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Education and Development in Mexico: Middle and Higher Education Policies in the 1990s

Lorenza Villa Lever and Roberto Rodríguez Gómez

INTRODUCTION

The last educational reform in Mexico that involved an overall review of the system was carried out during the administration of Carlos Salinas de Gortari (1988–1994), when Ernesto Zedillo was secretary of public education. The reform began with the presentation of the 1989–1994 Program for Educational Modernization (PME). One of its main instruments was the modification of Article 3 of the Mexican Constitution in March 1993, establishing the principles for national education. A new General Law on Education governing the operation of the educational system as a whole was issued in July 1993.

The PME established a series of policies for the national educational system. Among other changes, it gave priority attention to elementary education, sought to reduce educational lags, federalized basic education, increased compulsory education to ten years, and attempted to improve the quality of education as a whole. For the reform of post-basic education, the PME took Mexico's demographic and occupational changes as its point of departure. In demographic terms, a significant increase in the demand for middle and higher education could be foreseen as a result of the population growth of the 1970s and because of increased efficiency at the basic education level. At the same time, the number of young people in a position to demand jobs overwhelmed the capacity of the urban occupational structure to accommodate all of them. On the basis of this diagnosis, what the PME emphasized for middle education was the link between the educational and production systems.

For higher education, the emphasis was on the relationship between university schooling and national scientific and technological development. In tune with President Salinas's economic policy focus, the PME's more general objective was to include the national educational system in the changes required for Mexico's desired entry into the developed world.

When he became president and announced his educational program, President Zedillo (1994–2000) expressed his intention of continuing along the general lines established by the PME. He did, however, add other goals. For example, in the case of middle education, his government sought to improve the forms of institutional coordination and to make the curriculum more flexible, and in the case of higher education, to broaden educational coverage and deepen the process of institutional diversification already under way. Thus, over the course of the Salinas and Zedillo administrations, educational policies were designed with the aim of improving the quality of middle and higher education and paying attention to the links between learning at these educational levels and transformations under way in the employment market.

During both administrations, the economic development model that was promoted fostered industrial restructuring, favored openness to foreign investment in various forms, and gave support to the export production sector. The strategies deployed involved deregulation and privatization of sectors and firms that remained in state hands, including parastatal manufacturing industries, banking, transportation, and telecommunications. Moreover, the Salinas and Zedillo governments fostered private investment in health services, education, and housing. Within the framework of a development model inspired by neoliberal economic theses, post-basic education was assigned the function of providing students with the knowledge and the skills demanded by integrated and globalized economies.

In this essay we will analyze government policies aimed at middle and higher education in the 1988–2000 period and, to the extent possible, the way in which those actions have shaped Mexico's development. The basic hypothesis is that, despite the government's stated intentions and efforts, strengthening secondary and higher education in Mexico was not a real public policy priority during the last decade of the twentieth century. Indeed, to a very real extent, the Salinas and Zedillo administrations did not consider education to be an important element for Mexico's development.

This hypothesis is backed by two arguments:

- First, once it was declared that universal basic education had been attained, the state's attention turned to the middle and higher levels

of the national educational system. But this was done in a reactive manner, more in response to growing social pressures than to changes in the world of work or desired development goals.

- Second, since the 1982 economic crisis and particularly since the 1994–1995 financial crisis, the educational sector has not fared well in its competition for resources with other government priorities. This has resulted in a decline in the amount of public subsidies to middle and higher education, hampering the possibilities for reform and development beyond a few changes in the normative and organizational area.

As a consequence, Mexico's secondary and higher educational systems are still inadequate. To demonstrate this, we will analyze some of the factors that affect the quality, equity, efficacy, and relevance of the educational services offered. An analysis of these elements will bring us closer to an understanding of the relationship between education and social development.

This chapter is comprised of four sections. The first considers the characteristics of "knowledge society" and the educational changes that developing countries must undertake if they are ever to close the gap with the industrialized world. The next section assesses secondary education in Mexico, and the third examines the higher educational system. The final part offers a series of reflections on the tendencies that we are now witnessing, outlining the changes that are required to achieve better articulation between middle and higher education policy and Mexico's options for growth and development in the near future.

EDUCATION AND KNOWLEDGE AS THE AXIS OF DEVELOPMENT

The category "knowledge society" is a central notion in the discussion of twenty-first-century education policies, as well as in academic debates about the role of contemporary education. It should be made clear at the outset that this notion is above all a qualitative idea and not a name that serves descriptive, analytic, or explanatory purposes. However, precisely because of its utopian quality, it is guiding processes of change in many spheres of reality—or, rather, it is bringing about the convergence of diverse innovations originating in the areas of production, technology, science, and culture around the question of educational policy.

As a prospective scenario, the knowledge society can be viewed as the cultural result of the global economy. It is characterized as an environment in which science and technology inform all areas of life. In this sense, the notions of a knowledge-based economy, a knowledge society,

and a learning society describe ideal-type production and cultural systems in which knowledge becomes the driving force behind economic growth and social cohesion.

In a knowledge society, middle and higher education are very important because of the role that they play in three areas: (1) providing the skills for global competitiveness, democracy, and citizen participation in decision making; (2) fomenting the ability to work in a team, solve problems, and develop capacities to reflect, analyze, and reason in a logical manner; and (3) increasing the capacity to reduce poverty. However, even in the developed world, the processes that point in these directions have not been free of problems, tensions, or resistance. Among the sources of conflict identified so far, the following should be mentioned: the tendencies toward polarization unleashed by an inequitable distribution of educational opportunities (Colclough 1996; Gorostiaga 1999); the patterns of labor exclusion arising from technological and organizational changes, as well as the displacement of labor and productive sectors with limited capacities for adaptation (Hyman 1998); the differentiation between economies with greater or lesser opportunities to promote innovation (Johnson and Bearg Dyke 2000); the confrontation between the logic of producing knowledge in academic centers and its appropriation and use in firms (Cohen, Nelson, and Walsh 1996; Akyeampong 1998); pressures on universities in terms of curricular and research agendas (Bowie 1994; Slaughter and Leslie 1997); and the tendency toward the privatization of teaching institutions, in which they are viewed principally as suppliers of commodities for a price (Schugurensky 1995).¹

In addition to these problems, we must realize that real societies are characterized by their heterogeneity. Globalization has increased societal differences in terms of the distribution of both income and educational opportunities. Moreover, these differences occur not only between countries but also within them. This is why, now more than ever, it is necessary to recognize the capacity of education to improve individuals' income and living conditions.

Mexico, for example, is very close to reaching universal coverage in primary education at the national level, but there are some states (Chia-

¹ To this list of problems we can add the current instability of the information technology market. In addition to the financial losses registered by the major technology firms during 2000, the drop in the share value of electronic commerce firms (dot.com sites) resulted in the loss of more than 40,000 jobs in that year. This crisis of the Internet industry may have important effects on the course of the "new economy." In fact, figures on investment in equipment and software by U.S. firms already reflect it. According to data from the U.S. Department of Commerce, investment in that area declined from 20 percent to 5 percent between the first and last quarters of 2000.

pas, Guerrero, and Oaxaca) where that indicator has not yet reached 60 percent. The states in the middle range in terms of development, where at least 60 percent of the population has completed primary schooling, have poor secondary school enrollments and poor completion rates. Meanwhile, the Mexican states with higher schooling levels are at a point where barely 50 percent of the population has completed secondary education.

