do teach the subject, it receives greater emphasis in the official curriculum.

Mathematics Education. Mathematics is the second most prominent subject area in official school curricula.³¹ Although instruction in mathematics is required throughout primary and lower-secondary education, its relative emphasis declines in successive grades, particularly in secondary education. For example, OECD countries allocate, on average, about one-fifth (18 percent) of total instructional time to mathematics in third through fifth grade (see table 4a). Countries that give greater emphasis to mathematics in these grades include Mexico, the Czech Republic, the Netherlands, Australia (Queensland), and Canada (Quebec); countries that give relatively less emphasis include Ireland, Turkey, and Korea. In the lower-secondary grades (seventh through ninth), the relative emphasis on mathematics education declines to 13 percent (see table 4b).³² Differences among OECD countries in the emphasis given to mathematics also tend to decline between grade levels.

Previous research on mathematics education, which examined the 1925–85 period,³³ reported a worldwide *increase* in the emphasis on mathematics in primary education over time. Recent evidence, however, suggests that this trend has halted. Indeed, given the media attention to, and heightened public awareness of, comparative surveys of mathematics achievement (e.g., TIMSS and PISA), and the presumed importance of mathematical knowledge and competencies, the global leveling off of emphasis on mathematics education in recent decades is rather surprising.

The evidence on mathematics education in table 6, which summarizes official policies in five U.S. states, indicates that these official policies do not appear to significantly differ from those in OECD countries. On average, mathematics education receives 18 percent of total instructional time in U.S. states (with no difference between first through third and fourth through sixth grades)—exactly the same average percentage it receives in OECD countries.

Science Education. Instruction in the natural and physical sciences is required in all OECD countries both at the primary and lower-secondary levels. The relative emphasis on science education increases across grade levels: for example, OECD countries allocate an average of 8 percent of total instruction time to the sciences in third through fifth grade (see table 4a) and about 11 percent in seventh through ninth grade (see table 4b). The emphasis placed on the sciences tends to vary more widely in the high school years and less during the primary school years. If instructional time devoted to technologically oriented education or applied science is included (see table 5), then the overall emphasis on science-related education becomes even more significant.

Overall, countries allocate about 25 to 30 percent of total instructional time to instruction in mathematics, sciences, and technology. In many countries a trade-off occurs between mathematics, on the one hand, and sciences and technology, on the other, with little change to the cumulative emphasis these subjects receive in the official curriculum. In other words, as pupils move from primary to lower-secondary grades, the emphasis on mathematics declines and that on sciences and technology increases, with little change in the total time allocated to these three subject areas.

A comparison between science education policies in U.S. states and OECD countries suggests that this area receives more attention in the United States than abroad (see table 6). Specifically, the U.S. states allocate, on average, 9 percent of instructional time to science education in first through third grade and 12 percent in fourth through sixth grade. The comparable figure in OECD countries (for third through fifth grade) is 8 percent.

Social Sciences and the Arts. Beyond the presumed “core” of the official school curriculum—literacy, numeracy, and science—it is important to examine the emphasis countries give to history, geography, social studies, civics, environmental studies, arts, music, and other humanistic subjects. Although some subjects (e.g., history, geography, and social studies) are highly institutionalized, and feature prominently in official school curricula, other subjects like civics and citizenship education or environmental studies represent relatively “new” curricular subjects, which are in the process of being made legitimate.³⁴ Some of these subject areas are the focus of considerable contestation and public controversy.

Cross-national studies indicate that, first, the teaching of history, geography, civics, and, to a lesser extent, social studies is less prevalent in first through fourth grade, and more prevalent in fifth through eighth grade. The opposite is true for environmental studies. Stated differently, in most countries, instruction in social science subjects tends to increase in the upper grades of primary education and in secondary education. Second, there are clear increases in the proportion of countries worldwide that require instruction in civics and environmental education, mainly in the primary grades. The growing emphasis on citizenship education follows in the wake of the disestablishment of the Union of Soviet Socialist Republics (USSR) and Yugoslavia, and the ongoing support for more open, participatory regimes. The increasing prevalence of environmental education exemplifies the impact of transnational social movements and changing international discourse in support of environmental protection and sustainable

development. Third, countries differ in the basic model of social science education they adopt: in some cases, history, geography, and civics tend to be bundled together; in others, an interdisciplinary subject such as social studies is taught. Empirically, the relative emphasis placed on history and geography is negatively associated with that accorded to social studies.³⁵ These divergent models are more evident in the lower-secondary grades. Fourth, there is considerable consistency in the global trends for aesthetic education, by grade level and time period, with some interesting regional variation.³⁶

Based on current policies (see tables 4a and 4b), OECD countries allocate, on average, 9 percent of instructional time to the social sciences in third through fifth grade and 11 percent in seventh through ninth grade. By contrast, the emphasis on aesthetic education is stronger in the lower grades (14 percent) than in the higher grades (9 percent). In the U.S. states, the subject of social studies receives more attention in fourth through sixth grade (on average, 12 percent of intended time) than in OECD countries (see table 6). Instruction in art and music receives only 8 percent of total time, on average, considerably less than in most OECD countries.³⁷

Subject Trade-Offs in the School Curriculum. Official policies concerning the subjects to be emphasized in primary and lower-secondary curricula frequently involve trade-offs, owing to the zero-sum nature of intended instructional time. Curricular reforms meant to enhance the teaching of, say, language, science, or technology, typically entail providing less time for other subjects. Such trade-offs can occur between and within subject categories (even across grades), and they often involve subjects that are less institutionalized worldwide. Existing evidence suggests that distinctive cultural forces and national legacies influence curricular trade-offs.

Unreported cross-national correlations of curricular emphases provide information about the subjects between which curricular trade-offs tend to occur. They show modest negative associations between modern (computer/technology) and traditional (vocational) skills categories, between an emphasis on science, on the one hand, and religious education and environmental education, on the other. They also show that subjects addressing the physical health of students often involve a trade-off with sports. Perhaps more important, the emphasis on language education tends to constrain the time available for other subjects in the primary curriculum. For example, countries mandating relatively more time for language

education (excluding foreign languages) place less emphasis on sciences, arts, and social sciences (mainly social studies). To be sure, most associations are modest in magnitude (the correlations range from 0.20 to 0.40), and they are not always consistent at the primary and lower-secondary grades. Nevertheless, these relationships illustrate how ideological, organizational, and pedagogical constraints influence the structuring of official instructional time by education authorities.

