THE DIVERSIFICATION OF SECONDARY EDUCATION: SCHOOL CURRICULA IN COMPARATIVE PERSPECTIVE[1]

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Abstract:

Secondary education continues to expand rapidly worldwide. Equally important is its diversification. The present paper contends that the diversification of secondary education, while acknowledged, is not well studied. Despite the widespread expansion of secondary education in different world regions, the information available to researchers—and policy makers—for informed comparisons of secondary education systems has been, and remains, rather superficial and limited. The present paper compares the programmatic foci and contents of secondary education systems. It seeks to move beyond existing characterizations of secondary education, by reporting initial results from an IBE-sponsored, cross-national study of secondary level programs, tracks and curricula. This study, while mainly limited to academic-oriented tracks, provides an empirical basis for comparing the diversification of secondary education systems.

Key Words: Secondary education, expansion, diversification, curricular structures, comparative perspective.

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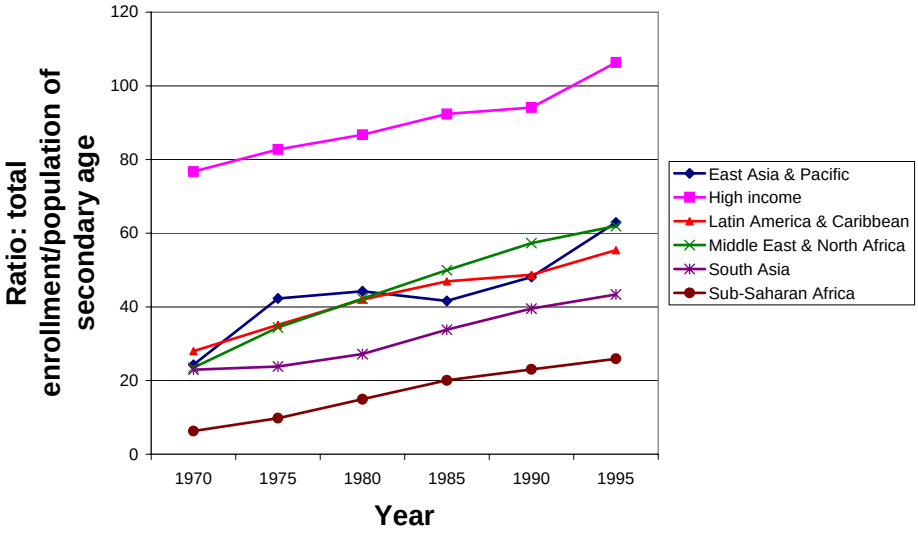
1. INTRODUCTION

Secondary education continues to expand rapidly worldwide. Over one-half billion students were enrolled in secondary schools in 2004, an increase of more than 60 million students in just five years (UNESCO, 2007). While gross enrolment ratios in secondary education were already high among advanced industrialized countries by the 1970s (around 80%), they have increased dramatically in much of the developing world since then (see Table 1). Undoubtedly, national strides towards universal primary education have intensified the demand for secondary schooling; so too has the prolongation of compulsory schooling and the establishment of a 'basic education' sequence consisting of primary and lower secondary education. Training sufficient teachers for expanding primary school classrooms is another reason for the increased demand for secondary schooling.

Table 1: *Gross enrolment ratios, Secondary Education, 1970-1995*



Source: World Bank, World Development Indicators 2002

Equally important to the expansion of secondary education is its *diversification*. Both within and across countries, the purposes, programs, financing and curricula of secondary education are considerably more varied than in the past. In particular, the historically elitist nature of secondary schools—namely, preparing students for higher studies, credentialing an administrative class, nurturing industrial entrepreneurship—has been transformed as countries pursue policies of open access and universal coverage and establish programs offering broader curricular subjects, greater options and stronger ties to labour market demands. To be sure, the historical timing and sequencing of this diversification process have varied by region and national

context (see below). And, it is worth noting, elitist models of secondary education still remain dominant in many countries.

The present paper contends that the diversification of secondary education, while acknowledged, is not well studied. Despite the widespread expansion of secondary education in different world regions, the information available to researchers—and policy makers—for informed comparisons of secondary education systems has been, and remains, rather superficial and limited (Holsinger and Cowell, 2000). Apart from measures of overall participation (enrolment ratios) and compulsory attendance in secondary education, almost all existing data revolves around two simple dimensions: one hierarchical (i.e., lower vs. upper secondary education) and one programmatic (general vs. technical-vocational).[2] Cross-national analyses based on these two dimensions provide, at best, a rather partial picture of the diversity of secondary school systems worldwide.

The present paper compares the programmatic foci and contents of secondary education systems. It seeks to move beyond existing characterizations of secondary education, by reporting initial results from an IBE-sponsored, cross-national study of secondary level programs, tracks and curricula. This study, while mainly limited to academic-oriented tracks, provides an empirical basis for comparing the diversification of secondary education systems. Previous analyses of the organization of secondary education have demonstrated the important impact of changing historical contexts, which have shaped both the development of secondary education in Europe and North America, but also the adoption and diffusion of different models of secondary schools in other regions of the world (Kamens, Meyer and Benavot, 1996). The next section provides a brief overview of the historical evolution of secondary education.

2. HISTORICAL ANTECEDENTS OF DIVERSITY IN SECONDARY EDUCATION[3]

[2] In the 1970s, with the establishment of the first International Standard Classification of Education (ISCED), UNESCO collected statistical information on secondary education according to two stages (1st and 2nd stage), which were typically combined in published Statistical Yearbooks. To capture gross programmatic differences at the secondary level, enrolment statistics were reported three categories: academic, vocational and teacher training. The revised ISCED system adopted in 1997, continued to differentiate between lower (level 2) and upper (level 3) secondary education, but dropped teacher training programs and concentrated on a basic distinction between general secondary education, on the one hand, and vocational technical education and training (TVET), on the other, usually at the upper secondary level. For more information, see http://www.unesco.org/education/information/nfsunesco/doc/isced_1997.htm

[3] This section draws extensively from a comparative historical study of universal basic and secondary education (Benavot and Resnik, 2006).