According to criteria established by the Economic Commission for Latin America and the Caribbean (ECLAC), the number of years of education necessary to have a 90 percent assurance that the population does not fall into poverty is 10 to 11 years for Latin American urban areas, and it is more than 10 years for waged workers between the ages of 35 and 54, (CEPAL 1997). According to Inter-American Development Bank estimates (IDB 1997), it was expected that by the mid-1990s the average level of schooling in Latin America would be 7 years. However, it only reached 5.2 years. In Mexico, average schooling (7.9 years) was above the level of Latin America as a whole, although still below that of countries with similar levels of development; Argentina and Chile, for example, have crossed the threshold of 10 years of average schooling. Furthermore, even though the last two decades in Mexico were characterized by the rapid growth of secondary and higher education, by the year 2000 secondary education only covered 46 percent of the corresponding age group, while higher education covered only 19 percent.

There are many dimensions to the relationship between education and development. In general, the quantity and quality of education available, as well as the articulations between the educational and productive systems, express the role that education plays as the axis of economic and cultural development. In practice, the relationships between educational demand and supply; between schooling, jobs, and wages; between the needs of the productive sector (expressed as a demand for competencies and skills) and the educational sector's capacity to respond; as well as the relationship between schooling and social mobility, form a complex arrangement that is not without its paradoxes and unforeseen effects.

Thus, in the case of Mexico, the average level of schooling increased by two years between 1980 and 1990, the percentage of workers with less than a primary school education dropped from almost half in 1984 to 36 percent in 1994, and the proportion of workers with secondary education rose from 26 to 39 percent (Lächler n.d.). Nevertheless, in Mexico as in much of Latin America, the 1980-1990 period was one of nearly zero growth in gross domestic product (GDP), which would support the hy-

pothesis that schooling and macroeconomic indicators are relatively independent variables.

Of course, the contributions of education to economic growth and social equity are neither simple nor linear. The increase in the average educational level of the population, particularly of the workforce, has precipitated an inflationary rise in schooling requirements in the formal sector of the economy (from 6–8 to 10–12 years of study), while at the same time it has devalued some educational degrees. It is also true that levels of schooling have increased because of a social perception that education provides the indispensable tools to improve one's quality of life and to achieve entry into labor markets whose requirements are ever more demanding and complex.

In fact, during the 1984–1994 period, the Mexican workforce with less than a primary school education, those who completed primary school, and even those who completed junior high school saw their real economic possibilities decline. At the same time, workers who completed high school or had some university education were able to increase their wages and incomes in real terms. According to Lächler (n.d.), the most feasible explanation for income inequality among workers is that provided by Hernández Laos, Garro, and Llamas (1998), who show that shifts in the demand for workers in Mexico, based on their level of schooling, are rooted in changes in the labor market and in technology. The result—an increase in demand for higher-skilled workers and a decline for those with lower levels of schooling—suggests that wage dispersion originates in a structure of production within a sector that favors better-educated workers over those who have lower educational levels (and not in changes in patterns of wage negotiation or agreements between sectors).

Thus the upward trend in educational levels benefits those who are able to enter the schooling circuit and remain there until they reach its higher levels. At the same time, the population excluded from educational benefits is also deprived of job opportunities and decent wages. Here, then, is a paradox by which education operates simultaneously as a means of achieving social equality and as a mechanism for reproducing inequalities. This paradox, well known to sociology and the economics of education (Boudon 1973; Halsey et al. 1997), has no formal solution. The only responses are circumstantial ones involving educational policies that affect the market by shaping the distribution and diversity of educational opportunities, or strategies that assure the equity, quality, and relevance of the education that is imparted.

Let us examine this last point in greater detail. The theses in vogue on economic growth (Drucker 1993; Foray and Lundvall 1996; Woolcock

1998) concur on emphasizing the micro- and macroeconomic link between an increase in the knowledge base and growth in productivity. In developed economies there is substantial evidence that the sectors that systematically use knowledge inputs (that is, the results of research and development and an educated and skilled workforce) grow more rapidly and generate higher profits (Scarpetta et al. 2000). Nevertheless, the valorization of knowledge-based goods and services takes place in a competitive environment, which means that knowledge and skills, insofar as they are economic factors, are subject to relationships of supply, demand, and competition (that is, to the rules of the market). This means that not all investment in knowledge results directly in growth, and that the rates of economic growth are variable and relative as a function of investments in knowledge. This conclusion, for which there is much empirical evidence worldwide, highlights the need to distinguish between the weight of education as a factor in economic growth and the significance of education as a component of national development.

In a general sense, it is well recognized that, by supporting public and private education, the state responds to societal demands for participation. Yet this is both an economic response and a political and cultural one (UNESCO 1999; World Bank/UNESCO 2000). In addition to being a factor that affects individual and social productivity, education is a positive instrument for modernization and social change and for countries' democratic development.

For these reasons, educational systems—particularly secondary and higher education—are faced with new requirements, demands, and opportunities, as are scientific and technological research systems as well. These new demands emphasize the key role of educational systems in the generation and mobilization of knowledge (Castells 1994), and the possibilities they have of imbuing individuals with creative abilities and the capacity to adapt to change. Among the courses often charted for the modernization and adaptation of educational systems, it is worth noting the following: general expansion of enrollment; diversification in terms of types of institution, their functions, and sources of financing (Meek, Huisman, and Goedegebuure 2000; Cook and Lasher 1996); decentralization and federalization; creation of regulatory and coordinating bodies (Gove and Stauffer 1986; Neave 1998; Gleny 1995); implementation of planning, assessment, and accountability formulas (Goedegebuure et al. 1994; Meek et al. 1996); updating the structure and operating methods of university governance and administration (Higgerson and Rehwaltdt 1993); implementation of mechanisms to ensure quality (El-Khawas 1998; Harman 1998); and increased flexibility in the curriculum and use of distance learning (Trow 1999).

In countries with comparatively solid economies, the priority given to secondary and higher education, as well as to scientific research, is reflected in the trend toward universal secondary education, a new wave of expansion in university enrollments (El-Khawas 1994), and significant growth of public and private investment in research and development activities. In the 1990s the rate of coverage of potential demand (represented by the 20- to 24-year age group) increased in these countries from 45 to 60 percent. In Latin America, covered demand only rose from 16 to 20 percent, mainly due to the sustained expansion of private educational institutions (UNESCO 2000).

There is also a worrisome gap in research and development capacity and spending between the economically powerful countries and underdeveloped countries. In terms of the number of scientists and technicians per 10,000 inhabitants, the former countries outstrip the latter by a factor of nearly 10 (3.8 compared to 0.4 in 1998). In terms of research and development spending, the difference is between 2 percent of gross domestic product for the former compared to 0.4 percent of GDP for the latter, which means that on average the developed countries spend five times as much. In Mexico total spending on science and technology is approximately 0.45 percent of GDP (Presidencia de la República 2000).

In addition to these quantitative differences, assessments of the quality of secondary and higher education systems and of science and technology systems in Latin America are generally disheartening (although there are significant exceptions, which is why the Inter-American Development Bank speaks of a "mixed performance"; IDB 1997). On one hand, there is evidence of overcrowding, lack of funds, deficiencies in the administration and coordination of systems, and a lack of relevant curricula (World Bank/UNESCO 2000). On the other hand, there are universities and academic centers that carry out high-level teaching and research, with appropriate standards of quality. The problem, of course, lies in the small proportion that these institutions constitute within the universe of Latin American higher education (García Guadilla 1996).