Concluding Discussion

In this paper, official policies on instructional time and curricular emphases were compared between U.S. states and OECD countries. Data on intended yearly instructional time (the number of hours per year children are meant to be learning in classrooms) are one education dimension, which, if estimated carefully, can be validly compared across education systems. Conversely, comparing U.S. states and industrial countries in terms of curricular emphases (the proportion of intended instructional time devoted to different subjects or curricular areas) is more problematic. Unlike countries in much of the world, most U.S. states do not mandate an official curricular timetable specifying required subjects to be taught at each grade level. Thus, it is hard to establish with certainty the relative amount of time that U.S. students are taught certain subjects during the elementary or junior high school grades.

Notwithstanding these qualifications, two major findings emerge from the present study that can, and should, inform current policy discussions in the United States.

First and foremost, official school time in most U.S. elementary and junior high schools, when converted into yearly instructional hours, is higher on average than among OECD member countries. This suggests that since the 1980s when *A Nation At Risk* raised public consciousness for education reform because of the “rising tide of mediocrity,” and explicitly noted deficits in instructional time, U.S. education authorities have successfully increased intended instructional time *per year* relative to other advanced industrial countries. The instructional time advantage of U.S. pupils, when compared with their counterparts in developed countries elsewhere, ranges from 80 hours to more than 180 hours, depending on grade level. This does not mean that teachers and students are using this bounty of in-class time in efficient and effective ways or that significant pupil learning is the norm. It does mean that calls to raise the quantity of instructional time seem misplaced, when placed in comparative perspective. The pressing issues today would

appear to be more curricular and pedagogical in nature—in other words, more qualitative than quantitative.

The second finding, based on more tentative evidence, indicates that U.S. states that do establish curricular guidelines at the elementary level, allocate much more time to three basic subject areas—language (but not foreign language), mathematics, and science—than OECD countries. This paper found that these three curricular domains receive 73 percent of all instructional time in first through third grade and 68 percent in fourth through sixth grade. Among OECD countries, by contrast, these three subject areas receive, on average, only 57 percent of total instructional time in third through fifth grade. (For example, Denmark tops the list and allocates 67 percent of total time.)

Thus, the elementary school curriculum in some U.S. states is dominated by a few subject areas. As a result, considerably less time is available for noncore subjects in the social sciences and humanities, as well as a range of other subject areas. This, together with the fact that foreign languages are rarely taught in elementary schools, means that the intended curriculum of most U.S. elementary schools focuses disproportionately on a relatively few areas of human knowledge and scientific pursuit. In short, the waning of curricular diversity in U.S. elementary schools, if validated in other states, clearly deserves further critical attention.

Methodological Appendix

To calculate intended annual instructional time in Organisation for Economic Co-operation and Development (OECD) countries, the International Bureau of Education (IBE) database compiled information on three quantities:

- The duration of the “working” school year, expressed as the number of days or weeks that schools are open and classroom instruction is supposed to take place;
- The number of teaching “periods” (lessons or instructional “hours”) allocated to each subject and grade level as specified in official curricular timetables or other curriculum-related documents; and
- The average duration of “periods” (lessons or “hours”), expressed in minutes.

Although national documents provide relatively precise information on the last two components, determining the exact number of working days in a typical school year is sometimes problematic. For example, systems that devote certain days to examinations, teacher in-service training, in-school holiday celebrations, or

extracurricular activities may include this time in official figures for “working” weeks. Sustained efforts were made to verify this information and subsequently revise, when necessary, national figures on the actual number of working school days for each grade level. In addition, daily or weekly time set aside for breaks and recreational activities was, whenever possible, deleted from estimates of intended instructional time. For some federal states, a national average can be calculated based on recommendations at the federal level. For Canada, Germany, and Switzerland, however, estimates at the federal level were not used because of significant cross-province variation.

In general, instructional time data for the 2000s is more reliable than data for the 1980s. The main reasons for this are as follows: (1) the use of a single source of data compilation (IBE), rather than multiple sources; (2) the growing detail and precision of official national documents; and (3) the ability to cross-check questionable figures by examining national sources via the Internet or through exchanges with official authorities. To enhance the validity of the study’s findings, only countries with instructional data at both time points were included in the analyses. Several “problematic” cases were dropped because of questionable figures, usually for the 1980s. In short, the reported analyses are based on the best available data.³⁸

The IBE identified scores of timetables, which were divided by historical period and coded according to standard rules and procedures. These rules specified, for example, how to code subjects listed as combined subjects, interdisciplinary subjects, or electives, and how to deal with timetables accommodating regional, linguistic, cultural, or religious differences.³⁹ As a result of the coding process, instructional time was classified, by grade level, into either 32 detailed subject areas or 10 more general curricular categories.⁴⁰

In the end, three variables were constructed for cross-national and longitudinal comparisons:

- A dichotomous variable based on whether (or not) a subject or category was taught in an official timetable. Using this variable, we estimated the proportion of countries in the world (or geographic regions) that require instruction in a specified subject area.

- A ratio variable based on the percentage of total instructional time that was allocated to each curricular subject or category. Using this variable, we estimated the percentage of total instructional time allocated to different subjects, that is, the relative emphasis on different subjects in the official curriculum.
- An interval variable based on the number of yearly hours of instruction devoted to each subject area, per grade or education level (primary, lower secondary, or upper secondary). This variable estimates the quantity of annual instructional time that students are expected to learn various subject areas.

TABLE 1: INTENDED YEARLY INSTRUCTIONAL HOURS IN OECD COUNTRIES, CIRCA 2000-2, BY GRADE LEVEL

Country	TOTAL YEARLY INSTRUCTIONAL TIME IN OECD COUNTRIES								
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Australia (Queensland) ¹	860	860	860	800	800	800	800	800	800
Austria	630	630	750	750	870	960	960	990	1020
Belgium (German community) ²	850	850	850	850	851	851	971	971	971
Canada (Quebec) ³	846	846	846	846	846	846	900	900	900
Czech Rep.	570	627	656	684	713	770	798	855	855
Denmark	660	683	773	773	803	840	900	990	900
Finland (min.) ⁴	542	542	656	656	684	684	855	855	855
France (est.) ⁵	936	936	936	936	936	858	858	858	858
Germany (Berlin)	478	591	675	731	816	816	816	788	872
Greece	656	656	683	761	761	761	919	919	919
Hungary	555	555	624	624	693	692	763	762	832
Iceland	681	681	681	681	747	747	793	815	816
Ireland	702	702	885	885	885	885	885	885	1080
Italy (est.) ⁵	850	850	950	950	950	917	917	917	933
Japan	587	630	683	709	709	709	817	817	817
Korea, Rep. of	554	567	658	658	726	726	867	867	867
Luxembourg	840	840	840	840	840	840	900	900	900
Mexico	800	800	800	800	800	800	1167	1167	1167
Netherlands	850	850	850	850	950	950	950	950	1067
Norway	570	570	570	570	770	770	770	855	855
Poland	656	656	656	798	798	798	884	884	884
Portugal	840	840	840	840	918	918	972	972	972
Slovakia	614	644	702	731	761	819	848	848	848
Spain (average) ⁶	788	788	788	788	788	788	1050	1050	1120
Sweden (average) ⁶	741	741	741	741	741	741	741	741	741
Switzerland (Zurich) ⁷	527	611	694	749	805	805	944	944	944
Turkey	720	720	720	720	720	720	720	720	792
UK (England) ⁸	792	792	846	846	846	846	900	900	900
OECD Average	703	716	758	770	805	809	881	890	910
Standard Deviation	129	114	100	91	77	74	96	96	102
India (est.)	720	720	720	720	720	900	900	900	900
China	765	791	816	842	842	842	918	944	918
Russian Federation	545	638	638	638	791	816	867	893	893

