# 13

# New Proposals for Upper Secondary Curricula in Four Latin American Countries, 1990–2005

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Most recent school restructuring initiatives have combined a series of features. They have adopted a posture of 'optimistic newness': an amnesia which focuses on the spontaneous creation of solutions—of new 'change forces'. Above all, they have shown an almost willful disregard of previous change efforts and of the embedded contexts and frames of schooling

This analysis focuses on new proposals for upper secondary curricula in four Latin American countries (1990–2005): Argentina, Brazil, Chile and Mexico. It aims to enrich the content and debate on upper secondary education curricula—a level of education disregarded until the beginning of the twenty-first century.

This chapter is organized into two major sections. Section I deals with changes in structure and curriculum,[1] discussing two main ideas:

1. A redefinition of secondary education in order to clarify a new 'universal' level with goals and objectives that: (a) include a changed 'secondary'[2] education; and (b) integrates the 'double track' of preparing students for entry into higher education and the labor market.
2. Specific analysis of the curricular proposals in these four Latin American countries showing: different curricular structures and similar replications of the universal possibilities of school curriculum; and a new general education that integrates vocational education.

Section II looks at the possibilities of educational change viewed from two perspectives:

3. An exploration of two key questions regarding the structural changes and curricular proposals: their external validity; and the actual possibilities of educational change.



*A. Benavot and C. Braslavsky (eds.),*
*School Knowledge in Comparative and Historical Perspective,* 221–242.

4. A consideration of educational institutions: their role in implementing the new proposals and thus in achieving the new goals of upper secondary education in the four countries of study; and their influence on the actual proposals according to differing institutional histories.

## Section I. Changes in structure and curriculum

During the twentieth century, Argentina, Brazil, Chile and Mexico all consolidated a 'double track upper secondary system', in contrast to a 'multi-track system' or a 'comprehensive system' (see chapter by Kamens and Benavot) between grades 7-8 until grades 11-12. One track led to university and the other prepared young people to enter a 'mid-level technician' position in the labor market. These two secondary education tracks with different objectives, implemented in different and separate institutions, enrolling students from different social strata, offering different certifications, eventually had different effects on the students' futures.

The students enrolled in the second track had no chance of meeting the requirements to pursue a university education. The vocational/technical secondary education track, internationally recommended at the time, would prepare young people for immediate entry into the labor market with a higher qualification than their parents. This promoted a democratization of secondary education, a certain social mobility and an answer to a perceived national economic need for modern mid-level technicians. At the same time, it was a legitimate way of rerouting students from what was then considered a 'massive' demand for university education.

### Changes in structures[3]

During the 1990s, the political decision of reforming upper secondary education in all four countries was implemented in the two great spheres of decision-making proposed by Cox: the structure and the curriculum. As I will argue later in this paper, a third great sphere of decision-making was not taken into account: the educational institution.

Cox defines structure as the configuration of the school system in a determined sequence of years, a sequence that may or may not offer branches, thereby defining the major boundaries of the system (Cox 2001a). According to this definition, the relative position of upper secondary education changed in Argentina and in Mexico. Moreover, in all four countries, new definitions, objectives and curricula for upper secondary education have been officially approved.

**Argentina**

As of April 1993 (Ley Federal de Educación 24.195), the Argentine education system established a new general basic education structure consisting of three cycles of three grades each—a total of nine grades. That, together with one grade of pre-school education, constitutes ten-grade compulsory basic education. After this basic education, a new *polimodal* (comprehensive with multiple tracks) secondary education (grades 10-

12) was designed that devotes about 50 percent of curricular time to a general basic education ensuring the acquisition of basic competencies, 30 percent to an education oriented towards five different areas (natural sciences; economy and management of organizations; humanities and social sciences; production of goods and services; communication, arts and design), and 20 percent to complementary contents defined by the establishments themselves. This upper secondary education may articulate with the 'technical/professional itineraries', where some 1,200 to 1,800 additional hours offer options in four different economic sectors and eleven vocational profiles.

**Brazil**

A new educational reform was approved in Brazil in 1996: Secondary education would no longer be an intermediate level of schooling between elementary and higher education and the education system would be defined in two levels only: basic (now including grades 9 to 11) and higher. New national curriculum parameters for improving secondary education were established by the Law of Directions and Bases for National Education (LDB, Law 9394/96). There is also a new conception of a parallel vocational/technical education structured in three levels as shown in Table 13.1. A very recent Presidential decree (5.154) establishes alternatives to integrate general and technical secondary education in the same establishments, facilitate vocational and general education, and allow schools to provide more choices to students in terms of general and technical education.

**Chile**

In Chile, the same general structure of the school system remains in use to date—with some interesting changes: there is a common general curriculum for the first two grades, together with some freedom for each school to decide on curricular definitions. After grade 11, a differentiated education starts, covering the two traditional tracks: humanistic/scientific and technical/vocational. Since 1998 a decree has been adopted establishing the fundamental aims and minimum contents for secondary education. In May 2003 compulsory and free of charge secondary education ('*liceo* for everybody' up to 21 years of age, grades 9-12) under state responsibility was established as a constitutional reform.