The development of secondary and higher education and of science and technology systems in Mexico, as in most countries in Latin America, has taken place amidst conflicting forces. In the first place, the expansion of these systems responded more to social demands than to the direct requirements of the productive apparatus or the labor market (Brunner 1994). Second, although public universities continue to be the places par excellence where links are made between scientific research and higher learning, they are usually at a disadvantage in the competition for resources with other governmental priorities. Third, until well into the 1990s, multilateral banks and other intergovernmental agencies

recommended to the governments of underdeveloped countries that they channel their educational investments toward primary education, leaving to private actors the expansion of higher and postgraduate education (World Bank 1994, 1995). This policy stance truncated public universities' possibilities for growth and development (Rodríguez Gómez 1999).

These patterns have begun to change in recent years. As a result of the worldwide debate on the strategic value of knowledge (UNESCO 1999; OECD 2000), a consensus of sorts appears to be on the horizon regarding the need to increase coverage and transform both secondary and higher education systems and science and technology systems. The principal goal is to expand their capacities to better adapt to the challenges posed by the dynamics of globalization (Yarzabal 1999).

Considering the transformations facing secondary and higher education worldwide, what have been the major challenges confronting Mexico's secondary and higher education systems? What have been the dynamics of expansion and diversification? What changes have been carried out for the educational system's qualitative improvement? And, in sum, what results have been achieved in these areas over the last decade? These questions are taken up in the following sections of this chapter.

SECONDARY EDUCATION IN MEXICO

This section considers the issue of secondary education in Mexico. The discussion focuses first on the principal modalities by which the system is organized. It then examines secondary educational policies, considering processes of change during the 1970s and 1980s and the lines of development proposed during the 1990s. Finally, we analyze the main problems faced by this educational level. The section concludes by emphasizing the idea that reforms of secondary education in Mexico have not considered knowledge as a generator of development.

General Characterization

In Mexico, middle education² is coordinated by two agencies of the Ministry of Public Education (SEP): the Undersecretariat of Higher Educa-

² "Higher middle education" is the official term, referring to a time when primary school was considered basic education (six years), secondary school was termed basic middle education (three years), and the baccalaureate or preparatory school was higher middle education (three years). Because secondary school now makes up

tion and Scientific Research (SESIC) and the Undersecretariat of Education and Technological Research (SEIT). SESIC has responsibility for the baccalaureate, including the general and the university programs,³ both of which are propaedeutic, aimed principally at satisfying the academic and disciplinary requirements of the professions. The SEIT coordinates technological education, including the technological or bivalent baccalaureate, which in addition to propaedeutic studies offers work training and technical education. This is a terminal certificate and is directly oriented toward work.⁴

Each one of these middle education modalities embraces different types of institutions. This institutional differentiation is supposed to satisfy the diverse needs, interests, and capabilities of a heterogeneous population. Table 8.1 lists both the propaedeutic and the technical institutions that provide middle education in Mexico.

Middle education includes public and private institutions. The federal government is fundamentally in charge of the public institutions. However, the autonomous or university middle schools that are part of institutions of higher education are also public institutions, as are those that are dependencies of individual Mexican states. Private institutions have private owners.

INSERT TABLE 8.1 HERE

Middle Education Policies in the 1970s and 1980s

The Mexican government's interest in middle education is longstanding. Indeed, the first institutions that fulfilled the function of linking elementary education with a university education date to the colonial period. For example, San Ildefonso College, established in the seven-

part of basic education (nine years), when we refer to middle education we will be speaking of the baccalaureate level.

³ Middle education has a duration of three years in all its modalities, although there are some university baccalaureate programs that take two years.

⁴ There is also a General Directorate for the Baccalaureate (DGB) that coordinates the general baccalaureate and falls under the SESIC. The DGB currently coordinates the following institutions: the Baccalaureate Studies Centers (CEB), the Lázaro Cárdenas Federal Preparatory School, the Baccalaureate Colleges (CB), private preparatory schools incorporated with the Secretariat of Public Education and private preparatory schools incorporated with the Ministry of Public Education by special agreement, the Open Preparatory School, the part-time baccalaureate (*bachillerato semiescolarizado*), and Distance Higher Middle Education (EMSAD).

teenth century, offered an education to youths who sought the bachelor's degree granted by the Royal University of Mexico (Real Universidad de México). The National Preparatory School (Escuela Nacional Preparatoria) was established in 1867 and later became part of the new National University of Mexico, created in 1910. In 1925, middle education, which covered the whole educational span between primary school and the *licenciaturas* in the university, was divided into two cycles: secondary school (lasting three years) and preparatory school (also lasting three years). The former was left under the supervision of the Ministry of Public Education, while the latter remained in the hands of the National University. Outside of Mexico City, the development of middle education took place principally in arts and sciences institutes at the state level, which in turn would give rise to public universities in the individual states of the federation.

Over time, the baccalaureate cycle took on two general dimensions, one of a propaedeutic type (as an education in preparation for the university cycle) and another of a technological type (linked to higher education institutions in the technical area, such as the National Polytechnic Institute and the regional technological institutes). However, the process of curricular diversification that resulted from the system's expansion lacked the planning and coordination mechanisms necessary to build satisfactory standards of quality. Thus, beginning in the 1960s there was a thorough review of the content and structure of the baccalaureate in Mexico.

In 1971 the National Association of Universities and Institutions of Higher Education (ANUIES), concerned about middle education in Mexico, established a discussion forum that engaged the participation of autonomous universities, state and private universities, the National Polytechnic Institute, and the various technological institutes. The first ANUIES meetings that took up the topic of the baccalaureate were in Villahermosa, Tabasco, and in Tepic, Nayarit, both in 1972. There the participants agreed that the baccalaureate would be propaedeutic and terminal, that it would be delivered in semester courses, that it would take three years, and that it would follow the credit system. ANUIES convened a second meeting in 1975 at which it was agreed to establish a common curricular core for middle education.

Similar meetings followed, among which the one held in Cocoyoc, Morelos, in 1983 was noteworthy. The Cocoyoc Congress had as its main concerns: (1) the characterization of the baccalaureate as a "formative and integral" cycle, not just a propaedeutic one; (2) the design of a curriculum structure that offered students the basic educational elements (a common core) and at the same time allowed for a certain diversity, in

line with different institutions' interests and objectives; and (3) the diversity of institutional policies, which prevented "horizontal permeability," or movement between institutions (Castrejón Díez 1997). Moreover, the goal of the bacalaureate was defined as the need to "generate in youth the development of an initial personal and social synthesis that will allow them access both to higher education and to an understanding of their society and their times, as well as the possibility of undertaking productive work" (Castrejón Díez 1997).

In order to accomplish all this, specialists concluded that it was necessary for middle education to orient young students toward the adoption of their own value system, critical participation in the culture of their time, the acquisition of methodological knowledge that would enable them to have access to scientific knowledge, the development of their personality and their capacity for abstract thinking and independent learning, and an interest in the applied aspects of science in the institutions oriented toward occupational training. At the 1983 meeting, the profile of the student with a bacalaureate was defined as someone able to: express himself or herself correctly and efficiently; speak various languages; use cultural, scientific, technical, and axiological tools to solve problems; understand and criticize the ecological, socioeconomic, and political context of her or his community and country in a rational manner, thus participating in its improvement; learn independently; evaluate and solve situations corresponding to her or his age and development; and undertake higher studies or productive work.