Source: International Bureau of Education (Geneva), 5th Edition of World Data on Education

1 Data represents Queensland state only.

5 Estimate.

2 Data represents German Community.

6 Average.

3 Data represents Quebec only.

7 Data represents Zurich only.

4 Data represents minimum required time.

8 Data represents England only.

TABLE 2: INTENDED ANNUAL INSTRUCTIONAL HOURS FOR TWO CATEGORI

Grade	NUMBER OF REQUIRED YEARLY			
	1	2	3	4
Arizona	712	712	712	890
Arkansas	1068	1068	1068	1068
California ¹	810	810	810	870
Colorado ²	932	932	932	932
Connecticut	900	900	900	900
Georgia	810	810	810	900
Idaho	810	810	810	900
Indiana ³	870	870	870	870
Iowa	990	990	990	990
Kansas ⁴	962	962	962	962
Louisiana	1050	1050	1050	1050
Maine	875	875	875	875
Maryland	1080	1080	1080	1080
Massachusetts	900	900	900	900
Michigan ⁶	948	948	948	948
Mississippi	900	900	900	900
Missouri	957	957	957	928
Montana ⁷	690	690	690	1050
New Hampshire	945	945	945	945
New York	990	990	990	990
Ohio	910	910	910	910
Oregon ¹¹	780	780	780	870
South Carolina ¹⁴	810	810	810	810
South Dakota ¹²	843	843	843	930.5
Utah	810	990	990	990
Vermont	700	700	962.5	962.5
Virginia	990	990	990	990
Wisconsin ¹³	930	930	930	930
Wyoming	781	781	781	781
Avg. hours for States with defined instructional time policies (n=29)	888	894	903	935
Standard Deviation	105	106	100	72
Alabama*	1050	1050	1050	1050
Kentucky ^{5*}	1050	1050	1050	1050
Nebraska ^{8*}	1032	1032	1032	1032
New Mexico ^{9*}	938	938	938	938
North Carolina*	1000	1000	1000	1000
Oklahoma ^{10*}	1080	1080	1080	1080
Pennsylvania*	900	900	900	900
Tennessee*	1170	1170	1170	1170
Washington*	1000	1000	1000	1000
Avg. hours for states without defined instructional time policies (n=9)	1024	1024	1024	1024

** Alaska, Delaware, Florida, Hawaii, Illinois, Minnesota, Nevada, New Jersey, North Dakota, Rhode Island, Texas and West Virginia are excluded from the table because they do not have explicit policies on required instructional time. The category of "defined" instructional policies refers to States that explicitly mention daily, weekly or annual time set aside for one or all of the following activities: recess, lunch, passing time to move from class to class, and teacher-parent conferences, which can be subtracted to calculate a more comparable figure with time policies in OECD countries.

***The quantities used for estimating instructional time in states where the policy does not specify time allocation: passing time (time spent transferring between classes), 10 min. per day; recess, 30 min. per day; parent-teacher conferences 30 hours per year; Lunch, 30 minutes per day. These numbers are based on trends in states that specify time allocation for these activities.

¹ California includes 10 min. passing time (time spent transferring between classes) per day in its instructional time. For the purpose of this study, passing time was subtracted from yearly total.

² Colorado includes parent-teacher conference time in their instructional time policies. This time was deleted for the purposes of this table.

³ Indiana includes passing time in their instructional time. Estimate for passing per day subtracted.

ES OF US STATES, BY GRADE LEVEL *(see notes at end of table)*

INSTRUCTIONAL HOURS BY STATE AND GRADE

	5	6	7	8	9	10	11	12	Days/year
	890	890	720	720	720	720	720	720	180
	1068	1068	1068	1068	1068	1068	1068	1068	178
	870	870	870	870	1050	1050	1050	1050	180
	932	932	1032	1032	1032	1032	1032	1032	160
	900	900	900	900	900	900	900	900	170
	900	990	990	990	990	990	990	990	180
	900	900	900	900	990	990	990	990	170
	870	870	1050	1050	1050	1050	1050	1050	180
	990	990	990	990	990	990	990	962.5	180
	962	962	1055	1055	1055	1055	1055	1054	186
	1050	1050	1050	1050	1050	1050	1050	1050	175
	875	875	875	875	875	875	875	850	173
	1080	1080	1080	1080	1170	1170	1170	1170	180
	900	900	900	900	990	990	990	990	180
	948	948	1038	1038	1038	1038	1038	1038	180
	900	900	900	900	900	900	900	900	180
	928	928	928	928	1040	1040	1040	1040	174
	1050	1050	1050	1050	1050	1050	1050	1050	180
	945	990	990	990	990	990	990	990	180
	990	990	1080	1080	1080	1080	1080	1080	180
	910	910	910	910	910	910	910	910	182
	870	870	870	870	960	960	960	960	x
	810	810	810	810	900	900	900	900	180
	930.5	930.5	930.5	930.5	930.5	930.5	930.5	930.5	170
	990	990	990	990	990	990	990	990	180
	962.5	962.5	962.5	962.5	962.5	962.5	962.5	962.5	175
	990	990	990	990	990	990	990	990	180
	930	930	1107	1107	1107	1107	1107	1107	180
	781	781	1021	1021	1021	1021	1021	1021	175
	935	940	979	979	993	993	993	991	177
	72	73	92	92	86	86	86	88	5
	1050	1050	1050	1050	1050	1050	1050	1050	175
	1050	1050	1050	1050	1050	1050	1050	1050	175
	1032	1032	1032	1032	1080	1080	1080	1080	x
	938	938	1028	1028	1028	1028	1028	1028	180
	1000	1000	1000	1000	1000	1000	1000	1000	180
	1080	1080	1080	1080	1080	1080	1080	1080	x
	900	900	900	900	990	990	990	990	180
	1170	1170	1170	1170	1170	1170	1170	1170	180
	1000	1000	1000	1000	1000	1000	1000	1000	180
	1024	1024	1034	1034	1050	1050	1050	1050	179

⁴ Kansas instructional time calculations include parent teacher conferences, passing time and recess. Thirty minutes of instructional time is allotted daily for recess grades 1-6 For this table time allotted for recess was subtracted.