**Mexico**

In 1993 a change in the national constitution established nine grades of compulsory (and free of charge) basic education in Mexico, including the three grades of lower secondary education (grades 7-9).[4] The importance of upper secondary education was recognized only after 2000, when the National Plan for Education 2001-2006 included proposals to increase coverage of the age group to at least 60 percent of the potential demand, and to integrate the three different modalities existing since the 1970s in order to offer equivalent opportunities for every young person. All modalities will pursue three main objectives: education for further studies, education for work and education

## Table 13.1: Place and position of lower and upper secondary education

<table>
<tr><th>Ideal cohort age</th><th colspan="3">Argentina</th><th colspan="3">Brazil</th></tr>
<tr><td></td><td colspan="2">1990</td><td>2004</td><td colspan="2">1990</td><td>2004</td></tr>
<tr><td>1</td><td colspan="3" rowspan="2"></td><td colspan="2" rowspan="2">Day care or nursery</td><td rowspan="5"></td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td rowspan="3">Pre-primary education</td><td colspan="2">1</td></tr>
<tr><td>4</td><td colspan="2">2</td><td colspan="2" rowspan="2">Pre-school</td></tr>
<tr><td>5</td><td>3 comp</td><td>Preschool 3 comp</td></tr>
<tr><td>6</td><td rowspan="7">Primary education (comp.)</td><td>1</td><td rowspan="8">Ten grades of basic compulsory education 1st cycle<br><br>2nd cycle<br><br>3rd cycle</td><td rowspan="8">First grade education (comp.)</td><td>1</td><td rowspan="8">Compulsory education</td><td rowspan="8">Parallel vocational/ technical education in three levels, basic-non formal; technical secondary education; technologic higher education</td></tr>
<tr><td>7</td><td>2</td></tr>
<tr><td>8</td><td>3</td><td>2</td></tr>
<tr><td>9</td><td>4</td><td>3</td></tr>
<tr><td>10</td><td>5</td><td>4</td></tr>
<tr><td>11</td><td>6</td><td>5</td></tr>
<tr><td>12</td><td>7</td><td>6</td></tr>
<tr><td>13</td><td rowspan="3">Secondary basic education</td><td>1</td><td>7</td></tr>
<tr><td>14</td><td>2</td><td>8</td></tr>
<tr><td>15</td><td>3</td><td rowspan="3">*Polimodal*. Five basic modalities. Additional technical itinerary</td><td rowspan="3">Second grade education: vocational education integrated</td><td>9</td><td rowspan="3">Upper secondary education. Part of Basic education of 11 grades</td></tr>
<tr><td>16</td><td rowspan="2">High school degree, commercial or technical modalities</td><td>4</td><td>10</td></tr>
<tr><td>17</td><td>5</td><td>11</td></tr>
<tr><td>18</td><td colspan="5">Higher education</td></tr>
<tr><td colspan="7">Higher education</td></tr>
</table>

**within compulsory education, 1990 and 2004**

<table>
<tr><th>Ideal cohort age</th><th colspan="4">Chile</th><th colspan="4">Mexico</th></tr>
<tr><td></td><td colspan="2">1990</td><td colspan="2">2004</td><td colspan="2">1990</td><td colspan="2">2004</td></tr>
<tr><td>1</td><td colspan="3" rowspan="2">Nursery</td><td rowspan="3"></td><td colspan="2" rowspan="2">Initial education</td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td rowspan="3" colspan="3">Infant courses</td><td rowspan="3">Pre-school</td><td>1</td><td rowspan="9">Twelve grades of basic compul-sory education</td><td rowspan="3">Three grades of pre-school (comp.)*</td></tr>
<tr><td>4</td><td>2</td></tr>
<tr><td>5</td><td>3 (gene-ralized)</td></tr>
<tr><td>6</td><td rowspan="5">Primary education (comp.)</td><td>1</td><td rowspan="5">Elementary education (comp.)</td></tr>
<tr><td>7</td><td rowspan="8">Primary compul-sory education</td><td>1</td><td rowspan="8">Twelve grades of basic compul-sory education up to 21 years of age</td><td rowspan="8">Primary education</td><td>2</td></tr>
<tr><td>8</td><td>2</td><td>3</td></tr>
<tr><td>9</td><td>3</td><td>4</td></tr>
<tr><td>10</td><td>4</td><td>5</td></tr>
<tr><td>11</td><td>5</td><td>6</td></tr>
<tr><td>12</td><td>6</td><td rowspan="3">Secondary education or upper basic education</td><td>1</td><td rowspan="3">Compul-sory secondary education</td></tr>
<tr><td>13</td><td>7</td><td>2</td></tr>
<tr><td>14</td><td>8</td><td>3</td></tr>
<tr><td>15</td><td rowspan="4">Lyceum : human-istic scientific or technical profess-ional</td><td>9</td><td>Lyceum: common courses</td><td rowspan="3">Upper secondary education: general, bivalent, professional</td><td>1</td><td colspan="2" rowspan="2">Upper secondary education: general, bivalent, mid-level technician</td></tr>
<tr><td>16</td><td>10</td><td rowspan="2">Lyceum: two branches</td><td>2</td></tr>
<tr><td>17</td><td>11</td><td>3</td></tr>
<tr><td>18</td><td>12</td><td colspan="3">Higher education</td></tr>
<tr><td colspan="9">Higher education</td></tr>
</table>

* Implementation to be completed by 2008.

for citizenship. As of 2003, all of the different modalities have been providing new study plans and programs. However, in 2002, a surprising congressional decision established three grades of compulsory free pre-school for populations aged 3, 4 and 5, to be implemented in a phased way and completed by 2008. This constitutional reform shifted compulsory education towards early childhood, leaving an open question as to what the priorities and new opportunities for young people will be.