The traditional European forms of secondary education—for example, gymnasium, lycée, "public," or grammar school—provided a classical humanistic education and a narrow gateway to higher social and occupational statuses. Throughout Europe, academic secondary schools began as institutions serving universities, with the purpose of preparing upper-class youth for study in higher education. Access to secondary education was firmly entrenched in rigid selection mechanisms, which provided distinctive advantages to the children of wealthy families, landowners, high administrative officials and other members of the upper classes. These produced bifurcated structures: on the one hand, a variety of academic-oriented secondary education systems, including preparatory classes attached to secondary schools, were mainly reserved for children of elite families or those who could afford to pay tuition fees; on the other hand, short-term and typically terminal programs provided access to primary (and some post-primary) education for the children of the popular classes.

From a historical perspective, the shift from elitist to more inclusive secondary education systems involved several, not always sequentially organized, transformations. Many countries made an early transition by broadening access to primary schools while simultaneously increasing the number of traditionally elitist secondary schools. In some contexts, selective secondary schools, which had exclusively served the aristocracy, began providing opportunities to the children of the bourgeoisie and urban middle classes (Collins, 1979; Mueller, Ringer and Simon, 1987). Another transformation involved the alteration of entrance examinations to secondary schools, with the purpose of strengthening meritocratic criteria with academic or IQ-like elements. Pupils who passed these exams were allowed to enrol in elite secondary schools, while other pupils either remained in school for several additional grades before dropping out or enrolled in vocational programs or tracks. Both alternatives were considered less desirable.

In the United States the comprehensive high school that emerged in the late nineteenth century and flourished in the post-World War I era embodied a uniquely American vision of secondary education. By combining the principles of small, often private, college-preparatory academies with a broad set of occupationally relevant curricular offerings, the comprehensive high school sought to encapsulate democratic values and pragmatic educational principles (Commission on the Reorganization of Secondary Education, 1918; Dewey, 1916). The model of the comprehensive high school not only reflected an anti-elitist, egalitarian ideal in which academically and socially diverse students studied a common core of curricular subjects, but also fostered the "elective principle," which allowed students to choose from a range of course offerings (Vaizey, 1965). In addition to Latin, biology, history, and physical education, high schools offered "practical" subjects such as industrial arts, home economics, typing, or accounting (Ulich, 1967). This curricular structure, better adapted to the heterogeneity of pupils' talents and abilities, called into question the relevance of the predominantly humanities-oriented programs found in European schools (Sutton, 1965). It also problematized the practice of

channelling students into separate academic and vocational schools (or streams) at a relatively young age.

In quantitative terms, the expansion of secondary education in the United States was unprecedented: enrolment ratios increased from 7 percent of the youth population in 1890 to 80 percent in the 1960s (Ulich, 1967). The US high school was the first entirely free secondary school in the world (Green, 1990). Although comprehensive high schools contributed to the unprecedented growth of secondary education, they continued to act as powerful mechanisms of social stratification (Kerckhoff, 1995). Overall, secondary education in the United States confronted a much weaker elitist tradition and considerably less intellectual opposition to vocational education than in England (Cummings, 1997). The comprehensive high school provided a pragmatic, instrumental approach to education in which vocational subject matter could be integrated in an expanding array of course offerings. Thus, comprehensive schooling "softened", but did not eliminate, the sharp distinction between academic and vocational studies. Between-school hierarchies were transformed into intra-school ones.

After World War II, especially with the ascendance of the United States as the major economic and political superpower, intergovernmental organizations such as UNESCO and OECD lent their support to principles of equal educational opportunity. The use of highly selective entry examinations came under severe criticism as an obstacle to the "democratization" of secondary education. Countries began to adopt observation and counselling procedures, which were intended to replace pupil selection methods, by strengthening the classification of pupils according to their abilities, interests, and achievements at the conclusion of compulsory education. The meritocratic ideal—that individuals, whatever their origins, should be given opportunities to carry their talents to full realization through education—was relatively late in coming to Europe (Ringer, 1979; Maynes, 1985).

During the 1960s and 1970s many European countries passed legislation prolonging compulsory education by two to four years, which was meant to universalize access to (lower) secondary education. New forms of secondary schooling emerged in large part to meet the increasing demand for secondary education. Moreover, the traditional curriculum of grammar schools, lycées, and gymnasiums, which stressed classical languages and academic subjects, was criticised for not being responsive to the needs (and interests) of heterogeneous student populations. Initiatives to transform and diversify secondary education systems gained momentum, including the revamping of various types of vocational and technical education (Resnik, 2006).

Significantly, the post-World War II transformation of secondary education occurred during a particularly activist and dynamic period in European political history. The move to ensure greater educational opportunities and reduce social inequalities corresponded to political developments in Western Europe, in particular the ascension of democratic socialist parties (Wittrock et al., 1991). Led by cadres of political leaders imbued with strong sense of solidarity and

modernizing visions, many European governments launched large-scale educational reforms to establish and expand more inclusive secondary schools. Although the pace and outcomes of these changes varied from country to country, the transformation of secondary education became an important target of reformists' struggles. The shift from elite to mass forms of secondary education also involved a major structural change. States that had created sharp institutional (and class) divisions between primary and secondary education began constructing more integrated and less stratifying transitions between primary, lower-secondary, and upper-secondary education.

In the wake of these reform initiatives, three basic types of secondary education systems emerged in Western Europe (Schneider, 1982):

- The Scandinavian comprehensive school model (Norway, Denmark, Sweden, and Finland), in which primary and middle schools were joined into a nine-year basic (and compulsory) program. The new system (nine years of primary education and three to four years of post-primary education) was legally institutionalized in Sweden (1962), Finland (1970), and then Denmark (1975).
- The mixed systems found in Great Britain, France, and Italy. Specific equivalents to the comprehensive schools were legally implemented without, however, relegating the compulsory education of all pupils to one type of basic school.
- The traditional systems found in Austria, Belgium, the Netherlands, and in most German lander and Swiss cantons. Legislated reforms created a less comprehensive integration of secondary schools and specific national patterns of subdivided systems dominate in these countries. The tripartite system usually included the classic, modern, and technical secondary schools, which form separate tracks.