Middle Education Policies in the 1990s

In the framework of the 1989–1994 National Program for Educational Modernization, the Mexican government sought to achieve more effective coordination so as to allow inter-institutional collaboration with the aim of improving the functioning and development of middle education. The First National Meeting on Higher Middle Education was held in 1991. The National Commission for Planning and Programming of Higher Middle Education (CONPPEMS)⁵ was established at that meeting, and soon after a State Commission for Planning and Programming of Higher Middle Education (CEPPEMS) was established in each state. The objective was to address the deficiencies that existed in each state and—as a result of the government's policy of educational decentraliza-

⁵ The CONPPEMS became the National Commission for Higher Middle Education (CONAEMS) in 1994, with the objective of coordinating student demand, programs and courses of study, and assessment efforts.

tion, which was not actually implemented until 1998 for middle education—encourage the states to participate more actively in financing middle education by having different institutions (particularly the technical-professional schools) seek external funding sources (Villa Lever 1990). However, it should be noted that alongside these new coordinating bodies, the various types of institutional arrangements that have always controlled the resources for middle education continued to function: federal, state, autonomous, and private.

The national education policy framework articulated in the 1995–2000 Educational Development Program,⁶ emphasizes the need to: consolidate a system of higher middle education that makes it possible to improve indicators of quality, relevance, and equity; connect technological and scientific change with educational change; make academic structures more flexible; develop a basic profile for the student and another for the teacher, upon which to base educational and continuing education programs; bring supply and demand into balance to avoid competition between different institutions; link technological education with productive sectors, taking into account shifting trends in labor markets, and thus strengthen the relevance of education for national development; establish the competency-based education model (*modelo de educación basado en competencias*) through the application of work competency technical norms (*normas técnicas de competencia laboral*) in both formal and non-formal education; and provide greater autonomy and transparency in the management and spending of resources.

In the curriculum area, the education that is offered is made up of: (1) a common core of courses that fosters a general culture, based on several fields of knowledge (language and communication, mathematics, natural sciences, and socio-historical studies); (2) subjects that prepare youths to continue with higher education; and (3) a core of occupational education that orients the student with regard to labor processes in a specific field and encourages positive attitudes toward them. Among the elements that inform the curriculum, which has as its aim contributing to

⁶ The assessment on which this program was based stated that, in the case of higher middle education, “the plans and programs still retained their content and characteristics more than fifteen years after the complete modification of the technological baccalaureate’s common core and after only partial modifications had been made to the structure of the curriculum during the previous decade. The baccalaureate options that were available had not been able to offer sufficient and effective responses to their general and propaedeutic demands, and they did not offer students a renewed education that would make them better able to enter new professional areas. The bivalent modality (the technical-professional option), despite the diversification of the areas that make up the curricular offerings, did not always correspond in a relevant way to the needs of the world of work” (Ortega 2000: 316).

the full development of young people, are the following: the development of thinking skills; logical reasoning; values such as liberty, justice, solidarity, national identity, democratic responsibility, and love of truth; environmental education; human rights, and finally, the quality or path that leads to excellence.

In both the Salinas and Zedillo administrations, together with enrollment expansion and the development of infrastructure to serve middle education students, some actions were carried out to improve the quality and relevance of middle education.⁷ However, everything seems to indicate that these actions have had a very limited effect in terms of the system's retention capacity and the quality and relevance of the education that is offered.

Efficiency, Equity, and Relevance: Middle Education's Main Problems

The problems facing middle education have to do with the efficiency with which the system operates, the equity with which the service is distributed, and its relevance to individual and social needs. In other words, at the start of the third millennium, middle education in Mexico continues to be burdened with many of the problems it faced two or three decades ago. Among them the following should be noted:

Very Low Efficiency of Middle Education The middle education system grew constantly during the last half of the twentieth century. According to Ministry of Public Education figures (SEP 2000) figures, enrollment rose from a little more than 37,000 students in 1950 to 2.1 million students in 1990. In 1998, 2.8 million students were enrolled in middle education, and in the 2000–2001 cycle there were an estimated 3.0 million. Among the most important reasons for the increase in enrollment are the country's strong demographic growth, the expansion of enrollments at the basic education level, and an increase in recent years in the rate of absorption of secondary students by middle education (table 8.2), a figure that rose from 75.4 percent in 1990 to 89.6 percent in 1995 and 93.3 percent for the 2000–2001 school cycle. Despite this, at the start of the twenty-first century, only 46 percent of the population between 16 and 18 years old is enrolled in middle education. This situation is the result of three other problems burdening middle education: (1) a very low

⁷ The most important measures were the updating of educational plans, programs, and methods; linking schools with productive sectors (in the case of the technological modalities); decentralization of services (particularly in the baccalaureate colleges system); and some training courses for teachers and administrators.

completion rate, which in the technical-professional options is below 45 percent and in the propaedeutic baccalaureate is 57 percent, (2) high failure rates (73 percent), and (3) high dropout rates (46 percent) (SEP 1999).

INSERT TABLE 8.2 HERE

However, efficiency also has to do with spending. As indicated by table 8.3, of the three main levels of education in Mexico—basic education, middle education, and higher education—the least important in terms of financing is middle education, which receives less than 10 percent of total educational spending. Despite the efforts to decentralize middle education, the federal government still finances the education of the largest number of students in Mexico. The states barely contribute one-fifth of the total budget.

INSERT TABLE 8.3 HERE

The pattern of spending on middle education raises two issues. First, it is clear that middle education has not been a high budgetary priority; it has not, for example, achieved the importance of basic education and higher education (Villa Lever 2000). However, during the Salinas and Zedillo administrations, technical middle education services expanded significantly. The number of schools, classrooms, laboratories, and workshops doubled in ten years. Enrollment increased by almost one-third, and the size of the teaching staff rose by 24 percent (SEP/SEIT 1998).

In middle education in general, there was also a significant growth of enrollment during the Salinas and Zedillo presidencies, and during 1997–1998 alone thirty-five baccalaureate colleges were created in the states. However, the second major problem that middle education faces has to do with the capacity to retain in school young people from diverse social groups. What is required to achieve this goal is quality education, which principally implies attention to academic variables, especially the curriculum and teacher training.

According to figures from the Instituto Nacional de Estadística, Geografía e Informática (INEGI 2000), Mexican youth between 15 and 19 years old (the age group that corresponds to middle education) are the ones who are most likely to be enrolled in school (44.7 percent). However, more than half of them are no longer studying. According to the

same source, among youth from 15 to 19 years of age, 2.2 percent have no education at all, nearly two-thirds have barely a basic education, and only one-fourth are currently studying or have completed middle education. Of this last group, 14 percent are students following a technical-professional career and the rest are in the baccalaureate. Only 2.5 percent of this age group is enrolled in higher education.

Very few youths in this age group are full-time students. A substantial number of them are engaged in other activities in addition to studying, mostly working and/or helping with household chores. Even more unfortunate, however, the majority of youths between the ages of 15 and 19 do not go to school because they work or help with household chores. In other words, of the scant half that are able to continue their studies, more than a third do not have the possibility of being full-time students.