**Enrolment and access**

There is a common recognition among different Latin-American specialists that upper secondary education originated as an opportunity for the elite, both in enrolment and contents (Cox 2001a: 31; Rama 2001; Belleï 2003; Gallart 2003). Nevertheless, during the twentieth century, various efforts were made to democratize access. At the end of the century, all four countries had significantly increased enrolment, although data show varied results.

**Table 13.2: Enrolment distribution in upper secondary education, ca. 2000**

| | Argentina (2001) | Brazil (2000) | Chile (2002) | Mexico (2003) |
|---|---|---|---|---|
| Enrolment rates [a] | 80.3% | 37% | 87% | 53.5% |
| General academic [b] | 48.9 | | 60.4 | 60.1 |
| Commercial | 22.2 | | | |
| Technical/vocational | 28.9 | | 39.6 | 10.8 |
| Bivalent | | | | 29.1 |
| Total number of students (in thousands) | 1,618 | 9,169 | 896 | 3,295 |

*Table notes:*

a. Sources for enrolment: Argentina, 2001, age group 15-17: Dirección Nacional de Información y Evaluación de la Calidad Educativa. Ministerio de Educación, Ciencia y Tecnología, *Tendencias recientes en la escolarización y la terminalidad del nivel medio de enseñanza.* 2002. Brazil: Data provided by the Pesquisa Nacional por Amostragem de Domicilios, Instituto Brasileiro de Geografia e de Estadistica, 2001. Age group: 15-17; about 10 percent of the age group is still enrolled in primary education or in adult or vocational courses. Chile: 2002; age group 14-17. Ministerio de Educación, *Indicadores de la educación en Chile, 2002*. México: 2003. Secretaría de Educación Pública. *Sistema educativo de los Estados Unidos Mexicanos. Principales cifras del ciclo escolar 2003-2004*.

b. Sources for enrolment distribution. Argentina: Gallart et al. (2003). At that date, the new *polimodal* education covered only 37.4 percent of enrolment in secondary education in the country. The distribution corresponds only to that percentage. Chile: Cariola et al. (2003); México: Secretaría de Educación Pública, *Sistema Educativo de los Estados Unidos Mexicanos. Principales cifras del ciclo escolar 2003-2004*.

Inequality, the more prevalent trait of all four countries, is expressed in many ways within the education system. A significant number of young people are still not enrolled in school, particularly in Mexico and especially Brazil. Other sources (SITEAL 2003) reveal extremely high socio-economic and cultural differences among students. Due to the increasing number of school opportunities, for example in Brazil where most secondary courses take place in night shifts, a growing number of young students are now able to work and study (Barolli, Da Silva Dias and Almeida de Souza 2003). However, recent research shows a new kind of social stratification taking place as differences in achievement are becoming evident between full-time students and students who are working and studying at the same time.

Young people not in school may be working from age 12, or even before. Entering the informal labor market sector at that age will in all likelihood imply precarious working conditions and little opportunity for training in the future, perpetuating another structural expression of inequality (Tokman 2004; Gallart 2004; Ramírez Guerrero 2004; de Ibarrola 2004). Furthermore, researchers have identified a significant number of young people (around 5 million in the region) who are neither in school nor working; a new type of social exclusion where young people—particularly boys—are literally 'not doing anything' (Jacinto and Gallart 1998; Jacinto 2002).

## Changes in the curriculum

### New objectives for upper secondary education

As officially stated, all upper secondary education is aimed at reaching the two formerly separate objectives of: (a) education for further academic study, and (b) education for immediate entry into the labor market. New objectives are also made explicit—mainly education for citizenship and education for lifelong learning. Objectives are declared in a relational fashion: 'Prepare for the exercise of rights [...] in a democratic modern society […] committed to the adoption of ethical social behavior' or 'satisfying vocational interests, bringing harmony between personal decisions and the requirements of the national culture and the economic and social development of the country'.

### The sources of change

According to different authors (Braslavsky 2001a), changes in the socio-economic, political and cultural context are demanding a radical change in secondary education in Latin America. Cox identifies five sources of change with regard to existing secondary education institutions that seemed somehow 'out of line' with their external milieu:

- Mass enrolment and changes in the type of student now entering secondary education.
- The knowledge society and the necessary redefinition of the curriculum.

- The youth scene and young people's pressure for a new and significant educational experiences.
- The world of work and its requirements.
- The condition of anomy in turn-of-the-century modernity. (Cox 2001b)

The official documents in each country are not so thoroughly conceptual about these 'axes of change', and all four countries can only identify two major sources:

1. The recognition and definition of new social demands for education and the need of secondary education to fulfill them:
    a. "The new challenges: deep cultural change, social and economic crisis in the country, increasing social vulnerability and poverty" (Ministry of Education and Culture, Argentina).
    b. Structural changes stemming from the so-called 'knowledge revolution'; the 'information technology revolution' that has brought radical changes in knowledge-related fields; changes in the mode of labor organization and social relations (Federal Ministry of Education, Brazil).
    c. Changes in society, knowledge and students as derived from specific research requested by the ministry at the beginning of the 1990s (Chile).
    d. New demands stemming from the knowledge society and sustainable development (Mexico).