Education in the Soviet Union and the Eastern Bloc

Key principles of Soviet education, established in 1918, influenced educational patterns in Eastern Europe and elsewhere, until the break-up of the Soviet Union. In particular, Soviet authorities established and expanded mass educational institutions to improve literacy levels, enhance meritocratic principles, and pursue industrial development (Matthews, 1982; Cummings, 2003). The structure of Soviet education followed highly rational, hierarchical, and bureaucratic lines of authority, which extended from the central ministry through various regional and district levels until they reached school directors and teachers. As part of an explicit strategy of national development, the education system expanded to support collective state objectives. Given these ideological concerns, the state fully subsidized education and public authorities prepared detailed plans for human resource development and manpower utilization. Central planning, which accentuated the needs of the national economy and the state above those of individual pupils and local communities, permeated the system (Grant, 1979; Whittacer, 1991; Eklof and Dneprov, 1993).

The Soviet model strongly influenced the education systems of Communist block countries, many of which adopted substantial features of Soviet ideology and practice. Newly established socialist governments in Cuba, Vietnam, and China also borrowed heavily from the Soviet model (Noah, 1986), even though the Soviet presence itself was less pervasive. Unlike most western countries, where major educational transitions resulted from complex and drawn-out historical processes, communist countries often imposed decisive educational reforms in the wake of successful regime change (Carnoy and Samoff, 1990).

At the secondary level, socialist institutions tended to blur the traditional hierarchy between academic and professional studies as well as the separation between school life and the work world. Soviet "factory-run schools and school-run factories" and Chinese work-study programs that encouraged individuals to "work every day and study every day" exemplified the ideal integration of education and labour. China highlighted scientific and technological subjects, especially their application outside the classroom, often carrying out lessons at factories and farm sites (Cheng and Manning, 2003). The polytechnical model, established in the late 1950s and 1960s in the Soviet Union and Eastern Europe, forged new links between school and work by integrating general and vocational education. At the upper-secondary level, schools sought to balance theoretical knowledge and practical training in production activities (UNESCO, 1961: 139–40). In some cases, educational reforms were abruptly reversed in the wake of unmet economic goals and objectives. In the 1930s, for example, the Soviet Union passed a series of decrees that restored aspects of the previous system with the aim of more effectively training technicians, engineers, and administrators.

Following the break-up of the Soviet Union, central and eastern European countries initiated major educational reforms, closely aligned to general political movements of democratisation. States and governments, which had been the sole provider and distributor of educational services, became increasingly involved as regulators and arbiters of provision. Secondary education was the object of considerable restructuring: in many cases, the upper limit of compulsory schooling was *reduced* to 15 or 16, students were given greater choice in secondary programs and granted more curricular options, new examinations were prepared to certify completion of secondary programs, and vocational schools were revamped. Despite considerable diversification, many secondary school systems in this region came to reflect dominant patterns in other European educational systems. This was especially true of countries that subsequently became members of the European Union (Catlaks, 2006).

Secondary Education in Postcolonial States

During the colonial era, educational frameworks in Africa and Asia were institutionally segmented, elitist, and racially divided. Most were enlisted to support, directly or indirectly, Western domination over native populations. In many African colonies, for example, indigenous children learned rudimentary

skills in mission or village “bush” schools, but few passed the rigorous examinations for entrance into upper-elementary or secondary grades. At the same time, colonial authorities actively developed modern academic and technical education for the children of European settlers. Such schools nurtured an elitist, racially exclusive group with a shared culture and ideology, who held a monopoly over high-level skills taught in academic schools (King, 1990).

Following independence, African and Asian governments were exposed to two types of pressures: the commitments of their leaders to weaken or dismantle the educational vestiges of colonial rule and the push by international agencies to expand education as a key condition for socioeconomic development. Certain educational structures were democratized—massive efforts were undertaken to promote free and compulsory primary education (UNESCO, 1958). Nevertheless, few governments altered the underlying principles and policies that had historically governed secondary education. In former French and Belgian colonies, for example, authorities were reluctant to break away from colonial policies and practices (Johnson, 1987). Literary and academic education continued to be emphasized over practical training or market skills. Rote learning continued to dominate classroom interactions; and teaching continue to be driven by examinations (Khan, 1981). To be sure, most newly independent regimes lacked the necessary resources to implement serious changes to secondary curricula and syllabi. Still, as others have argued, the maintenance of the educational status quo clearly served the interests of newly empowered elites (Gauhar, 1981). In short, the elitist character of secondary education changed very little after independence.

In Latin America, as elsewhere, secondary education mirrored European institutions. The educational standards of former imperial powers cast long shadows over the curricular contents and requirements of secondary education. Due to the politicization of education and the historical emphasis on higher education (both public and private), Latin American countries developed extremely unequal educational structures in which university sectors flourished, while primary education languished. Secondary schools mainly served as highly selective institutional channels for university entrance and elite status. Parties representing middle classes called for an extension of secondary education and greater access to higher education, even though inequalities in elementary education were rampant (Rama, 1983).

In the post-World War II period, social science experts, as well as intergovernmental organizations, were instrumental in the circulation of emergent “democratic” conceptions of secondary schooling and meritocratic principles of pupil selection. During the 1970s and 1980s, international agencies encouraged developing countries to adopt educational policies and practices based on human capital models and neo-liberal approaches. These included the expansion, restructuring and diversification of secondary schools, a greater curricular emphasis on practical education, the upgrading of teacher training and qualifications, the support of non-public financing of post-secondary institutions, and the introduction of new technologies and pedagogical approaches. Initially rejected by many national educational authorities, especially in Francophone

Africa, these policy 'innovations' were perceived, by some, as "neo-colonial" attempts to impose new forms of "second-class" education. Over time and in some countries, however, attempts to diminish the elite character of secondary education gained momentum. These include the establishment of programs in agricultural, craft and technical education, and some experimentation with new teaching methods and the use of indigenous languages (Johnson, 1987).

In sum, postcolonial states have increasingly committed themselves ideologically to the transformation of secondary education, addressing a more diverse array of educational, social, and economic purposes. In reality, the restructuring of secondary education systems has been partial and uneven, despite improvements in access. Enrolments in private secondary schools have increased to satisfy unmet demand among certain social classes. More often than not, the expansion of secondary education has had only a marginal impact on improving social mobility prospects and reducing socio-economic disparities. Instead of increased democratization, the partial transformation of secondary education has resulted in the segmentation of different social strata (Braslavsky, 2001).

3. ANALYSIS OF THE DIVERSIFICATION OF SECONDARY EDUCATION

Analytically, the historical transformation of secondary education involved at least four interrelated shifts:

1. the broadening of the aims and purposes of secondary education;
2. the differentiation of secondary education into lower and upper cycles;
3. the establishment of new selection mechanisms--or the discontinuation of old ones--to ease the transition between primary education and (lower) secondary education and thereby increase access; and
4. the development of new school types and/or the diversification of programmes and curricular offerings within existing school types to address the perceived interests and needs of increasingly heterogeneous student populations.