The youths who do not continue their schooling give as their main reasons a lack of motivation to study (60.6 percent of males and 54.3 percent of females) and the need to work to help provide for their families or themselves (29.2 percent of males and 18.6 percent of females). For women, family responsibilities (12.4 percent) and marriage and household chores (9.3 percent) are significant barriers; among men, these factors tend not to be major reasons for dropping out of school (4.3 percent and 0.5 percent, respectively) (Observatorio 51).

In sum, the choice that is posed in Mexican middle education is not whether the general or the technical educational option should receive a greater commitment of resources. This is a false dilemma; any quality education costs money. What is clear is the absolute need to improve the quality of middle education in all its modalities so that there is a real comparative advantage for whoever studies, thereby altering the current perspective of young people that it does not make much of a difference. To the extent that the majority of those who complete middle education must enter the labor market, it would be important to include a heightened appreciation of the culture of work in all the system's modalities, even in the general educational option, thus avoiding the false specializations that exist in school but not in the world of work (Villa Lever 2000).

Low Levels of Equity in Middle Education Inequality in society is reproduced in education through schooling paths of differing qualities aimed at various publics. The distribution of middle education enrollment across its various modalities changed during the 1990s; the relative weight of the propaedeutic or general option in enrollments gradually decreased, the bivalent or technological option grew substantially, and enrollments in the technical-professional option declined (table 8.4).

However, the strong orientation toward propaedeutic middle education in its three options (the general baccalaureate, the university baccalaureate, and the bivalent baccalaureate), along with the low social status of a technical education as a terminal degree, have devalued the latter in relation to both socioeconomic development and personal development.

INSERT TABLE 8.4

If we take those who presented the middle education entry test (*concurso de ingreso*) in the Mexico City metropolitan area in 1998 and 1999 (SEP 1999: 74, 2000: 58–59) as a sample characterizing middle education applicants, we can conclude that:

- Of the total number of applicants, 66.2 percent in 1998 and 65.8 percent in 1999 came from a general secondary school, while only 27.9 percent and 28.0 percent, respectively, came from a technical secondary school. In 1998 and 1999, 2.7 percent and 2.9 percent had studied in a *telesecundaria* (secondary school via television). Both years, 1.4 percent had graduated from a secondary school for workers, and 1.6 percent and 1.8 percent, respectively, came from an open secondary school.⁸
- Of the total number who took the test, graduates of private schools had on average 80 and 81 correct answers in 1998 and 1999, respectively, out of a total of 128, while graduates of public schools had only 67 and 66 correct answers, respectively, out of the same total.

In other words, the fact that the majority of middle education applicants came from a propaedeutic secondary school suggests that quite probably they were from families in better socioeconomic circumstances than those from technical secondary schools, to the extent that a greater proportion of their children were able to continue their studies. Similarly, the data from the entry test indicate that those students who come from a private secondary school have greater access to the codes of modernity that permit them to have greater success in their studies, compared to students from public schools.

Finally, private schools play an important role in Mexico's middle education system because of the size of their enrollments (table 8.5). One-third of all preparatory schools are in private hands, as are more

⁸ The secondary education background of the remaining applications was not specified.

than half of all technical schools in the country. One-fifth of all baccalaureate and professional-technical students attend these schools. But are the efficacy, relevance, and equity of the educational services provided by these private institutions satisfactory? In general, the so-called consolidated private schools provide services that have won them their good reputation. However, it is necessary to underscore that there are many small private institutions, born out of the demand for educational credentials, whose quality leaves much to be desired.

INSERT TABLE 8.5. TABLE 8.6 ALSO GOES AROUND HERE, BUT NOT CITED IN TEXT

A large majority of middle education students in Mexico are oriented toward the general or technological baccalaureate and very few toward the professional modality. Although the available evidence indicates that youths who graduate from the professional option are able to find employment, it is clear that this modality is still not attractive for most of them. Therefore, if there are so many youths who need work, it is fair to ask why so few of them choose the professional-technical path in middle education.

Of course, the solution is not to close down the occupational training modalities, but rather to eliminate their discriminatory connotations. For this to occur, it is crucial to move from the concept of “preparation for work” (which has an instrumental meaning and refers to training in specific technical and manual skills) to “preparation for a working life” (emphasizing versatile and adaptable training for the middle and long run). In this sense, more than simply transmitting information, education should generate competencies for analysis, reflection, innovation, solving unforeseen problems, and dealing with contingencies—privileging general subjects and giving students the opportunity to continue studying. In addition, it is indispensable to create procedures that will permit those who complete the middle cycle in the professional option to go on to higher education if they so desire and if they have the required academic ability.

Furthermore, both the general baccalaureate and the technological baccalaureate options are characterized by low levels of efficiency and relevance. Less than half of those who start studies at this level are able to complete them, and still fewer go on to university studies. Complaints persist in institutions of higher education regarding the insufficient preparation of arriving students, while work alternatives for those who

interrupt the cycle are minimal. Thus it is evident that the problems of relevance are present throughout the middle education system, whether as a place where youths are prepared for university or technological studies, or as a place that provides training in competencies for the world of work.

Low Relevance of Middle Education The centralism with which middle education programs (particularly the technical-professional options) have been designed has made it difficult to link schools with regional production sectors and this creates a problem in terms of their relevance to employment possibilities for young graduates. The lack of effective links between schools and firms, as well as the high rates of dropouts and failures, result in an education whose quality must be questioned.

In addition to the diversity of modalities and, within them, the variety of institutions with specializations aimed at various sectors, middle education in Mexico is burdened by a selection process that places clear limits after grade 10 on different school and work paths. Moreover, the difficulties that graduates face in finding employment and the stigma associated with the technical-professional options reinforce the social and regional inequalities that themselves help determine the quality of the paths open to various segments of the population. This closes the circle in terms of a loss of prestige for technical schools, while at the same time propitiating the growth of the propaedeutic baccalaureates.⁹

As an educator of future professionals, the middle education system itself defines a false choice that counterpoises study and work: the general baccalaureate and the technological baccalaureate, on one hand, or technical-professional education, on the other. The system has long since ceased to provide an adequate response to the needs of the increasingly diverse social groups involved. These problems have resulted in many youth abandoning their studies before completion, generally because they need to work. These young people will be left with a precarious education and poor wages.

In synthesis, because professional-technical education in Mexico has the stigma of being the option open to those who belong to the most downtrodden social classes, this potentially important modality is not valued by either parents or students. Instead, the struggle to pursue the baccalaureate that offers what to many will remain an illusion: entry into the university (Villa Lever 1991a, 1991b, 1986).

⁹ It should be noted that the CONALEP carried out a reform that considerably reduced the number of technical specializations offered, made it possible to obtain a general baccalaureate by completing one additional semester, and reorganized management, which apparently resulted in an increase in enrollment.

What Should Be the Orientation for Middle Education?

The tendency toward early educational differentiation in the middle levels, which in many countries begins as early as the age of 11 or 12 and is closely connected to graduates' subsequent path and their future opportunities, was questioned in the developed world during the 1970s. What was proposed instead was a comprehensive school organized into a first-year common core (basic secondary), leaving the separation into modalities or specializations for the second year (upper secondary). The main arguments in favor of these changes were that early selection reinforced inequalities, low educational coverage, and the disparity of opportunities, as well as not promoting the adequate intellectual or social development of students.