2. The diagnosis of secondary education: lack of opportunities for the whole age group, especially now that more young people have the legitimate credentials to enter education at the upper secondary level due to the increased provision of basic education. High levels of dropout in the cycle, low quality, low performance, lack of relevance in relation to labor market needs, inadequate facilities. In addition, new thresholds on school certificates, international standards on school achievement and recent international evidence on a new curriculum for secondary education are recognized.

**Curricular structure and the definition of the school subjects**

The curricular structure selected for the new upper secondary education demonstrates the differences among the four countries within this general universal delimitation of three to four year-long grades of education for students aged 16 to 18/19, who have completed a new and longer compulsory education (see Table 13.3). There are differences in the way flexibility is implemented in each national institution, in the place and range of a general common education for all students, and in the way education is differentiated according to either academic or vocational orientation. There

**Table 13.3: Basic curricular structure**

| | Argentina: Grades 10, 11, 12 | Brazil: Grades 9, 10, 11 | Chile: Grades 9, 10, 11, 12 | Mexico: Grades 10, 11, 12 | | |
|---|---|---|---|---|---|---|
| | | | | General high school degree | Bivalent high school degree | Vocational education |
| Common education | *Polimodal*: 18-20 curricular spaces common for all | Common national base | Grades 9-10: Common Education: General curriculum | Common education for all students: grades 10 and 11 | Common education for all students: grades 10 and 11 | Common subjects for all students: 35% of curricular spaces |
| Diversified education | Five different modalities, up to 7 curricular spaces | | Grades 11,12 Two tracks: Scientific/humanistic Technical/vocational (10 hours/week) | Seven optional academic areas at grade 12 (12 hours/ week) | Three optional academic areas at grade 12 (12 hours/ week) | |
| Free disposition for schools | Free disposition for schools, between 3-5 curricular spaces | Diversified portion of the curriculum aimed at meeting regional and local needs | Free disposition for schools (9 hours/week) | Extra curricular activities, 2-4 hours/week all semesters. Specific academic areas to be chosen by school | Specific academic areas to be chosen by school | Specific professional options to be chosen by each school |
| Education for work | Professional itineraries: 1200-1800 Additional hours | Parallel system of technical education | Grades 11-12 Technical/vocational Track | 7 hours/week at grade 12 | 17 hours/week at grades 11, 12 | 65% of curricular space |

are also differences in the place of optional education according to local demands or school opportunities, or in the place accorded to further extra-curricular activities.

Indeed, the changes are more consistent with the history of the educational institutions than with the demands of the new sources of change.

The definition of subjects and time allotted show that there are not many options within the universal curricular structure of the school systems and are a clear demonstration of the limits of translating ambitious objectives into existing curricular possibilities. According to Benavot's classification (Benavot and Amadio 2004), all four countries place importance on language, mathematics, sciences, social sciences and computers, thus giving a very strong priority to cognitive development, as codified and recognized by scientific disciplines. On the other hand, civics, environmental education, religion and moral education, aesthetic education and sports are not granted the same importance in all countries (see Table 13.4).

**Language**

As regards language, it is important to note the approach to a functional use of the national language, the underlying principle being to communicate and understand all types of documentation. The role of literature is substantial to achieving this objective. Previous emphasis had been on learning the structure of the language and the grammatical rules, part of the 'unbearable irrelevance of the secondary school curriculum' (World Bank 2005a).

Computers are more identified with a 'language' approach than with a technological approach. In Brazil and Argentina, there is a clear reference to sports/physical education as corporal or body language. Furthermore, artistic education is classified as a language or code, which has the advantage of giving these subjects a higher 'status' within the curricula.

In all countries, *the second language* is English, although in all of them the reference to a 'foreign language' may also optionally be French. There are no references at all to local indigenous languages.

**Mathematics and sciences**

Mathematics, chemistry, physics and biology all occupy important positions in the curricular structure. However, it is interesting to note that in Argentina and Mexico mathematics are not present throughout the entire cycle, as in Chile and Brazil. Hard science definitions seem to give the same status to the three classic subjects: chemistry, physics and biology. Again, in Argentina and Mexico each subject is taught in one school year, while in Brazil and Chile all three subjects are taught throughout the whole cycle. In the later grades, there are references to specialized knowledge within the general subject matters, such as trigonometry, biochemistry or biotechnology. Only in Mexico are specific curricular spaces available for ecology and environmental education.

**Social sciences**

It is not possible to define the kind of historical competencies or citizenship education proposed by the new curricular structure—that is to say history and geography (see chapter by Braslavsky et al.; Cox 2002)[5]—without further analysis of content, approaches, teaching strategies and interactions with other subjects. In each country, these subjects acquire different emphases and denominations. Argentina seems to award the least amount of curricular space for both history and geography. Brazil and Chile have annual courses at every grade in both subjects, and Chile also includes a curricular space for religion. In Mexico, the vocational stream includes only one semester of curricular space for both history and geography combined, one for human rights and one for philosophy, while the bivalent general high school diploma proposes a bizarre new subject entitled 'Science, technology, society and values', to be taught at every grade. None of the countries made a curricular space available for civics at this upper secondary education level.

**Other subjects**

In each subject there is a definition of the corresponding skills and competencies that have to be acquired. Only in Mexico are there unassigned curricular spaces for additional non-school activities, such as sports and arts.

These slight differences in curriculum design could become meaningful if analyzed from the perspective of different results in international examinations. However, the existing tests, such as PISA or TIMSS, evaluate younger students and are not aimed at assessing upper secondary curricula. In each country, national examinations might also give an idea of the effect of these changes on students' academic performance.