⁵ Components of instructional time unclear.

⁶ This time includes passing time, recess and parent-teacher conferences. Times adjusted based on estimates for passing time, recess and parent teacher conferences.

⁷ These times include passing time. Times adjusted based on estimates for passing time.

⁸ This time includes recess and passing time. Times have not been adjusted.

⁹ Includes passing time. Time allotted (22 hours) for parent-teacher conferences subtracted. Time has been adjusted based on estimates for passing time.

¹⁰ Components of instructional time unclear.

¹¹ Time included (up to 30 hours) for parent-teacher conferences subtracted.

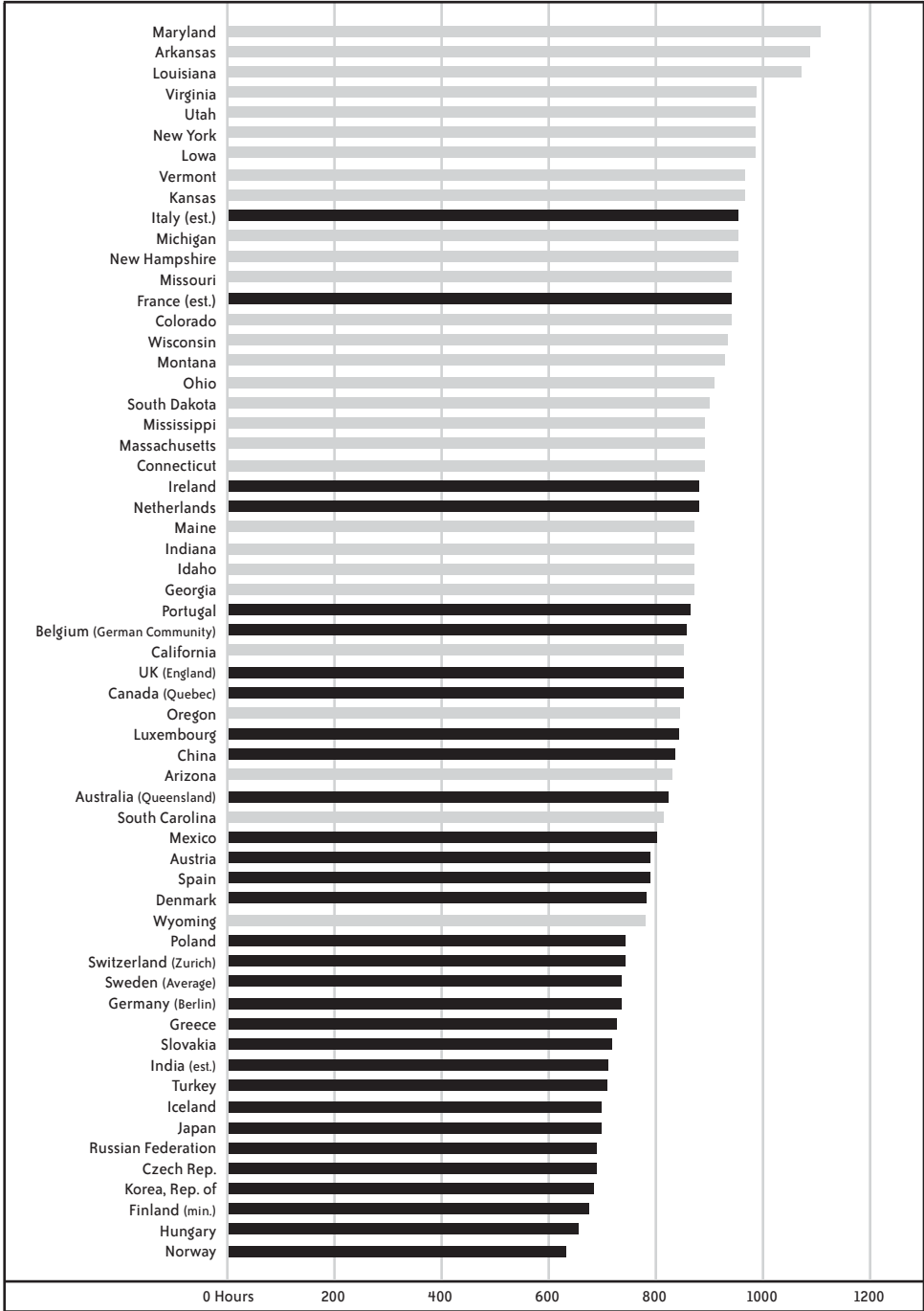
¹² Hours included (up to 32) for parents teacher conferences subtracted.

¹³ Passing time and recess included. Times adjusted based on estimates for passing time and recess.

¹⁴ 30 minutes of lunch and recess is included in instructional time for grades 1-8 and excluded in grades 9-12. 30 min. per day was subtracted for both lunch and recess.