A recent study by Fiala (2006) examined changes in the official purposes of national education systems and provides evidence related to the first shift. Historical trends concerning the second shift are reported below using data compiled by UNESCO's Institute for Statistics (UIS) and the EFA Global Monitoring Report (UNESCO, 2007).[4] Comparative historical information on the third shift has yet to be compiled.

This paper concentrates on the fourth shift: the diversification of secondary level institutional tracks, study programs and curricular offerings over time. The analyses reported below draw extensively on cross-national information on the structure and curricular organization of secondary education compiled by UNESCO's IBE. This information derives from reports filed with IBE

[4] See also UNESCO-Institute for Statistics (2005).

by national education officials, usually in conjunction with the International Conference on Education, or from country-specific curricular timetables sent to the IBE as part of its on-going global observatory of educational systems. Although the vocational sector of secondary education typically includes multiple tracks and timetables, the present study mainly focuses on academic sector tracks—namely, those enabling graduates to continue to post-secondary institutions, some of which are technologically oriented. Information for the most recent period (2000) comes from IBE sources, while information for the 1980s and the 1960s combines data from IBE archives and several additional sources (see Kamens, Meyer and Benavot, 1996). In general the data for the 2000 period are of higher quality than for the earlier periods.

The expansion of lower secondary education and the establishment of a compulsory 'basic education' cycle have, in most countries, reduced various forms of institutional differentiation (i.e., distinctive programmes of study within and between schools). Today, such differentiation mainly occurs at the upper secondary level. Thus, for the analytically purposes, official curricular timetables for lower secondary grades provide a fairly good indication of how pupils' learning opportunities are structured at this level. For upper secondary education, however, more detailed information is needed. Since upper secondary systems can be either comprehensive (1 track) or multi-tracked (e.g., modern language, mathematics and science, humanities, social sciences), it is necessary to examine information concerning:

- school sector (i.e., academic, vocational/technical, teacher training, religious);
- track type or the names of the streams or programs in each sector;[5] and
- official curricular policies for a given track or stream.

(For further information on the analysis of upper secondary education systems, see Kamens, Meyer and Benavot, 1996; Kamens and Benavot, 2006).[6]

[5] There are several issues this study does not (and cannot) address. We do not examine *instructional tracking*, i.e., actual course offerings and how they are sequenced in different systems or the actual enrolments in these different sequences. Nor, as previously noted, do we deal with institutional tracks belonging to the vocational education and training sector. The organization of vocational schools, or specific vocational tracks, while important, is beyond the scope of the present paper.

[6] As shown in the analysis section, the structure and duration of upper secondary education vary considerably across education systems. In most countries upper secondary education begins in grade 9, 10 or 11 and lasts between 2 and 4 years. Such variation creates few problems for the classification of tracks and programs at this level, although it does affect the analysis of intended subjects to be taught and subject emphases. To partially obviate this problem, curricular emphases should ideally be reported for countries with similar upper secondary structures (e.g., for systems spanning grades 9-12 or 10-11). Existing data limitations preclude this possibility and so results are aggregated over different secondary cycles. Future analyses will investigate whether specific upper secondary cycles are linked to distinctive track types and curricular offerings.

In principle, official policies concerning the school curriculum encompass several components: a list of subjects to be taught; the quantities of instructional time (per day, week or year) allocated to subjects; authorized textbooks to accompany classroom instruction; authorized lesson plans or syllabi delineating the topics to be covered; and official directives or guidelines concerning pedagogy and assessments. The present paper focuses solely on the first two components: intended subject areas and time allocations found in official timetables.

The present study draws from a compilation of hundreds of such timetables, which were divided by historical period and coded according to standard rules and procedures.[7] Instructional time for each curricular 'subject' or educational activity was classified by grade level into a scheme of 32 (lower secondary) or 45 (upper secondary) subject areas. At a subsequent stage, lists of detailed subjects were re-classified into 10 general curricular categories (see below).

4. FINDINGS

4.1. The expansion of secondary education

Worldwide, an average of 65% of the relevant age group is enrolled in secondary schools as of 2004 (see Table 2). At the regional level, North America and Western Europe have achieved almost universal secondary education, with an average net enrolment ratio (NER) exceeding 90%. In other regions—namely, Central and Eastern Europe and Central Asia—the average NER is between 82% and 85%. In the remaining regions the NERs are considerably lower: Latin American and the Caribbean (67%), East Asia and the Pacific (69%), Arab States (56%), South and West Asia (45%) and sub-Saharan Africa (24%). To be sure, such averages hide important within-region disparities. For example, secondary education is more developed in Anglophone Africa, particularly in the south, than in Central and West Africa.[8]

Table 2: *Gross and net enrolment ratios in secondary education, 2004, by region and development status*

	Gross Secondary Enrolment Ratio	Net Secondary Enrolment Ratio
World	65.0	57.7

[7] These rules specified, for example, the coding of subjects listed as combined subjects, interdisciplinary subjects or electives, as well as timetables specifying regional, linguistic, cultural or religious differences. Examples of 'combined' subjects include 'Pensamiento, acción social e identidad nacional' or 'Histoire, éducation civique et géographie'.

[8] As this paper draws on data from different international organisations—namely UNESCO and the World Bank--different regional classifications of countries are noted in each table.

Countries in transition	91.6	83.9
Developed countries	101.1	91.1
Developing countries	59.1	52.2
Arab States	66.3	56.0
Central and Eastern Europe	90.5	82.1
Central Asia	89.9	85.0
East Asia and the Pacific	72.9	68.8
East Asia	72.4	68.8
The Pacific	103.9	68.3
Latin America and the Caribbean	85.7	66.6
Latin America	86.6	67.4
Caribbean	57.5	41.3
North America and Western Europe	101.3	91.0
South and West Asia	51.3	45.3
Sub-Saharan Africa	29.9	23.9

Source: UNESCO (2007). UNESCO regional classification

During the 1999-2004 period, the gross secondary enrolment ratios rose in 117 out of 150 countries with data (see UNESCO, 2007). In about one-third of these cases, increases were considerable, exceeding ten percentage points. Despite this general tendency, some countries—for example, Malawi, United Arab Emirates, Zimbabwe, South Korea and Ukraine—recorded decreases in their coverage of secondary education during this period.