**Vocational training**

The curricular treatment for vocational training is the one that has undergone the most changes. This education is now labeled 'vocational education' or 'education for work', in the interest of eliminating previous limitations attributable to the concept of 'training'. The underlying principle is to develop basic competencies and a more creative and entrepreneurial attitude towards work. Education for work will be integrated as a common objective in all upper secondary institutions and not only in technical schools. Thus, it will have a better chance of being integrated with a more academic and general education that will benefit all students (see Table 13.5).

There are some common traits among these differences. Curricula are organized in 'fields' or 'sectors', as opposed to training in a specific field of labor or of qualification. Flexible relations between school training and other work experiences are foreseen. Legal possibilities for certifying the competencies at any time and new links between schools and the labor market are established.

**Table 13.4: Specific expression of subject selection, according to Benavot's coding [a]**

| Subjects | Argentina [b] | Brazil [c] | Chile [d] | Mexico [e] |
|---|---|---|---|---|
| All language | | Languages, codes and related technologies; Art; Information technology; Physical education | | |
| • National language | Language and literature Communication | Portuguese | Spanish language and communication | Reading and writing workshop; Literature |
| • Foreign language | Foreign language | Modern foreign language | Foreign Language: English or French | Additional language |
| • Local Language | | | | |
| Mathematics | Mathematics | Mathematics | Sector of Mathematics: Mathematics | Mathematics |
| Sciences | Biology; Physics | Biology; Physics; Chemistry | Natural Sciences: Biology; Chemistry; Physics | Chemistry; Physics: Biology |
| Computers and technology | Information and communication technology | (as languages, codes and related technology) | Technological education, Scientific and humanistic; Technological educational; Technical professional; Technological projects | Informatics |
| Social science education | | Human sciences and related technology | History and social sciences | |
| • History | History | History | | History of Mexico; Modern contemporary history |
| • Geography | Geography | Geography | | Geography |
| • Social studies | Psychology | Sociology, anthropology, and politics | Philosophy and psychology | Introduction to social sciences; Mexican socioeconomic structure; Research methodology; Philosophy |
| • Civics | | | | |
| • Environmental ed | | | | Ecology and environment |

**Table 13.4 continued. (Specific expression of subject selection, according to Benavot's coding)**

| *Subjects* | *Argentina* | *Brazil* | *Chile* | *Mexico* |
|---|---|---|---|---|
| Religion and moral ed | | | | |
| • Religion | | | Religion | |
| • Moral | | | | Ethics and Values |
| Aesthetic education | | | Sector of artistic education: Visual arts; Musical arts | |
| Sports/physical education | Physical education | | Physical education | |
| Skills and competencies | | | | |
| • Hygiene/health | | | | |
| • Vocational | | | | Training to work |
| • Agriculture | | | | |
| Elective/options | Variations according to each modality, each professional trajectory and each institution | Diversified portion of the curriculum aimed at meeting regional and local needs | Differentiated education, starts at the third grade, two major modalities: humanistic/ scientific and technical/ professional. Free curricular disposition for each school | Variations according to specific preparatory education; Additional non-school activities |

*Table notes:*

a. For more detailed information on levels of schooling and hours taught per subject, see additional bibliography by the author.
b. Common curricular spaces to all modalities, I, II, III grades (hours per week), in Gallart, Oyarzún, Peirano and Sevilla (2003).
c. Many subjects in the Brazil curriculum begin with "Knowledge of."
d. General formation establishes the same formative and thematic spaces for all students, basic competencies for all (Cariola, Belleï and Prieto 2003).
e. General High school degree. The curriculum is organized by semesters, but usually each subject lasts two continuous semesters. 30-32 hours per week.

## Table 13.5: Structure and organization of professional education

**ARGENTINA**
Complementary to *polimodal* education, there are eleven technical/vocational itineraries (1,200 to 1,400 additional hours) that may start at the first grade of the *polimodal*.

- Those who follow the technical/vocational itinerary for the three grades of the *polimodal* achieve a certificate as assistant technician, as well as the *bachillerato* degree.
- Some itineraries require another year of study (the 13th grade) conducive to a certificate of mid-level technician.

**BRAZIL**
There are three levels of vocational education in the country:

- Basic (non-formal education), not subject to curricular regulations;
- Technical*, situated at the same level as secondary education;
- and Technological, subject to higher-education regulations.

* The technical level is destined to offer vocational education to students enrolled in or graduating from secondary education: twenty vocational areas—800 to 1,200 hours minimal study. This education, leading to the certificate of mid-level technician, may be offered in a parallel or a sequential program within secondary schools or elsewhere, is modular in curricular organization and may be evaluated and certified in different ways.

**CHILE**
After completing the first cycle (grades 9 and 10) of general education for all, upper secondary students have to choose either humanistic/scientific education (leading straight to higher education) or technical/vocational education (more oriented towards immediate entry to the labor market).

- Technical/vocational education offers forty-four different specializations.
- Both trajectories allow continuing higher education.

**MEXICO**
All three upper secondary education institutions in the country have to offer specific education for work.

- General *bachilleratos* provide a curriculum of seven hours/week for the last three semesters of a six semester cycle.
- Bivalent *bachillerato* provides seventeen hours/week of curricular time for the last four semesters of the six semester cycle, leading to a certificate of mid-level technician.
- Vocational education dedicates 65 percent of curricular space to vocational training, leading to a certificate of mid-level technician: some subjects are common to different professions, some are specific to a certain profession and some are destined to answer specific regional occupational demands. The institution grants the bivalent degree of mid-level technician—*bachiller*.