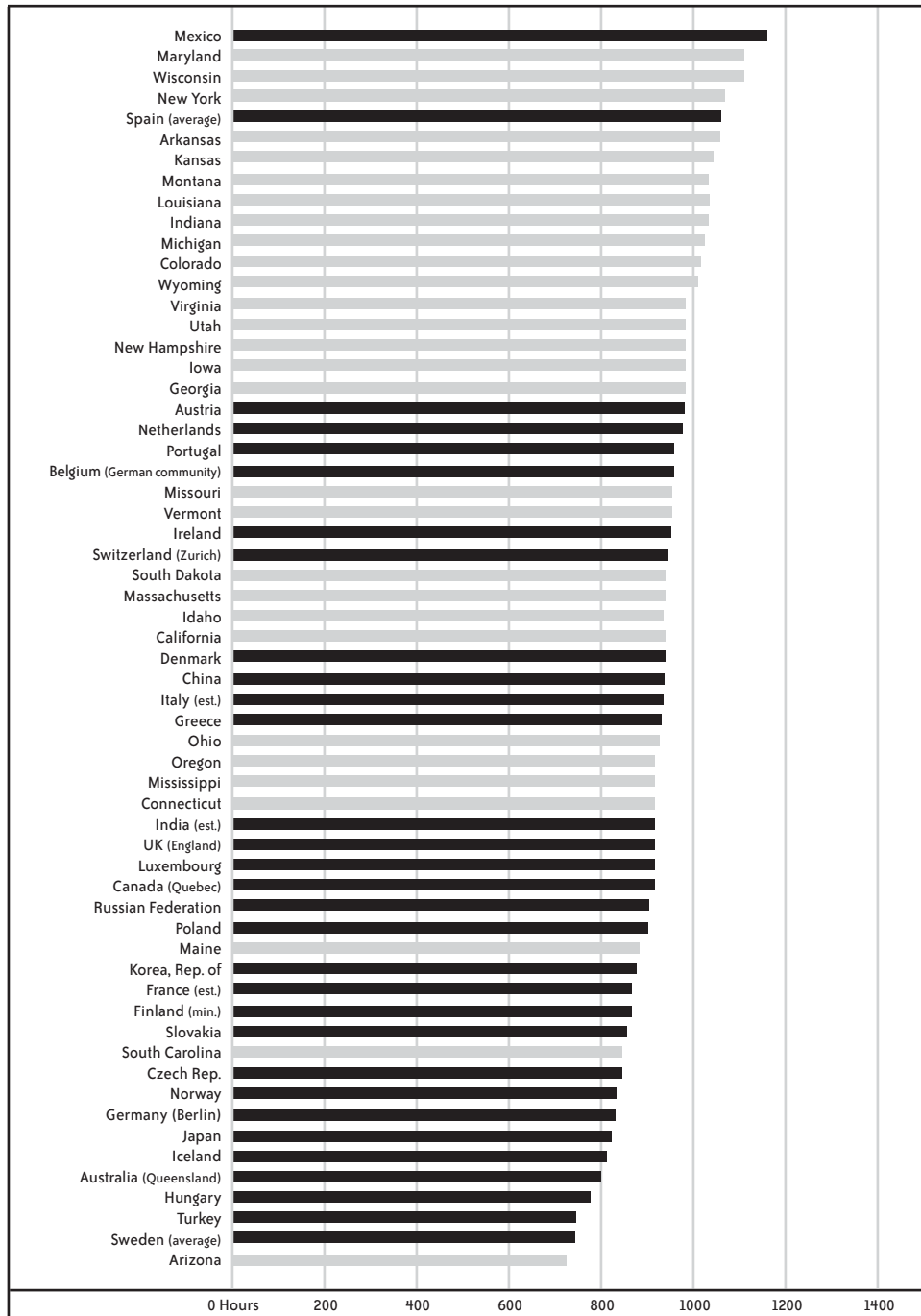
* Components included instructional time unclear

TABLE 3A: COMPARISONS OF YEARLY INSTRUCTIONAL TIME BETWEEN OECD COUNTRIES AND SELECT US AVERAGE FOR GRADES 3-5 (AGES 8-10)



*Sources: International Bureau of Education (Geneva), 5th Edition of World Data on Education and US State Web sites.

TABLE 3B: COMPARISONS OF YEARLY INSTRUCTIONAL TIME BETWEEN OECD COUNTRIES AND SELECT US AVERAGE FOR GRADES 7-9 (AGES 8-10)



Additional States have been excluded because their instructional policies were not comparable.

**TABLE 4A:
CURRICULAR EMPHASES: PERCENTAGE OF ANNUAL INSTRUCTIONAL TIME
IN GRADES 3-5 ALLOCATED TO SELECT SUBJECT AREAS,
IN OECD COUNTRIES, 2000-02:**

	All Language Instruction except foreign languages	Foreign Language(s)	Mathematics
Luxembourg	46	0	18
Mexico	30	0	25
Czech Republic	33	8	21
Slovakia	31	5	20
Greece	31	7	14
Spain (Valencia)	27	10	20
Netherlands	39	0	21
Germany (Berlin)	24	12	19
Australia (Queensland)	24	5	21
Hungary	27	9	16
UK (England) (average)	32	0	19
Belgium (German comm.)	23	13	18
Denmark	26	9	17
Italy (est.)	20	10	20
France (est.)	24	6	20
Sweden (est.)	25	7	15
Norway	25	6	16
Austria	24	8	15
Finland (min.)	20	9	17
Ireland (est.)	33	0	13
Turkey	27	4	13
Canada (Quebec)*	30	x	21
Poland (est.)	20	7	15
Korea Rep. of	21	4	13
Switzerland (Zurich)	21	0	18
Japan	23	01	16
Iceland	18	2	14
OECD Average	27	5	18
Standard Deviation	6	4	3
China	24	0	15
Russian Fed.	32	4	16

* In grades 1-6, Canada only allocates intended instructional time in language and math. This is symbolized by x.

**Social Sciences include history, geography, social studies, civics and environmental studies.

***Arts, music, crafts and performance arts.

Science	% instructional allocated to core subjects	Social Sciences**	Aesthetic Education***	% of total instructional time allocated to non-core subjects
6	70	2	11	7
15	70	20	5	13
7	69	7	12	10
10	66	6	16	11
13	65	11	10	10
9	65	9	12	10
4	64	5	17	11
8	63	8	15	12
11	61	4	12	8
9	60	4	22	13
9	60	8	8	8
6	60	15	11	13
8	59	4	15	10
7	57	17	13	15
5	56	14	12	13
7	54	9	13	11
6	53	7	15	11
5	52	8	20	14
5	51	7	27	17
4	51	10	13	12
7	51	12	9	11
x	51	x	x	x
9	50	5	4	4
10	49	10	13	12
9	49	9	27	18
9	48	9	12	10
4	39	6	15	11
7	57	8	13	11
3	8	4	6	3
4	44	4	12	8
5	57	5	11	8

1 Foreign language instruction in grades 3-6 may fall under "periods for integrated studies" or may be incorporated into other subjects.
2 Time is allotted to first and second languages (french and english).

3 Ireland may allocate time to two native languages (Irish and English).
4 This is the information that was available in the official timetables.

**TABLE 4B:
PERCENTAGE OF ANNUAL INSTRUCTIONAL TIME IN GRADES 7-9
ALLOCATED TO SELECT SUBJECT AREAS, IN OECD COUNTRIES, 2000-02**

	All Language Instruction except foreign languages	Foreign Language(s)	Mathematics
Denmark	19	22	13
Luxembourg	34	13	12
Switzerland (Zurich)	25	9	12
Hungary	14	14	11
Greece	24	15	11
Austria	28	9	9
Slovakia	15	10	15
Mexico	14	9	14
Sweden (est.)	11	18	16
Italy (est.)	25	11	13
Netherlands	23	7	17
Turkey	15	13	14
Canada (Quebec)*	28	02	15
Belgium (German comm.)	16	17	14
Germany (Berlin)	14	12	14
Czech Republic	14	10	14
Iceland	15	17	11
Spain (Valencia)	20	10	10
Poland (est.)	15	10	13
Ireland (est.)	30	03	10
Finland (min.)	11	16	11
Norway	17	10	13
France (est.)	16	11	13
Australia (Queensland)	13	8	13
UK (England) (average)	12	8	13
Korea Rep. of	13	10	11
Japan	12	11	11
OECD Average	18	11	13
Standard Deviation	7	4	2
China	16	11	14
Russian Fed.	16	9	14

* In grades 1-6, Canada only allocates intended instructional time in language and math. This is symbolized by x.