4.2. The distinction between lower and upper secondary education

The vast majority of the countries in the world (over 80%) have established two relatively distinct levels of secondary education. *Lower secondary education* (ISCED level 2), often compulsory, seeks to maintain and deepen the educational aims of primary schooling.[9] In some countries it is provided in the same institutions and taught by the same teachers as primary education; in others it is institutionally distinct from primary education and shares more in common with upper secondary education (UIS, 2005). The onset of *upper secondary education* (ISCED level 3) usually marks the end of compulsory schooling and consists of diverse structures, tracks and programs (see below) and a more specialized teaching staff.

Based on profiles of national educational systems (IBE, 2005; UNESCO, various years), Table 3 reports regional and longitudinal variation in the extent to which

[9] Lower secondary education is compulsory in all of Western Europe, North America, and Central and Eastern Europe. This is also the case in about 80% of the countries in Latin America, the Caribbean, East Asia and the Pacific, and in about 75% of the Arab States. In South and West Asia and sub-Saharan Africa, lower secondary education is compulsory in less than 40% of countries (UNESCO, 2007).

secondary schooling is divided into lower and upper secondary levels.[10] Comparative evidence suggests that countries are more likely to demarcate a line between lower and upper secondary education when:

- the official duration of primary education is reduced--say, from 8 to 6 years;
- a 'basic education' cycle is established by extending compulsory schooling into the lower secondary level; or
- access to secondary levels institutions significantly expands.

Table 3: Percentage of national education systems in each region that differentiate between lower and upper secondary education (number of cases in parentheses)

	Percentage of national education systems in each region that distinguish between lower and upper secondary education		
	Period		
Region	1960s	1980s	2000
Latin America & Caribbean	91 (22)	74 (34)	71 (34)
East Asia and Pacific	92 (12)	79 (24)	76 (21)
Sub-Saharan Africa	80 (30)	80 (44)	81 (47)
Middle East & North Africa	87 (15)	100 (18)	83 (18)
South Asia	100 (4)	100 (8)	100 (8)
Eastern Europe and Central Asia	50 (8)	33 (8)	85 (27)
Advanced Industrialized Countries	73 (26)	92 (26)	97 (29)
World Totals	81 (117)	81 (163)	82 (184)

Source: UNESCO-IBE, 2005; UNESCO, various years. World Bank regional classification.

Given these realities, international agencies have begun to report enrolment figures for lower and upper secondary education. Table 4 reports worldwide and regional trends for lower and upper secondary education and indicates that:

1) Lower secondary education has significantly expanded in most of the world, with the exception of sub Saharan Africa. The average GER in 2003/4 is over 90% in North America, Western Europe, Latin America, Central Asia, East Asia and Central and Eastern Europe and somewhat lower in the Arab States (79%) the Caribbean (75%) and South and West Asia (64%). In sub Saharan Africa the average GER is considerably lower (37%).
2) At the upper secondary level, only half of the relevant age group is enrolled: the global GER increased from 47.4% in 1999 to 51.2% in 2004. During this period, changes in access to upper secondary education increased only slightly in most regions.

[10] This table is not based on constant cases, but such analyses point to the same regional trends.

3) Regional variation in upper secondary education is quite significant: whereas GERs are over 75% in North America and Western Europe, Central and Eastern Europe, the Pacific and Central Asia, they are less than 45% in the Caribbean, South and West Asia, and sub Saharan Africa.

Table 4: *Gross enrolment ratios in lower and upper secondary education, 1999-2004*

	Lower secondary 1998/99	Lower secondary 2003/4	Upper secondary 1998/99	Upper secondary 2003/4
World	72.1	78.1	47.4	51.2
Sub Saharan Africa	28.3	36.5	19.0	22.6
Arab States	72.1	79.4	44.7	52.3
Central Asia	89.5	94.5	76.6	78.4
East Asia and the Pacific	80.2	93.4	46.1	51.2
East Asia	*80.0*	*93.5*	*45.0*	*50.3*
Pacific	*88.0*	*88.0*	*139.4*	*131.5*
South and West Asia	59.4	63.8	33.8	40.0
Latin America and Caribbean	95.4	99.7	62.0	68.7
Latin America	*96.3*	*100.4*	*62.8*	*70.1*
Caribbean	*67.4*	*74.6*	*41.3*	*41.9*
N. America & West. European	102.5	103.1	108.4	99.3
Central and Eastern Europe	92.4	92.3	78.0	88.1

Sources: UIS database and UNESCO (2007). UNESCO regional classification.

Overall, while the universalization of secondary education is a near reality throughout Europe and North America, in other regions the coverage of secondary education is mainly limited to the lower secondary level. And, relative to other developing regions, access to lower secondary education in sub-Saharan Africa is quite limited. Finally, global differences in the coverage of upper secondary education are marked.

4.3. The changing programmatic composition of secondary education

Tracing the expansion of lower and upper secondary education captures only part of the on-going transformation of secondary education. Equally informative is the changing contents and composition of programs of study offered in secondary schools. By drawing upon official descriptions of national education systems, it is possible to observe the relative prevalence of five major 'sectors' in secondary education—namely, academic/general, vocational/technical, teacher training, religious/theological, and specialized programs in the fine arts, music or sports.

Obviously, every country includes academic programs at the secondary level (see Table 5). A lesser known trend is the extensive upgrading and 'professionalisation' of teacher training programs, which were previously offered in secondary schools and are now mainly found in post-secondary institutions.

Whereas 77% of the countries in the world had secondary-level teacher training programs in the 1960s, only 12% have such programs today. A similar trend holds for distinctive programs in religious or theological training: while about one-third of all secondary school systems had such programs in the 1960s; only 6% offer them today. The main exception being Middle East/North Africa in which 40% of the countries still offer religious training programs at the secondary level. Specialized secondary programs in the fine arts and sports are found in about one of every seven countries worldwide. In many countries such specialized secondary school programs have either been eliminated or integrated into the academic sector.