**The extent of structural and curricular change**

In all four selected countries, upper secondary education is identified now as the last moment of a general and integral education for young Latin Americans. As stated in the message of the 2005 World Bank report, secondary education in the four countries 'has emerged with a mission of its own, reflecting the peculiarities of being at the same time terminal and preparatory, compulsory and post-compulsory, uniform and diverse'. This tendency may even alter the general structure of the school systems into a system with only two structural divisions: a common basic education from pre-school to grade 12, and a highly differentiated higher education as of grade 13. This new structure has already been made explicit and legal in Brazil.

All countries manifest radical new approaches to each one of the selected subjects due to new contexts of work and the knowledge society (World Bank 2005a). Although these changes share universal limits of school curricular organization—content based in academic disciplines and time established as an hourly unit—each country has put forward the new structure and curricular proposals according to the previous history of its own upper secondary education. It follows that each national proposal is different.

The new educational policies in each of the four countries also address the worldwide twin challenges of secondary education: 'expanding equitable access and improving quality' (World Bank 2005a).

1. *Issues on universal access to upper secondary education*. In all four countries, there is recognition of the growing importance of attending school for the age-group 15-17 (Chile, to 21), as opposed to the post-Jomtien years when primary education was almost the sole priority. All countries have declared an explicit stance in favor of achieving universal access to upper secondary education. In Chile, a constitutional reform makes that level compulsory, as well as the obligation of making it available for all young people up to 21 years of age.

   In all countries, there are strategies for promoting secondary education: compensatory programs, scholarships, night shifts and flexibility in access, open education by television or the Internet. These different strategies recognize the cultural, economic and social heterogeneity of this age group (specifically the unequal educational climate at home) and the fact that an important percentage of young people work and study at the same time.

2. *Issues on quality and relevance*. The curricular reform, as previously described, is the main policy for increasing the quality and relevance of upper secondary education. Flexible answers to local, regional and individual demands are supposed to be better attained by a multi-structured curriculum within each school.

Individual schools now have more autonomy to take a wider range of decisions that can take into account personal and regional needs in order to augment the quality and

relevance of education. They may choose the basic modality and the vocational itinerary, a percentage of the curriculum, and the individual tailoring of general and technical education in the same establishments. New learning spaces outside the school buildings are favored, as well as new relationships between the schools and enterprises or different workspaces. National and regional governments have new normative, regulation and co-ordination roles; schools take charge of the daily operation, while the participation of non-school local actors is highly recommended as a result of a strong decentralizing policy implemented during the 1990s.

Additionally, there are external measures envisioned to enforce better quality: ISO-type certification of school processes; assessment in the perspective of international standards; new types of knowledge and competencies; certifying and evaluating performance according to national and international standards.

## Section II. New proposals and the actual possibilities of change

After describing the new proposals for upper secondary curricula in four Latin American countries, and confirming the way they are reflecting worldwide changes, there remains the question as to 'what efficiency-enhancing measures should be considered for secondary education reforms to succeed?' The World Bank proposes three: (a) qualified and motivated secondary schoolteachers; (b) multiple sources of funding; (c) reform of the traditional modes or state intervention and public management strategies.

I would like to consider this question in a non-prescriptive way.

### External validity of the proposals

First, it is important to consider the *external validity of the proposals*: Were the 'demands arising out of the successful expansion or primary education and the socio-economic challenges presented by globalization and the knowledge-based economy' (World Bank 2005a: xii) properly identified or just imported from other countries? In other words, were the changes proposed in fact the changes needed?

There seems to be some distance between the *five core changes* identified by Cox (2001b), the notion of *radical changes* proposed by Braslavsky (2001a), and the actual legislated changes. The documents analyzed for this chapter do not make any radical proposals for citizenship education and democratic behavior. Neither do they mention the cultural reality of youngsters, the condition of disorientation at the turn of the new century, cultural diversity and plurality, although some specific subjects touch on those issues.

On the other hand, new ways are proposed to face changes in the labor market structure and in the knowledge and informatics revolution, and also to encourage higher enrolment and open opportunities for all young people. However, even in this respect, the proposals do not take into account the specific conditions in each country. For instance, changes in the labor market are defined in terms of the technological and

computer revolution and the re-engineering of global enterprises. They do not consider the structural co-existence of formal and informal labor markets in Latin American countries, and the fact that the formal work positions sought by students with at least a secondary level of education are far more limited than the number of school graduates. Inequality within the countries is a major factor still opposing the overall validity of a national educational proposal.

## The actual possibility of change?

The second point is the matter of how all these measures actually change education. Even assuming that the identified challenges are valid and that the proposals put forward are the best way to tackle them, there is still a long way to go before actually achieving educational change.

Goodson's chapter (p. 212) states: "When change theorists adopt only the foreground of contemporary implementation they ignore the continuities in the background." He examines internal educational change through a four-stage evolutionary pattern: *invention*—that may be seen as change formulation; *promotion*—as change implementation; *legislation*—as policy establishment; and *mythologization*—or established/permanent change. I would like to refer to the stages proposed by Goodson, while also taking into consideration a theoretical approach achieved through previous research on Mexican upper secondary institutions.[8]

## Movement for change

There certainly has been a movement for change. The proposals, already legally accepted, were initiated by an interesting mixture of international advisors and national experts, a large number of federal government officers, together with important and powerful new actors in educational policy in all four countries: educational researchers with high national and international prestige.