**Social Sciences include history, geography, social studies, civics and environmental studies.

***Arts, music, crafts and performance arts.

Science	% of total instructional time allocated to core subjects	Social Sciences**	Aesthetic Education***	% of total instructional time allocated to non-core subjects
13	67	14	1	8
4	64	12	10	11
17	62	04	15	8
21	60	8	13	11
10	60	12	6	9
12	59	12	11	12
17	57	16	8	12
19	56	18	6	12
10	56	10	8	9
7	56	17	10	13
8	55	11	11	11
13	55	12	5	9
11	54	14	9	12
7	53	11	2	7
13	52	13	11	12
14	51	14	9	12
7	50	7	14	10
11	50	10	11	10
13	50	14	3	8
10	50	7	8	7
12	49	9	8	9
9	48	11	13	12
7	48	13	7	10
11	45	4	9	6
12	45	13	8	11
11	44	10	8	9
11	44	10	8	9
11	53	11	9	10
4	6	3	3	2
12	52	17	6	11
15	55	14	5	10

¹ Foreign language instruction in grades 3-6 may fall under "periods for integrated studies" or may be incorporated into other subjects.
² Time is allotted to first and second languages (french and english).

³ Ireland may allocate time to two native languages (Irish and English).
⁴ This is the information that was available in the official timetables.

**TABLE 5: INSTRUCTION TIME PER SUBJECT AS A PERCENTAGE OF TOTAL
COMPULSORY CORE CURRICULUM**

	Reading, writing and literature (1)	Modern foreign languages (5)	Math (2)	Science (3)	Technology (6)	Social Studies (4)	Arts (7)	Physical Education (8)
Australia ¹	13	1	9	2	2	3	4	5
Austria	24	8	16	10	n	3	18	10
Belgium (Fl.) ¹	a	a	a	a	a	a	a	a
Belgium (Fr.) ¹	a	5	a	a	a	a	a	7
Czech Republic ²	24	13	19	9	n	11	14	8
Denmark	26	7	16	8	n	4	22	11
England	27	n	22	10	9	8	8	7
Finland	23	9	16	11	n	2	14	9
France	30	9	19	5	3	10	9	14
Germany	21	9	18	7	1	5	15	11
Greece	29	10	14	11	n	11	8	7
Hungary	28	9	16	6	n	7	15	11
Iceland	16	4	15	8	6	8	12	9
Ireland	29	x(13)	12	4	n	8	12	4
Italy ³	a	a	a	a	a	a	a	a
Japan	19	n	15	9	n	9	10	9
Korea	19	5	13	10	2	10	13	10
Luxembourg ⁴	25	21	18	6	n	2	11	10
Mexico	30	n	25	15	n	20	5	5
Netherlands ⁵	30	2	19	x(4)	2	15	10	7
New Zealand	a	a	a	a	a	a	a	a
Norway	23	6	15	7	n	8	16	7
Poland ⁶	21	11	16	12	5	5	5	12
Portugal ⁶	15	11	12	9	12	6	6	9
Scotland	a	a	a	a	a	a	a	a
Slovak Republic	m	m	m	m	m	m	m	m
Spain	22	13	17	9	n	9	11	11
Sweden	22	12	14	12	x(3)	13	7	8
Switzerland	m	m	m	m	m	m	m	m
Turkey	19	9	13	10	n	10	7	7
United States	m	m	m	m	m	m	m	m
OECD average ¹	24	8	16	9	2	8	11	9
EU19 average	25	9	16	9	2	7	12	9
Chile ⁶	13	5	13	10	5	10	8	5
Israel	11	11	19	7	x(13)	11	n	7
Russian Federation ⁶	26	10	16	6	6	10	6	6

*Source: OECD. See Annex 3 for notes (www.oecd.org/edu/eag2006). Please refer to the Reader's Guide for information concerning the symbols replacing missing data.

¹ Australia, Belgium (Fr.) and Belgium(Fl.) are not included in the averages.

² For 9-to-10-year-olds, social studies is included in science.

³ For 9 and 10-year-olds the curriculum is largely flexible, for 11-year-olds it is about the same as for 12 and 13-year-olds

COMPULSORY INSTRUCTION TIME FOR 9-11 YEAR OLDS (2004)

COMPULSORY CORE CURRICULUM

Religion (9)	Practical and vocational skills (10)	Other (11)	TOTAL compulsory core curriculum (12)	Compulsory flexible curriculum (13)	TOTAL Compulsory curriculum (14)	Non-compulsory curriculum (15)
1	n	1	42	58	100	n
8	x(12)	3	100	x(12)	100	m
a	a	a	a	a	a	a
7	a	n	19	81	100	n
n	n	n	97	3	100	n
4	n	3	100	n	100	n
5	n	5	100	n	100	n
6	n	n	90	10	100	3
n	n	n	100	n	100	n
7	n	3	97	3	100	n
7	n	2	100	n	100	n
n	4	4	100	n	100	15
3	5	3	89	11	100	n
10	n	14	92	8	100	n
a	a	a	a	a	100	n
n	n	21	91	9	100	m
n	2	3	87	13	100	n
7	n	n	100	n	100	n
n	n	n	100	n	100	n
4	n	12	100	n	100	n
a	a	a	a	a	a	a
9	n	9	100	n	100	n
8	n	4	100	n	100	20
n	n	17	97	3	100	3
a	a	a	a	a	a	a
m	m	m	m	m	m	m
x(13)	n	n	91	9	100	n
x(4)	7	n	94	6	100	n
m	m	m	m	m	m	m
7	9	1	91	9	100	20
m	m	m	m	m	m	m
4	1	5	96	4	100	3
4	1	4	97	3	100	3
5	a	2	79	21	100	m
7	n	n	74	26	100	32
n	n	n	87	13	100	m

⁴ German as a language of instruction is included in "Reading, writing and literature" in addition to the mother tongue Luxembourgish.

⁵ Includes 9 and 11-year-olds only.

⁶ Includes 10 to 11-year-olds only.

TABLE 6: PERCENTAGE OF WEEKLY INSTRUCTIONAL MINUTES REQUIRED

GRADES 1 - 3		
	Arizona	Connecticut****
Reading/Language Arts	45	51
Foreign Languages	0	0
Math	18	19
Science	9	7
Social Studies	9	7
Health	4	2
Physical Education	7	3
Art and Music	7	6
Other	0	3
Total %	100	100
Total Minutes per Week	1650	1724
GRADES 4 - 6		
	Arizona	Connecticut****
Reading/Language Arts	38	43
Foreign Language	0	1
Math	19	19
Science	13	10
Social Studies	13	10
Health	4	2
Physical Education	8	4
Art and Music	8	7
Other	0	4
Total %	100	100
Total Minutes per Week	1600	1735

*Wisconsin instructional minutes differ from grade to grade. This chart shows the average instructional minutes in grades 1-3 and 4-6.