In the 1980s, technological advances and the world's new political configuration oriented the welfare state toward the roles of coordinator and regulator. Educational reforms sought to improve the quality and efficiency of mass middle education, without neglecting the relationship between education and social demand. In many (especially European) countries, centralized educational systems were decentralized with the objective of bringing decision making closer to the schools.

More recently, many countries have increasingly focused on educational integration. No matter how middle education is defined, it is widely recognized that the system has a number of objectives having to do with personal, social, and civic development, as well as preparation for a life of work. The tendency toward convergence of the general baccalaureate, the technological baccalaureate, and technical-professional education has as its main objective exploiting the possibilities and resources that are available and offering opportunities that emerge from the system itself, allowing students to follow different educational and occupational training options as well as the academic or general one.

The Mexican state has responded reactively to enrollment growth in middle education. However, it has not seriously occupied itself with the problems of efficiency, relevance, and inequity that persist in the system, nor has it adequately defined the objectives and goals of middle education or created a body responsible for coordinating the efforts of the diverse actors in charge of it.

A further important omission concerns middle-level teachers. There are no clear academic requirements for certification, promotion, or tenure; instead, what prevails are bureaucratic categories and clauses in union contracts. Each modality offers its teachers different types of continuing education courses, generally of short duration. But these meas-

ures do not offer an adequate response to the rapid evolution of knowledge and the need for teachers with a solid education, in tune with the highly heterogeneous needs of a middle education system characterized by its curricular diversity, the breadth of the technical-professional specializations that it offers, and the plurality of social groups that it serves. In order for middle-level teachers to be able to respond with teaching that achieves such quality in the diverse situations that characterize those who demand the service at this level, professionalization of teacher education is crucial. This requires resources and clear objectives, but above all it takes the political will to arrive at basic agreements among the various types of coordinating bodies involved in middle education.

The great challenge, then, is to reconceptualize middle education so that the system can respond to massive, heterogeneous demand. This necessarily means remedying a major historical shortcoming: meaningful knowledge that serves the requirements of a productive citizenry for the twenty-first century. An effective middle education must provide the basic competencies that allow young people to become a part of society as citizens and as workers, with an ability to communicate and place themselves in the context and space in which they live (socio-historically) and with reasoning, scientific, technological, ecological, critical, and creative competencies (De Ibarrola and Gallart 1994).

There are necessarily limits to the tendency to allow market forces a free hand and to decentralize educational services. All countries must bring their technological education systems closer to the evolution of educational needs, with the aim of improving the quality and efficacy of teaching. Both private firms and the state have important roles to play in this regard. Indeed, at the school level this responsibility may be shared with families and representatives of the local community.

Even though some might think that private firms are best suited to define the needs of professional education, in practice they may have a narrow, short-term view that favors technical knowledge and practical know-how, to the detriment of a general education. Therefore it is important that educational objectives be defined from a sufficiently broad perspective, one that takes into account not only the interests of firms but also the needs of workers and of society in general.

The middle education system must be flexible in both in its contents and structure if it is to succeed in offering youth educational opportunities that are diversified and capable of adapting to changing needs. Its contents must be reformulated according to the changing demands of the labor market, reducing the number of educational specializations, broadly conceived. Nonetheless, while education must be oriented toward serving labor market needs, there is neither a linear nor a mechani-

cal connection between supply and demand. Rather, the educational system must help individuals achieve the general competencies that will help them have an active work life, whatever the particular opportunities that might arise.

In today's world no initial education can prepare youth for their whole life. Life-long learning has been recognized as a necessity because, although it cannot be said that education guarantees employment, in the long run a country that has workers with a solid education will find it easier to generate new industries. It will also be able to apply accumulated knowledge to production in industries that generate wealth on the basis of information, rather than simply importing technologies for assembly-processing. Furthermore, as the general educational level increases, the youths who leave school without minimum qualifications are increasingly threatened with economic and social exclusion. It is therefore necessary to create programs oriented toward serving this population by alternating periods of study with periods of work.

HIGHER EDUCATION AND POSTGRADUATE STUDIES IN MEXICO

This section offers a general description of higher education in Mexico, including data on how it is organized and its current enrollment. It then examines the recent evolution of the system, beginning with the application of higher education policies during the Salinas and Zedillo administrations.

General Overview

The higher education system in Mexico covers all educational institutions at the technical-professional, undergraduate (licentiate or *licenciatura*), and postgraduate levels. It includes both public institutions (those supported primarily by the federal government, although state and municipal funding is increasingly important) and private institutions. The main modalities are technical, university, and normal school education, but the higher educational system also includes research centers and institutes that may or may not be part of universities.

In the 2000–2001 academic year there was a total of 2,073,500 students enrolled in higher education. Of these, 67,838 (3.3 percent) were in the non-university technical cycle; 1,878,962 (90.6 percent) in undergraduate and normal schools; and 126,700 (6.1 percent) in postgraduate programs. The public higher educational system covered 67.8 percent of total enrollment. In the non-university technical sphere, public education covered 85.8 percent of the total enrollment. In the undergraduate cycle

(universities, technical institutes, and normal schools), public education covered 69.0 percent, and in postgraduate programs the figure was 59.8 percent.

Within each of these cycles there are educational modalities that represent diversified curricular offerings:

- *The non-university technical cycle.* This cycle, which follows middle education, offers education of a technical character in areas of production and services. It takes two years to complete the courses and receive a degree as an associate professional or technical professional. Almost half of all enrollments in this cycle are concentrated in forty-four “technological universities,” recently created public institutions that currently offer twenty-two advanced technical careers.¹⁰ The first three of these were established in 1991, three more in 1994, and another thirty-seven were added between 1995 and 2000. It should be underlined that all of the technological universities are located outside of Mexico City, mostly in midsize cities. The other programs in this cycle are located in public universities and in some private institutions.
- *The undergraduate (licenciatura) cycle.* The *licenciatura* cycle covers university degrees, advanced technical education programs, and teacher education programs (normal schools). The largest enrollments are in the university undergraduate modality, with 1,346,425 students (71.7 percent of the total). Of these, some 70 percent are in a public university.¹¹ The technical modality covers enrollments in technological-university institutes and schools;¹² all enrollments in this modality are part of the public system of technical institutes distributed across the country.¹³ The normal school modality, which is responsible for educating professional teachers, is composed of 213,800 students, 61.5 percent of whom are in the public system. The remainder of enrollments in this cycle are made up of: 24,174 students in public professional schools administered by non-university government bodies such as the National Institute of Fine Arts

¹⁰ Beginning with the 2000-2001 academic year, university careers (in chemistry) were launched in technological universities in Tabasco and San Juan del Río.

¹¹ The public university system includes federal universities, state universities, and public universities with “solidarity support” (*universidad pública con apoyo solidario*).

¹² The public technological system is organized into a general modality (technical institutes) and specialized modalities (agricultural, forestry, and oceanographic studies). It also includes the National Polytechnic Institute (IPN).

¹³ There are a total of 189 institutions of this type, 23 of which were created in the year 2000.

(INBA) and the National Institute of Anthropology and History (INAH); 3,348 students in schools operated by the army and navy; and, finally, 189,754 students enrolled in non-university private schools that offer an undergraduate education in some area of specialization.