It is a basic principle of change that implementation has a better opportunity of succeeding if major actors take part in the planning stage. Opportunities have been created for the participation of teachers—the most important actors for implementing change—as well as consultations with employers and professional associations, all of whom play an important role at this particular level.

However, as we are dealing with national policy, questions may arise as to whether all interested actors are in fact effectively represented and whether individual opinions are taken into account in the decision-making process. It is equally important to analyze the interests of different stakeholders, and the kind of power that professional groups or teachers unions may exercise in the consultation. All proposals may in fact be better understood as the result of important open negotiations and subtle transactions.[7] As a result, no policy will come from a proposal that is purely academic or be necessarily consistent or congruent as resistances arise at all stages of the decision-making process.

Latin American countries have a deep tradition regarding formal legislation. In all countries, the proposals are always explicit in laws—although perhaps in different legal hierarchies—constitutional changes, national laws, presidential decrees or agreements taken by the minister of education—that give them a compulsory status. A traditional pattern in these countries has been to decide on the proposal legally and later to implement it through a teacher-training program. This is when the majority of teachers first learn about the proposals for change. As a result of being informed late in the process, teachers have usually opposed the new proposals.

Although an in-depth analysis of actual budgetary allocations to the new proposals is beyond the scope of this chapter, it goes without saying that this is one of the most important steps (and possible hindrances) to bringing about actual change at the secondary level in all developing countries. In addition, the complexity demanded for implementing the upper secondary school curricula in each school poses the risk that federal governments will find it cheaper to fund and administer these new proposals only when financial responsibilities fall on local governments, individual schools and local private actors.

Two important concepts to be worked out in the formulation of change are: the 'national preparation of a new socio-educational project' and the 'institutional construction of curricula'.

The first implies the need to identify *the way a national problem is defined in educational terms*, to identify the groups participating in the definition of the new proposal, and to foresee any interference by certain ideological groups and their political strength in educational matters. It also requires an analysis of key aspects of new educational institutions: where and why schools are actually built, and how well equipped are they. It is most important to register those who are hired as teachers,[6] as well as the socio-economic and academic background of the student population and also if the goals of the new proposal are actually being achieved by graduates.

The second concept, the *institutional construction of curricula* (de Ibarrola 1987; de Ibarrola and Bazán 1992) has proved very useful for understanding and evaluating what Goodson's defines as the fourth stage of change, and also for identifying the 'continuities' and the contradictions that may be found in the 'background' of upper secondary curriculum implementation.

According to this concept, the difference between curricula—a very ambitious concept—and study plans and syllabuses must be recognized. The latter refer to the formal proposal of content selection, the way content should be organized and interrelated and the time allotted to each fraction of content.

Official changes in the courses of study do not bring about immediate educational changes, but still they are not useless discourses. On the contrary, they are major institutional delimitations (structures) of the possibilities of further legitimate decisions on the different basic elements of the educational activity: the selection of teachers; the construction of daily lesson plans; the use of time and space; the selection of teaching materials. They are the legitimate reference to performance evaluation and legal

certification.[9] In fact, a study plan *may be considered hypothetical, although an enforceable hypothesis*.

## Institutional factors

Many decisions have to be taken and many processes have to be carried out in order to fill the proposal with daily content. The need to create a specific amount of academic work is part of the history of the institution. This will involve coordinating teachers and each teacher's daily practice, and establishing the teaching routines and interactions, fully supported by the rest of the school organization with accepted norms, authority and values. The institutional history is built according to different criteria—educational, pedagogical and even ideological principles—but also taking into consideration teachers' interests, the union's political power, budgetary constraints or available resources.

### Teachers

The first and most important legitimate decision naturally concerns the teachers who will be responsible for the new subjects or the new approaches. Developing academic profiles, training and recruiting teachers, but also negotiating working conditions, are major steps in the implementation of the curriculum. However, in the proposals put forward by the federal governments of the selected countries, the professional expertise of the educator groups (see chapter by Kamens and Benavot) is not the main element of the change process.

The number of qualified teachers has always been less than the actual demand in all four countries (de Ibarrola 1996; Núñez Prieto 2003). Thus, many serving teachers have not had specific training, either to be teachers or for the educational level or the age group with which they are in contact. Teachers in all four Latin American countries are hired on an hourly basis, often referred to as the 'blackboard hour'. This means that they are paid just for the amount of time they spend in front of the class with the students and hardly ever enjoy the conditions for a good collegiate input.[10] This is perhaps the main explanation of the weakness of their professional power and also of their intrinsic academic and teaching authority. However, the strong union power of Latin American teachers may defend the personal and work interests of teachers by opposing the legitimate changes required. Proposals have to cope with what the teachers do control: the subject matter they are prepared to teach and not ready to change, not to mention the working schedules they have created over a long period of time.[11]

### Teaching methods

Beyond the formal delimitation of courses of study, there is the actual construction of everyday teaching knowledge and strategies: the 'didactic transposition'[12] of new contents and knowledge. Even the most innovative documents framing new curricula

do not contain teaching contents in ready-made packages all set for delivery and consumption within the daily and hourly organization of subject matter in schools.