**This figure is an average. The state requires 100 minutes of foreign language instruction per week in grades 5 and 6.

***Wisconsin also has instructional time policies for the following subjects: Environmental Education, Computer Literacy and Career Exploration. Time for these subjects is worked into other relevant subjects.

****Massachusetts data is based on grades 2 and 5, respectively.

*****Data based on study of average hours of instruction in selected subjects from 2004-05, and so does not necessarily represent present policies. Only grades 2 and 5 are represented on this data. The other category includes: computer education, family and consumer science and technology education.

IN EACH SUBJECT AREA IN THREE US STATES, GRADES 1-3 & GRADES 4-6

Massachusetts****	Missouri	Wisconsin*	Average
47	47	42	46
1	0	0	0
19	19	16	18
10	9	7	9
10	9	9	9
0	4	5	3
4	4	9	6
6	8	10	8
3	0	0	1
100	100	100	100
1550	1590	1582	1619

Massachusetts****	Missouri	Wisconsin*	Average
37	39	30	37
1	0	4**	1
19	19	15	18
14	13	11	12
14	13	13	12
0	4	7	3
5	4	9	6
7	8	10	8
4	0	0	2
100	100	100	100
1565	1540	1673***	1623

Endnotes

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- ¹ In 1960, 20 countries signed the OECD Convention and 10 additional countries joined the organization since then. Today, OECD member countries include the following: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, South Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States.
- ² A special methodological appendix details the data sources used for instructional time estimates and measures of the official curriculum. For further information, see Aaron Benavot with the collaboration of Massimo Amadio, *A Global Study of Intended Instructional Time and Official School Curricula, 1980–2000* (Geneva, 2005), background report prepared for UNESCO's EFA Global Monitoring Report, *The Quality Imperative* (2005).
- ³ In Latin America, see Juan Casassus, S. Cusato, J. Froemel, and J. Palafox, *First International Comparative Study of Language, Mathematics and Associated Factors for Students in the 3rd and 4th Year of Primary School, Second Report* (English translation), Latin American Laboratory for the Assessment of Quality in Education (Santiago: UNESCO-Chile, 2002). In other regions, see the Southern and Eastern African Consortium for Monitoring Educational Quality; and the Monitoring Learning Achievement Project.
- ⁴ See Brian Holmes, and Martin McLean, *The Curriculum: A Comparative Perspective* (London: Unwin Hyman, 1989); William Cummings, "The Institutions of Education: Compare, Compare, Compare!" *Comparative Education Review* 43 (November 1999): 413–37.
- ⁵ Ivor F. Goodson, *The Making of Curriculum: Collected Essays* (London: Falmer Press, 1995); Herbert Kliebard, *The Struggle for the American Curriculum, 1893–1958* (Boston, MA: Routledge and Kegan Paul, 1986).
- ⁶ Adapted from Aaron Benavot, "A Critical Analysis of Comparative Research: Education for Learning to Live Together," *Prospects* 32 (March 2002): 51–73. See also, John W. Meyer, David H. Kamens, Aaron Benavot, Yun-Kyung Cha, and Suk-Ying Wong, *School Knowledge for the Masses: World Models and National Primary Curricular Categories in the Twentieth Century* (London: The Falmer Press, 1992); Elizabeth McEneaney and John W. Meyer. "The Content of the Curriculum: An Institutional Perspective," in *Handbook of the Sociology of Education*, ed. Maureen Hallinan, 189–211. (New York: Kluwer/Plenum, 2000).

- ⁷ Aaron Benavot, Yun-Kyung Cha, David Kamens, John W. Meyer, and Suk-Ying Wong, “Knowledge for the Masses: World Models and National Curricula, 1920–1986,” *American Sociological Review* 56 (February 1991): 85–100.
- ⁸ McEneaney and Meyer, “The Content of the Curriculum,” 189–211.
- ⁹ David John Frank, Suk-Ying Wong, John W. Meyer, and Francisco Ramirez, “Embedding National Societies: Worldwide Changes in University History Curricula, 1985–1994,” *Comparative Education Review* 44 (February 2000): 29–53.
- ¹⁰ Suk-Ying Wong, “The Evolution of Social Science Instruction, 1900–1986,” *Sociology of Education* 64 (January 1991): 33–47; Mary Rauner, “The Worldwide Globalization of Civics Education Topics from 1955–1995,” unpublished doctoral dissertation (Stanford University, 1998).
- ¹¹ David H. Kamens, John W. Meyer, and Aaron Benavot, “Worldwide Patterns in Academic Secondary Education Curricula, 1920–1990,” *Comparative Education Review* 40 (May 1996): 116–38; David Kamens and Aaron Benavot, “Worldwide Models of Secondary Education, 1960–2000,” in *School Knowledge in Comparative and Historical Perspective: Changing Curricula in Primary and Secondary Education*, eds. A. Benavot and C. Braslavsky, 135–54 (Amsterdam: Springer; Hong Kong: The University of Hong Kong Press, 2006).
- ¹² John W. Meyer, John Boli, George Thomas, and Francisco O. Ramirez, “World Society and the Nation-State,” *American Journal of Sociology* 103 (July 1997): 144–81; Connie L. McNeely, “Prescribing National Education Policies: The Role of International Organizations,” *Comparative Education Review* 39 (November 1995): 483–507; Mark J. Schafer, “International Nongovernmental Organizations and Third World Education in 1990: A Cross-National Study,” *Sociology of Education* 72 (April 1999): 69–88.
- ¹³ For a contrasting view of the dynamics of educational policy borrowing and diffusion, see Gita Steiner-Khamsi, ed., *The Global Politics of Educational Borrowing and Lending* (New York: Teacher’s College Press, 2004).
- ¹⁴ See Massimo Amadio, Nhung Truong, Patrick Ressler, and Sky Gross, *Quality Education for All? World Trends in Educational Aims and Goals between the 1980s and the 2000s*, Background paper prepared by the IBE for UNESCO’s EFA Global Monitoring Report, *The Quality Imperative* (2005).
- ¹⁵ B. Bloom, “Time and Learning,” *American Psychologist* 29 (September 1974): 682–88; J. Smyth, “Time and School Learning,” in *The International Encyclopedia of Education*, eds. Torsen Husen and T. Neville Postlethwaite, 5265–72 (Oxford: Pergamon Press, 1985); Lorin W. Anderson, “Time, Allocated and Instructional,” in *The International Encyclopedia of Education*, 2nd ed., eds. Torsen Husen and T. Neville Postlethwaite, 6388–90 (Oxford: Pergamon-Elsevier, 1994); B. Millot, “Economics of Educational Time and Learning,” in *International Encyclopedia of Economics of Education*, 2nd ed., ed. Martin Carnoy, 353–58 (Oxford: Pergamon-Elsevier, 1995).
- ¹⁶ A. Harnischfeger, and D. E. Wiley, “Time Allocations in 5th Grade Reading,” Paper presented at the Annual Meeting of the American Educational Research Association (New York, 1977).
- ¹⁷ H. Walberg, “Uncompetitive American Schools: Causes and Cures,” in *Brookings Papers on Education Policy*, ed. Diane Ravitch, 173–205 (Washington, D.C.: Brookings Institution, 1998).