- *The postgraduate cycle.* Postgraduate education covers all specializations, master's, and doctoral programs imparted in public and private universities and institutes. The total postgraduate enrollment is 126,700 students, 21.4 percent of them in specializations, 71.6 percent in master's programs, and the remaining 7.0 percent in doctorates. Federal universities¹⁴ absorb 16.2 percent of total postgraduate enrollment; state universities, 27.4 percent; private universities, 25.5 percent; technical institutes, 6.0 percent; public normal schools, 2.5 percent; and private normal schools, 0.6 percent. The remainder is in public or private schools that are authorized to offer education at this level even though they are not part of a university, such as healthcare training institutions.

INSERT TABLES 8.7, 8.8, 8.9, 8.10 NONE OF THESE ARE CITED IN TEXT

Growth and Diversification of the Higher Education System in the 1990s

During the 1990s, Mexico's higher education system underwent major transformations in its organization, size, distribution, and performance. In 1990, total enrollment in higher education was 1,245,532 students, including all educational modalities. In 1999, enrollment reached 1,803,790, for a total expansion of 45 percent of the student body. Over the same period, the number of university professors rose from 129,092 to 192,406—equivalent to a 49 percent increase in ten years—and the number of higher education institutions grew from 760 to 1,250 (an increase of nearly 65 percent).

Other changes in the system included:

Increased coverage of potential demand. In 1990, Mexico's higher education system served 13.8 percent of the population between the ages of 20 and 24; by the end of 2000, it reached 19 percent of that age group.

¹⁴ The National Autonomous University of Mexico (UNAM) and the Autonomous Metropolitan University (UAM) are called "federal" universities because they are subsidized with funds from the federal budget.

Changing patterns of enrollment in public higher education. In the public sector, expansion during the 1990s was due almost exclusively to growth of the technical education segment. Through the creation of fifty-one institutes and thirty-eight technological universities, enrollment in the technical subsystem grew by more than 60 percent (from 166,500 students in 1990 to more than 260,000 in 1999), and the subsystem's share of public higher education offerings went from 20 to 36 percent. In contrast, overall enrollment in universities grew by less than 7 percent over the decade. Enrollment in public normal schools increased from 9,067 students in 1990 to 11,209 in 1999 (equivalent to an overall growth of 23 percent), thus maintaining its share of public higher education at around 10 percent.

Increased presence of the private sector in higher education. The participation of the private sector in higher education became very significant over the course of the decade. In 1990 private institutions covered 17.4 percent of the demand for undergraduate education; by 1999, their participation had risen to 27.6 percent. Enrollment increased at a rate of nearly 10 percent per year over the 1990–1999 period. The expansion of private higher education has been most extraordinary at the postgraduate level; in 1990 there were 9,530 students in that modality, while in 1999 there were 40,658. Moreover, there was evidence of increased differentiation among private-sector educational options. For instance, there was consolidation among the set of higher educational institutions ruled by market conditions (that is, those that do not carry out research or cultural functions and do not have an adequate academic infrastructure, even though they offer professional training that is in high demand). It is estimated that, of the more than 700 currently existing private institutions, barely one-fifth of them may be considered universities; the rest are institutes, centers, advanced training schools, and other non-university modalities. On the other hand, during the 1990s the more solid private universities developed strategies for territorial growth, establishing regional sites throughout Mexico.

Greater concentration of educational demand in areas and professional careers associated with services. As a general tendency during the 1990s, enrollments in higher education declined in agricultural and livestock sciences, as well as in natural and exact sciences. This continued a trend in place since the 1980s. The health sciences and education, on the one hand, and the humanities, on the other, remained constant as a percentage of educational offerings (27 percent and 4 percent of total enrollment, respectively, not counting enrollment in normal schools). In contrast, the social and administrative sciences continued to expand, to the point that this area covered practically half of all undergraduate enroll-

ments (counting both public and private institutions, including the technical, university, and normal school modalities). In 2000, one-third of total enrollment was concentrated in only three options: law (12.2 percent), accounting (11.1 percent), and administration (10.2 percent). According to the ANUIES classification, approximately 70 percent of total higher education enrollment is associated with the tertiary sector of the economy, which is out of proportion with indicators of the employed population (53 percent of the labor force belongs to the tertiary sector) and gross domestic product (GDP) (the tertiary sector accounts for 66 percent of GDP). This disproportionality is considerably more acute in those states with the highest levels of economic backwardness, such as Chiapas, Guerrero, Hidalgo, Nayarit, and Oaxaca. In each of these states, enrollment in tertiary sector professions is considerably higher than the national average.

Growth of postgraduate education. In 1990, national enrollment in postgraduate education was slightly above 40,000 students; in 2000, there were 120,000 students enrolled in specialized courses of study, master's programs, and doctorates. The near tripling of enrollment was due both to progressive increases in the educational requirements of the modern sector of the labor market and to an explicit policy of strengthening the academic faculty of higher educational institutions. However, this expansion also reflected the constriction of the job market for professionals, a phenomenon that made the option of continuing in school more attractive (a significant portion of postgraduate students are protected by scholarships) than going out to find a job.

Changing gender balance in university undergraduate programs. By the end of the 1990s, the number of women in the higher educational system was practically equal to the number of men. This shift was due both to the greater presence of women in undergraduate, normal school, and technical education and to slowing growth in the number of men in university enrollments. By the end of the decade, the proportion of women in the areas of health sciences, social and administrative sciences, and education and humanities (which together made up nearly 70 percent of total enrollments) was higher than the proportion of men.

Along with the changes outlined above, the 1990s witnessed trends toward diversified financing, more rigorous evaluation and accreditation, greater accountability, strengthened infrastructures, and quality assurance. As previously noted, these changes were accompanied by the Zedillo administration's efforts to promote growth in the coverage of the higher educational system and strengthen the academic profile of the teaching faculty.

Although the tendencies toward change that developed in the higher educational system during the 1990s were partly the result of government strategies, they were also the product of new arrangements between governmental agencies and the various higher education subsystems. No less important were the transformations promoted from within the institutions themselves, in areas such as academic organization and educational content. Added to this were the changes resulting from private educational actors and, lastly, the shifts that took place in the orientation and preferences of educational demand. Viewed in this way, the dynamic of change originated at the intersection of multiple political and social logics whose convergence is contingent and not without tension. However, from a general perspective, it can be said that in addition to the dynamic of expansion and diversification already noted, Mexico's public universities experienced fundamental changes in three areas of their organization: norms, preparation of faculty, and evaluation.

Higher Education Policies in the 1990s

The Salinas Administration Beginning with his presidential campaign in 1987–1988, Carlos Salinas de Gortari underscored the need to foster quality in higher education as the basis for the system's transformation (Melgar Adalid 1994). This idea was also stressed in the National Development Plan (PND) adopted for the 1989–1994 period. In 1989, the federal government inaugurated a Program for Educational Modernization and defined the general principles that would guide educational policy during Salinas's term. Among other goals, it advocated the revitalization of the system of indicative planning derived from the interactions between the Ministry of Public Education and ANUIES, and it stated that the Integral Program for the Development of Higher Education (approved by the ANUIES in 1986) was a part of the government's general strategy. It also established as programmatic lines evaluation and institutional reform, and it indicated that the growth and distribution of educational offerings would be guided by three principles: better use of installed capacity, gradual growth of institutions that had not reached their optimal size, and the opening of new options, principally in the open education system. In addition, the system's growth would be administered through the decentralization and regionalization model derived from the PND. The PME especially emphasized the need for policies that would make it possible for low-income students to have access to higher education.