Teachers need then to find ways to incorporate 'competencies' of academic and pedagogical content into day-to-day teaching and learning activities and also to master for themselves the new interdisciplinary content. (What is, for instance, the day-to-day content of a new subject labeled 'science, technology, society and values I, II, III'?) Teachers have to find appropriate linkages between different and even contradictory rationales: the logic of the discipline, the principles of teaching or the learning theories, in order to meet the individual and collective demands and backgrounds of heterogeneous students, using the available resources and new technologies and in the allotted time—and so forth.

**Time**

The use of time, the scarcest resource of education, is perhaps the most challenging of the overall educational situations. The duration of intended teaching time is assigned theoretically. It is based perhaps on venerable pedagogical criteria (how long can you sustain pupils' attention) and, of course, the importance attributed to the content. However, the actual distribution of time among subjects and teachers on a weekly, semester or yearly basis has to take into account all manner of personal interests and administrative constraints. One of the most important restrictions for educational change is the overall educational 'hour' (or 50-minute) unit of teaching time. In all four countries, this unit of teaching time has determined the teachers' engagement and labor contract, and has been extremely useful for the most exhaustive utilization of teaching time in order to increase coverage. Teachers may be hired to teach up to forty-eight 'blackboard' hours per week, according to labor laws.

Time also has an influence in another most important dimension: the actual length of time it takes to implement an educational reform, not to mention changes in policy decisions due to changes in government regimes. Gallart, for instance, discovered that after ten years only 37 percent of secondary schools in Argentina had actually implemented the *polimodal* proposal that took the central Ministry of Culture and Education some three to five years to prepare.

**Space**

The space assigned to the teaching of specific contents also imposes constraints and pedagogical demands. One of the most common complaints in upper secondary schools is the lack of laboratories, workshops and proper teaching materials. It is a gross mistake to suppose that each and every school will have the minimum facilities (laboratories, workshops, computers, internet facilities) necessary to reach all of the objectives of the new proposals, but also to suppose that teachers require the same qualifications for the classroom and for the workshop.

Of course, each of these factors has specific traits and displays enormous variations, but it is mainly the interaction among them that brings about different effects. The different organization of these structural elements of the curriculum may

enrich or, on the contrary, may impoverish learning situations. Different examples found in direct research on Mexico's upper secondary schools set up during the 1970s illustrate this concept. It was frequently possible to discover, for example, equipment that had never been used because teachers had never learned how to use it. Or to find that an existing regulation, such as allowing students to take examinations as many times as they wished until they got a pass mark, was a barrier to implementation of the new proposal, i.e. the evaluation of a foreseen creative approach to knowledge.

As mentioned earlier in the chapter, the third big sphere of decision-making for an educational reform in upper secondary education—decisions regarding the institutional organization of secondary education—has not been dealt with in all four countries beyond recognizing teacher-training programs *ex post*. The proposals preserve the different existing upper secondary institutions and the institutional conditions they have acquired over a long history. There are explicit references to the fact that individual schools will have a wider range of free curricular definitions and the autonomy to define specific aspects of the daily operation of education, as long as they respect the main objectives and the minimum contents. The need for a stronger faculty in each establishment does not include changing the working conditions of the hired teachers.

## Epilogue

Actual change and the results obtained will not be visible for some time. In the meantime, it is important to recognize that the proposals do not deeply implicate all of the sources of change identified by experts on the matter, although they do try to respond to changes in labor organization, the knowledge revolution and the broadening demands of young people. The proposed changes in structure and the curriculum do not efficiently cover the ambition of the objectives proposed. Finally, the proposals disregard the institutional sphere, delegating the actual implementation of the new curricula to individual schools without any changes in institutional support.

The national co-ordination effort guaranteeing equivalent quality to all schools and, at the same time, reinforcing the academic capacity of the teachers (and improving their working conditions) so that they can actually implement the proposed changes within each school is perhaps the most important requirement.

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**Notes**

1. Cox proposes these two spheres where decisions may be taken on educational change.
2. The literal translation of this term in Spanish is 'middle education' [educación media].
3. Basic information on the changes in structure was obtained from the official web page of each country's Ministry of Education: Argentina: www.me.gov.ar; Brazil: portal.mec.gov.br; Chile: www.mineduc.cl; México: www.sep.gob.mx. The search was made under different keywords: educación polimodal, ensino medio, escolaridad obligatoria, liceo para todos, reforma curricular del bachillerato, and so forth. Specific bibliography referred at the end of the volume was also consulted.

4. Proposals for the curricular and institutional reforms of secondary education have been debated since that time and no consensus has been reached over all these years.
5. It surprises me that these authors do not consider literature as a curricular space for education on historical competencies and citizenship.
6. In developing these concepts, I was indebted to Burton Clark's internal approach to academic organizations (Clark 1983).
7. The debates around 'sensitive subjects', such as history or natural sciences, are always a matter of national interest.
8. The phrasing of this sentence refers to identifying the kind of persons who are enrolled as teachers: university students? Local technicians?
9. Although it may also happen the other way around: external evaluation measures may force a curricular change, as Moreno proposes in this volume (Chapter 11).
10. The number of students that upper secondary teachers may teach per week in different courses and even in different schools may be close to 300 in Mexican institutions.
11. In my experience of curriculum reform, these have been very important obstacles to change.
12. This concept, created by Yves Chevallard (1991), turned out to be very useful in mathematics education.