- ¹⁸ J. Aronson, J. Zimmerman, and L. Carlos, "Improving Student Achievement by Extending Schools: Is It Simply a Matter of Time?" Available at http://www.wested.org/online_pubs/time-andlearning/TAL_PV.html. See also Nancy Karweit, "Time on Task: The Second Time Around," *NASSP Bulletin* 72 (February 1988): 31–39; Lorin W. Anderson, ed. *Time and School Learning*, (London: Croom Helm, 1984); F. Demfer, "Time and the Production of Classroom Learning," *Educational Psychologist* 22 (1987).
- ¹⁹ See also the methodological appendix.
- ²⁰ See Kamens, Meyer, and Benavot, "Worldwide Patterns in Academic Secondary Education Curricula," 121.
- ²¹ A list of detailed sources is available upon request.
- ²² Benoit Millot and Julia Lane, "The Efficient Use of Time in Education," *Education Economics* 10 (August 2002): 209–28; Aaron Benavot, and Limor Gad, "Actual Instructional Time in African Primary Schools: Factors Inhibiting Quality Education in the Developing World," *Prospects* 34 (September 2004).
- ²³ The Comparative Curriculum Project examined the organization of upper-secondary education, using an expanded list of 45 subject areas to capture the greater diversity of knowledge areas included in official timetables.
- ²⁴ Yun-Kyung Cha, "The Effect of the Global System on Language Instruction, 1850–1986," *Sociology of Education* 64 (January 1991): 19–32.
- ²⁵ UNESCO, *World Culture Report 2000. Cultural Diversity, Conflict and Pluralism* (Paris: UNESCO, 2000).
- ²⁶ Similar patterns were found in analyses of instructional time policies for the 1980s. See Benavot, *A Global Study of Intended Instructional Time and Official School Curricula*, 2005.
- ²⁷ With few exceptions, the vast majority of U.S. states hold classes for between 170 and 180 days a year. The average for the states with detailed time information is 177 days, and 179 days for the second group of states.
- ²⁸ The lower section of table 2, which reports annual instructional hours for 10 U.S. states without sufficiently detailed policy documents, indicates, as to be expected, high levels of instructional hours. This is true not only in relation to other U.S. states but also OECD countries.
- ²⁹ OECD, *Education at a Glance: 2006* (Paris: OECD, 2006).
- ³⁰ See Benavot, *A Global Study of Intended Instructional Time and Official School Curricula*, 2005.
- ³¹ The subject labels used by countries to refer to this curricular area is standardized ("mathematics"). In sixth through ninth grade specialized topics like arithmetic or geometry are sometimes specified. The analyses combined instructional time for all mathematics-related subjects.
- ³² The declining importance of mathematics education across grade levels can also be seen in the 1980s. See Benavot, *A Global Study of Intended Instructional Time and Official School Curricula*, 2005. Analyses of upper-secondary curricula indicate that the percentage of instructional time devoted to mathematics education continues to decline in upper-secondary grades, with the exception of specially designated mathematics or science tracks. See Aaron Benavot, "The Diversification of Secondary Education: School Curricula in Comparative Perspective," *IBE Working Papers on Curriculum Issues*, no. 6 (Geneva, Switzerland: IBE, 2006). Available at http://www.ibe.unesco.org/resourcebank/working_papers.htm.

- ³³ David H. Kamens and Aaron Benavot, “Elite Knowledge for the Masses: The Origins and Spread of Mathematics and Science Education in National Curricula,” *American Journal of Education* 99 (February 1991): 137–80.
- ³⁴ Ivor F. Goodson, *School Subjects and Curriculum Change*, 2nd ed. (London: Falmer Press, 1987).
- ³⁵ Zero-order correlations between history, geography and civics versus social studies are -0.18, -0.20, -0.18 (first through third grade); -0.50, -0.53, -0.17 (fourth through sixth grade); and -0.78, -0.77, -0.34 (seventh and eighth grade).
- ³⁶ For example, instruction in arts, crafts, dance, and the like is declining in importance in Latin America, Sub-Saharan Africa, and East Asia, but increasing in importance in Western and Eastern Europe, South and West Asia, and the Arab States.
- ³⁷ For further evidence on the marginalization of aesthetic education, see Massimo Amadio, N. Truong, and J. Tschurenev, “Instructional Time and the Place of Aesthetic Education in School Curricula at the Beginning of the Twenty-First Century,” *IBE Working Papers on Curriculum Issues*, No. 1. (Geneva: UNESCO-IBE, 2006); Jurgen Oelkers and S. Larcher Klee, “The Marginalization of Aesthetic Education in the School Curriculum,” in *School Knowledge in Comparative and Historical Perspective*, eds. A. Benavot and C. Braslavsky, 105–118 (Hong Kong: University of Hong Kong Press, 2006).
- ³⁸ Developing reliable cross-national estimates of annual instructional time, especially at multiple time points, presents a formidable methodological challenge. See Aaron Benavot, *Curricular Content, Educational Expansion & Economic Growth*, Policy, Planning and Research Working Papers, Education & Employment (Washington, D.C.: World Bank, 1991); UNESCO, Vittoria Cavicchioni and Anna Eriksson, Section of Statistics on Education-Division of Statistics, *Special Survey on Primary Education* (Paris: UNESCO, 1991); and Aaron Benavot with the collaboration of Massimo Amadio, *A Global Study of Intended Instructional Time and Official School Curricula, 1980–2000* (Geneva, IBE, 2005). An examination of national figures from different sources reveals the many definitional and reliability problems associated with this research tradition. Nevertheless, in addition to the constant case analyses performed, the present database represents the most accurate instructional time data available.
- ³⁹ Examples of “combined” subjects include *Pensamiento, acción social e identidad nacional* [Social thought, social action and national identity] or *Histoire, éducation civique et géographie* [History, civic education and geography].
- ⁴⁰ The Comparative Curriculum Project examined the organization of upper-secondary education, using an expanded list of 45 subject areas to capture the greater diversity of knowledge areas included in official timetables.