Table 5: Percentage of countries in each region offering secondary-level programs of study in five educational 'sectors', by historical period

Secondary Education 'Sectors'	Academic/General Sector			Vocational/ Technical Or Technological Sector			Teacher Training Sector			Religious/ Theological Training Sector			Other *
Period	'60s	'80s	'00s	'60s	'80s	'00s	'60s	'80s	'00s	'60s	'80s	'00s	'00s
Region	(n=105 -116)	(n=141 -159)	(n=160-162)										
LAC	100	100	100	96	85	93	86	38	17	20	3	0	10
EAP	100	100	100	92	86	87	67	36	7	25	29	13	7
AFR	100	100	100	100	98	84	93	54	13	29	9	0	8
MNA	100	100	100	100	100	94	93	53	12	43	56	41	29
SAS	100	100	100	100	75	75	75	38	0	25	50	0	13
ECA	100	100	100	100	100	96	88	44	4	0	13	0	15
AIC	100	100	100	92	96	85	46	15	19	39	23	4	19
Total	***100***	***100***	***100***	***97***	***92***	***89***	***77***	***40***	***12***	***29***	***21***	***6***	***14***

* This category consists, by and large, of specialized schools in the fine arts, music or sports.

Source: UNESCO-IBE, (2005). World Bank regional classification.

The vocational/technological sector is more difficult to characterize since it reflects several on-going changes. First, there appears to be a movement away from institutionally distinct vocational/technical programs at the secondary level, mainly in sub-Saharan Africa, South Asia and the more industrialized countries. Some programs have been redefined as technological education and "upgraded" to the post-secondary level. Others have remained at the upper secondary level, and were merged into comprehensive schools (see below). Second, many vocational/technical programs are losing their terminal character. Whereas vocational students were once channelled directly into the labour

market, today graduates of TVET programs often have an option of sitting for national matriculation exams or entering post-secondary institutions.

Widespread attempts to transform and upgrade the status of vocational/technical education and training (TVET) at the secondary level have had minimal impact on secondary enrolments. TVET constitutes less than one-fifth of all upper secondary enrolments. This share has recently declined worldwide except in Central Asia and Central and Eastern Europe (see Table 6), where it had historically been prominent (Benavot, 1983). Overall, the continued prominence of secondary vocational/technical programs belies important changes to their charter and links to higher education. International debates continue over the value of vocational education and training in today's globalised economies.

Table 6*: Share of TVET enrolments in upper secondary education, 1998 & 2002*

	1998	**2002**
World	22.9	19.2
Sub Saharan Africa	11.6	11.0
Arab States	30.4	26.7
Central Asia	17.0	21.9
East Asia and the Pacific	46.8	33.8
South and West Asia	2.1	1.9
Latin America and Caribbean	22.3	19.6
North America & West. European	31.3	28.9
Central and Eastern Europe	44.3	44.2

Source: UIS database. UNESCO regional classification.

4.4. The structure and duration of upper secondary educatio*n*

As previously noted, upper secondary education typically marks the end of compulsory schooling and the onset of a diversified provision of specialized programs of study. However, the exact grades comprising upper secondary education--to the extent this division exists--vary considerably across countries. As Table 7 shows, in almost half of the countries in the world (88/186), upper secondary education begins at grade 10. However, in large numbers of countries it begins at either grade 9 or grade 11. In addition, while the modal duration of upper secondary education is three years, the duration in many countries is either 2 or 4 years.

Table 7: *The onset and duration of upper secondary education*

	Grade level of Onset of Upper Secondary Education, 2003/04					
Grade Level	**8**	**9**	**10**	**11**	**Totals**	
Number of countries	2	44	88	52	186	

	Duration of Upper Secondary Education, 2003/04 (in years)					
Duration in Years	**1**	**2**	**3**	**4**	**5**	**Totals**
Number of countries	1	58	81	43	3	186

Source: UIS database

A detailed depiction of upper secondary systems can be seen in Table 8, which lists the frequency of specific structural arrangements of ISCED level 3. This table shows that five patterns (i.e., consisting of grades 10-12, 11-12, 9-12, 10-11 and 11-13) characterize 80% of the world's education systems.

Table 8: *The frequency of structural arrangements of upper secondary education*

Structural organization of upper secondary education		**Number of countries (out of 186) in which specific structural arrangement exists**
Starts in grade:	**Duration in years**	
10	3	49
11	2	30
9	4	26
10	2	24
11	3	20
10	4	14
9	3	11
9	2	4
Other patterns (8-3; 8-4; 10-1)		3

Source: UIS database

Structures of upper secondary education vary across (and within) regions. Several 'models' of secondary schooling, some reflecting earlier colonial structures, have emerged over time (World Bank, 2005).

4.5. The number and composition of tracks in upper secondary education

Historically, both the academic and vocational sectors of secondary education contained multiple tracks (or streams) into which students were channelled or from which they could choose. This section examines evidence on the changing number and composition of tracks available in the academic sector. Data limitations preclude comparing such information for the vocational sector.

A key distinction in upper secondary education is between systems with multiple academic tracks, and those with a single, general or comprehensive track. Table 9 reports global and regional changes (since the 1960s) in the percentage of countries with a single academic track at the upper secondary level. Over time there has been an increase in single-track secondary systems: from 30% of the 113 educational systems in the 1960s with data to 51% of the

161 educational systems in the 2000s with data. At the regional level this trend is apparent in almost all regions except for the Middle East and North Africa. In Eastern Europe and Central Asia, the break-up of the Soviet Union resulted in a significant increase in single-track upper secondary systems. Further analyses indicate that single-track systems are more prevalent in Anglophone Africa than in Francophone Africa.[11]

Table 9*: Percent of countries in each region that organize upper secondary education according to a single track, by time period (number of cases in parentheses)*

	Percentage of countries with a single academic track in upper secondary education		
	Historical Period		
Region	1960s	1980s	2000
Latin America & Caribbean (LAC)	**36** (22)	**44** (27)	**52** (29)
East Asia and Pacific (EAP)	**50** (12)	**40** (15)	**73** (15)
Sub-Saharan Africa (AFR)	**39** (28)	**55** (33)	**47** (38)
Middle East & North Africa (MNA)	**14** (14)	**6** (16)	**6** (18)
South Asia (SAS)	**25** (4)	**0** (7)	**75** (8)
Eastern Europe and Central Asia (ECA)	**50** (8)	**25** (8)	**65** (26)
Advanced Industrialized Countries (AIC)	**12** (25)	**20** (25)	**52** (27)
World Totals	**31** (113)	**34** (131)	**51** (161)

Source: UNESCO-IBE (2005). World Bank regional classification.

Table 10 examines the changing names of upper secondary tracks between 1930 and 1985.[12] Based on official information for 450 academic tracks, the results show that classical and semi-classical programs/tracks have declined in all world regions since the 1930s. The one region in which they remain relatively prominent, although less so than in the past, is Europe. By contrast, the prevalence of comprehensive/general tracks as well as those specializing in mathematics and sciences and, to some extent, in the humanities and the social sciences has been increased. Supplemental analyses showed that track labels reflect real differences in contents and in the time allotted to particular subjects. For example, mathematics and science tracks usually contain about twice as many class periods devoted to the study of these subjects as compared to other tracks. Humanities and modern language tracks also differed

[11] The Francophone countries include Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Democratic Republic of Congo, Cote d'Ivoire, Gabon, Guinea-Bissau, Guinea, Madagascar, Mali, Mauritania, Mauritius, Niger, Senegal, Sudan and Togo. The remaining countries are Anglophone, with the exceptions of Equatorial Guinea (Spanish), Angola, Mozambique, Cape Verde, Sao Tome and Principe (all Portuguese-speaking).

[12] The data for this table are based on compilations and analyses in Meyer, Kamens and Benavot (1996).

substantially from comprehensive ones in the amount of time devoted to the curricular domains of language and literature and in the number of such courses that are required for completion of the program (Meyer, Kamens and Benavot, 1996).

Table 10: *Distribution of Upper Secondary Programs/Tracks by Type and Historical Period*

	Historical period			
Upper Secondary Program/Track Type	**1930s %**	**1960s %**	**1980s %**	**Total %**
Comprehensive or General	23.3	30.5	32.0	29.2
Mathematics, Science and/or Technical	21.6	27.9	33.3	28.1
Classical or Semi-Classical	36.2	16.2	9.3	19.0
Arts and Humanities	7.8	12.2	16.7	12.5
Modern Languages	9.5	10.2	5.3	8.4
Social Sciences or Law	1.7	3.0	3.3	2.8
Total	100.1	100.0	100.0	100.0
Number of upper secondary tracks classified in each period	(116)	(197)	(150)	(463)

Source: Meyer, Kamens and Benavot (1996)

Recent data describing track types in upper secondary education is presented in Table 11, which classifies 345 academic tracks comprising the upper secondary systems of 161 countries in the 2000-03 period. While the two datasets are not entirely comparable, they do indicate:

- A continuing decline of classical programs insofar as only 1% of all upper secondary tracks were identified as such in the most recent period;
- Considerable continuity in the relative prevalence of comprehensive/general (29%) and mathematics, scientific and technological tracks (25%+6%);
- A small increase in the prevalence of social science and business tracks;
- Slight tendencies to establish cross-disciplinary tracks (e.g., humanities and sciences) and to incorporate some teacher training and religious training programs in the academic sector of upper secondary education.

Table 11: *Classification of the Names of Upper Secondary Academic Tracks, 2000-03*

Classification of Academic Track Names	Number of Tracks	Frequency %
Comprehensive or General	100	29
Sciences and/or Mathematics	88	25
Technical, Technological, Computer	21	6
Modern Languages; Humanities, Arts, Letters	73	21

Social Sciences; Economics, Business, commercial	33	10
Classical, Semi-Classical	2	1
Humanistic and Scientific	9	2.5
Mixed Humanities and Social Sciences	5	1.5
Normal School, Teacher Training, Education	4	1
Religious Education, Training	4	1
Vocational (e.g., hotel, home economics, agriculture)	3	1
Other	3	1
Totals	345	100

Source: UNESCO-IBE (2005).

Global trends in the organization of upper secondary systems conceal considerable regional variation. For example, in the most recent period, over two-thirds of countries in Asia (EAP & SAS) and Eastern Europe had a general or comprehensive upper secondary program, whereas almost all countries in the Middle East and North Africa had systems with specialized tracks in the sciences and humanities. In other regions the prevalence of general/comprehensive programs versus more specialized upper secondary tracks was close to the global average.

Two summary remarks are in order. First, from a global perspective, academically oriented upper secondary education is increasingly organized around either a comprehensive school model involving some course selection by students or the provision of specialized programs of study (e.g., mathematics and science, humanities and modern languages, social sciences) emphasizing distinctive contents. The latter mode typically occurs in systems where classical programs were once strong. Second, at the national level, upper secondary education systems experience a considerable degree of volatility over time (see Kamens and Benavot, 2006). A surprisingly large percentage of countries have moved between single- and multi-track systems during the post-World War II period. This volatility in track composition reflects the intensification of national reforms (re-structuring) of secondary education since the 1960s.

4.6. The curricular organization of secondary education by subject area

This section examines the intended curricula of lower secondary education in different countries based on official timetables.[13] Specifically, the analyses focus on grades 7 and 8, which are the typical grades of lower secondary education. As previously noted, the analyses focus solely on subjects listed in official timetables and not on the detailed specification or actual contents of each taught subject.

[13] As Meyer, Kamens and Benavot (1996) reported, knowing the name of an upper secondary track provides a reasonably accurate indication of curricular emphases: that is, subjects taught and time allocations. In addition, analyses of the recent curricular policies of the upper secondary tracks remain incomplete.

Table 12 presents mean curricular emphases in lower secondary education, worldwide and by region, for the most recent period.[14] At the global level, considerable instructional time is devoted to languages (about 30%), mathematics, sciences and computer/technology (about 30%), and the social sciences (about 13%). The remaining time is primarily devoted to the arts, physical education, skills and religious/moral education.

Table 12*: Mean percentage of total instructional time in Grades 7 and 8 allocated to select curriculum areas, circa 2000, by World Bank-defined region*

		Mean Percentage of Total Instructional Time Allocated to select Curricular Areas* in Grades 7 & 8										
Region	# of Cases	LANG	MATH	SCIENCE	CTEC	SOCSC	RELM	ARTS	SPORT	SKILL	OTHER	Totals
LAC	19	25.0	14.8	11.9	3.3	15.3	2.3	7.4	5.4	7.5	7.3	100.0
EAP	12	24.0	13.7	13.9	2.4	13.8	4.0	4.6	6.1	4.4	13.2	100.0
AFR	23	35.0	15.6	12.7	2.0	13.1	2.7	4.4	6.1	6.8	1.5	100.0
MNA	16	34.4	15.1	9.9	1.8	11.9	7.3	5.9	5.1	5.7	3.1	100.0
SAS	5	34.5	13.8	13.4	0	12.3	5.8	4.3	3.6	8.7	3.5	100.0
ECA	25	27.9	13.7	17.5	2.7	13.5	1.1	5.8	5.9	3.2	8.7	100.0
AIC	16	29.4	12.4	10.3	2.8	12.1	4.3	8.8	7.3	4.8	7.9	100.0
Total	116	29.8	14.3	13.0	2.4	13.3	3.4	6.0	5.9	5.5	6.4	100.0
	SD	7.1	3.6	5.6	3.7	4.1	4.0	3.8	2.6	6.0	8.6	
	CV**	0.2	0.3	0.4	1.5	0.3	1.2	0.6	0.4	1.1	1.3	

* Each general curricular area consists of the following subjects:
LANG refers to Language education and includes instruction in national, official, local and/or foreign languages and literature
MATH refers to Mathematics and includes all math-related subjects
SCIENCE refers to Science and includes all general science subjects (e.g., natural, physical) as well as chemistry, biology and physics
CTEC refers to Applied Science education and includes Computers and technological subjects
SOCSC refers to Social Science and includes social studies, history, geography, social sciences, environmental studies, civics and citizenship education
RELM refers to religious or moral education and/or ethics
ARTS refers to Aesthetic education and includes art, music, dance, singing, handicrafts
SPORT refers to sports and physical education
SKILL refers to subjects such as health education, hygiene, agriculture, manual training, vocational education, domestic science and life skills
OTHER refers to all remaining subjects, but especially electives or (required) optional subjects.
**CV refers to the coefficient of variation, which is calculated as the standard deviation (SD) divided by the mean.

Interesting regional differences are observed, most of which are small. For example, language education receives greater emphasis in Africa, the Middle East and South Asia than in other regions. Mathematics is a relatively important subject in sub-Saharan Africa, and less so in the advanced industrialized countries. Countries in Latin America and the Caribbean place greater emphasis on social science subjects, aesthetic education and skills and less emphasis on language and religious/moral

[14] Similar tables for the constant set of cases in the 1980s and the 2000s and for total instructional time are available upon request. For detailed discussions of select subject areas, see Benavot and Braslavsky (2006) and Amadio, Truong and Tshurenev (2006).

education. Industrialized countries allocate relatively more time to aesthetic and physical education and less time to science education. Religious and moral education is allocated very little time in Eastern Europe and Central Asia, but substantially more time in the Middle East and North Africa.

In general, regions share much in common in relation to the required subject domains of the lower secondary curriculum. Some variation is observed when factoring in the length of the school year and estimating yearly instructional hours pupils receive (see Benavot and Amadio, 2005).

5. DISCUSSION

Over the course of twentieth century, as countries increased access to secondary education and extended the years of compulsory schooling, the array and purposes of secondary level institutions were transformed. Teacher-training institutions, which were quite prevalent at the secondary level, underwent 'professionalisation' and were upgraded into post secondary institutions. Specialized secondary schools that trained religious teachers and leaders were phased out in much of the world, except in the Middle East and North Africa. Vocational and technical schools, whose purpose was to provide practical skills and training for entrance into the labour market, lost their terminal character and became the object of sustained reform efforts.

Concurrently, the heart and soul of secondary education—its academic core—experienced considerable democratisation with the influx of larger student cohorts. Traditional, highly selective programs in classical education were marginalized, except in a small group of European countries. The break-up of the Soviet Union eroded the legitimacy of 'polytechnical' model, which had blurred the boundaries between school and work, and between academic and vocational education. As older models of secondary education withered away, many countries restructured their academic secondary systems around two core models. The first model, prominent in Europe and many former colonies, involved the establishment of multiple tracks emphasizing 'modern' fields of study such as sciences, mathematics, modern languages or the social sciences. The second model, initially developed in the United States, provided a core set of curricular offerings (together with electives from which students can choose) in an all-encompassing comprehensive high school. While European systems organized high status, discipline-based knowledge in academic tracks (or schools) and lower status, practical knowledge in vocational tracks (or schools), comprehensive schools combined both knowledge forms in an inclusive curriculum that sought to address the diverse interests, talents and abilities of all pupils.[15] In short, the evidence suggests that the institutional array and track composition of secondary schooling today is considerably more standardized than in the past.

[15] Both models of secondary schooling, it should be noted, continued to serve as effective selection mechanisms, employing a variety of practices to limit student access to higher education.

How have these processes affected the contents of secondary education? Does the increasing standardization of secondary institutions and tracks, and the on-going postponement of occupational specialization, inevitably result in 'unbearably irrelevant' school curricula for young people today (World Bank, 2005:77)? Does the transformation of secondary schools into more flexible, inclusive and democratic institutions, in which students face a growing array of curricular choices and options, necessarily reduce the economic and social relevance of their learning experiences? Do the conventional subject domains of the official curriculum have no bearing on the skills and competencies with which young people need to be equipped as they confront the challenges of adult life?

The causal linkages embedded in these questions are not easily disentangled. National reforms of secondary education, which establish particular organizational forms, may have little impact on curricular contents and choices. In many settings, changing the composition of curricular tracks is relatively easy and cheap to accomplish, which partially accounts for the resulting volatility. However, the choice and contents of subjects taught as well as the pedagogy of classroom life are less amenable to change. Indeed, curricular contents appear to be more sensitive to the flows of global ideologies and dominant models than the particular structures in which they are situated. School officials often find creative ways to accommodate current ideologies and fashions without making fundamental changes to school life. On the other hand, educational decentralization and the devolution of political authority give voice to new actors—for example, parents, local officials, non-profit agencies. They also create new possibilities for greater sub-national diversity within education systems (Astiz, Wiseman and Baker 2002).

In short, the diverse curricular structures in which student learning is organized and accomplished in secondary schools today deserve greater attention by scholars and policy makers alike. Complex international, national and local forces impinge on these structures. Secondary education generally, and lower secondary education in particular, represent a special period of curricular trial and error. Between the 'obsession' on teaching generic skills during the primary grades and the growing consequences of pupil achievement (or the lack thereof) during the final years of schooling, secondary curricula can provide space for experimentation and exploration. Such conditions are more likely to engender competences with important long-term consequences.

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