At the level of concrete actions, the PME suggested: the expansion of educational offerings in school and open modalities; reconciling career

offerings that are a priority for development with student preferences; a territorial balance in enrollments; the simplification of the catalog of careers to avoid excessive specializations; the establishment of national criteria for academic excellence; and promoting evaluation processes in higher education in order to determine levels of performance, productivity, efficiency, and quality. In fact, the PME's proposals take up the recommendations made in the document ("Statements and Contributions for the Modernization of Higher Education") approved by the ANUIES general assembly, with which the Association responded to the federal executive's charge to develop a consensus proposal that could be incorporated into government policy.

Between 1989 and 1991, the definition of the political course of higher education unfolded in open convergence between the SEP and the ANUIES, with the supplemental participation of other federal government agencies. The rapprochement that took place between these two bodies—the former representing governmental interests and the latter the interests of the autonomous universities—was decisive for the smooth development of the higher education policy. Without the participation of the ANUIES, the state's dialogue with universities would have depended on bilateral arrangements made on a case-by-case basis. Through the Association's consensus-building procedures, the corresponding government agency (the Undersecretariat for Higher Education and Scientific Research, SESIC) could reach agreement on overall models and strategies to be applied.

Thus, as a first step, in 1989 the National Commission for Higher Educational Planning (CONPES) was reactivated and a series of national commissions were established comprised of federal government functionaries (SEP, the National Council for Science and Technology [CONACYT], and the Ministry of Budget and Planning [SPP]) and the rectors or directors of higher educational institutions. These included national commissions for the evaluation of higher education, the promotion of open higher education, linking research with the social and productive sectors, the evaluation and improvement of postgraduate education, the evaluation and stimulus of research quality, and participation in the National Solidarity Program (PRONASOL, the Salinas administration's hallmark anti-poverty program). Each one of these commissions was chaired by the secretary of public education. Although they met throughout 1990 and 1991, in practice the only commission that produced results that could be implemented was the one for the evaluation of higher education.

Later, in 1990, the ANUIES approved a document articulating a higher educational strategy based on seven programs: academic im-

provement, upgrading of research, postgraduate education, continuing education, cultural extension, administration, and support to the baccalaureate. In 1991, the CONPES defined "priority lines of action for improving the quality of higher education in Mexico": bringing the curriculum up to date; improving quality in the training of teaching and research professionals; establishing an institutional identity in research and postgraduate studies; updating academic infrastructure; reorganizing educational administration and norms; developing an institutional information system; diversifying funding sources; and promoting the participation of social and productive sectors in higher education.¹⁵ The same CONPES statement established "priority lines of an institutional character": training of academic personnel; development of academic infrastructure and a national network of libraries; diversification of wage policies (differentiated salary scales); improvement of procedures for granting subsidies and for other transactions with agencies of the federal government; and strengthening inter-institutional research programs.

Progressively and through a complex process of negotiations and agreements, the Salinas administration's policy action lines took shape: modifying the inertial model of financing, differentiating academic salaries, and introducing a culture of evaluation. The emphasis placed on evaluation was translated into a series of initiatives and measures that without doubt will, over time, change canonical practices in academia, as well as traditional forms of administration.

The new emphasis on evaluation in higher education appeared in a proposal for multipronged institutional evaluation adopted by the ANUIES in July 1990. It consisted of three modalities: (1) institutional self-evaluation, (2) evaluation to be carried out by inter-institutional committees for evaluation of higher education (*comités interinstitucionales de evaluación de la educación superior*), and (3) evaluations of the higher education system and its subsystems carried out by the SEP and ANUIES. Although all three modalities were operationalized in the course of the Salinas administration, only program evaluations carried out by peer-review committees occurred in a more or less regular fashion. However, a culture of evaluation became firmly established in the academic management of educational institutions, above all through the variety of programs designed to stimulate academic productivity that spread through Mexico's universities beginning in the early 1990s. Similarly, the Salinas government continued the National System of Re-

¹⁵ See "Prioridades y compromisos para la educación superior en México, 1991-1994." In 1994, ANUIES published a study entitled "Avances de la universidad pública en México" ("Progress in Public University Education in Mexico"), which reported on institutions' progress in meeting the goals set by the CONPES agreements.

searchers (SNI) administered by CONACYT; the SNI constitutes another mechanism for the evaluation and selective promotion of university researchers and teaching faculty.

In 1993, the ANUIES General Assembly approved the creation of the National Center for the Evaluation of Higher Education (CENEVAL). The CENEVAL took the form of a nonprofit organization (*asociación civil*) charged with designing and administering entrance exams for higher middle education, higher education, and postgraduate education, as well as having responsibility for the quality of graduates. At that same meeting, the ANUIES approved the use of two procedures for the accreditation of studies: a national indicative exam before entering undergraduate studies (*licenciatura*) and a general exam of professional qualifications.

During the 1990–1991 period, the SEP began distributing complementary funds by means of the Fund for Educational Modernization (FOMES). Through the FOMES, the SEP set out to guide institutions of higher learning toward the objectives put forward in the PME. Similarly, in 1993–1994 the ANUIES established the Program for the Improvement of Academic Personnel (SUPERA), through which the SEP distributed grants to improve the academic level of university teaching faculty.¹⁶ The activities of FOMES and SUPERA began to restructure traditional methods of financing public institutions of higher education, which involved assigning budgets on the basis of enrollments and through negotiations between the SEP and each one of the institutions.

The strategy of redistributing and reorganizing educational financing was also pursued in another public policy instrument, the so-called development agreements (*convenios únicos de desarrollo*) through which federal and state authorities establish the bases for coordinating budgetary actions. These development agreements were part of the Salinas government's more general federalization strategy. Through them, the country's institutions of higher education began to diversify their sources of subsidy, achieving more (or less) advantageous combinations according to the system of alliances and political relations between federal and local powers that emerged in each case.

In addition to the strategies already mentioned, all of which arose principally from the SEP–ANUIES policy axis, the Salinas administration

¹⁶ Between 1994 and 1996, SUPERA provided a total of 1,593 postgraduate scholarships to tenure-track professors working at institutions affiliated with the ANUIES. Beginning in 1998, SUPERA focused its efforts on providing postgraduate scholarships to academic personnel from technological institutes under the jurisdiction of the SEP, public universities affiliated with the Ministry of Agriculture and Live-stock, and private institutions affiliated with the SEP.

pushed for important changes in technical higher education. The project to create technological universities began in 1991 with the establishment of the Nezahualcóyotl, Tula-Tepeji, and Aguascalientes units, and in 1993 the government initiated the academic reform of technical institutes.

In keeping with the objectives outlined in the PME, the Salinas government did not neglect the reform of various legal frameworks. Most noteworthy in this area were the reform of Article 3 of the Mexican Constitution (March 1993) and the new General Law on Education (July 1993).¹⁷ The reform of Article 3 added (as section V) new language obligating the state to “promote all the educational types and modalities necessary for the country’s development” (including higher education). This amendment removed the phrase stating that “the state provides higher education,” thus loosening the state’s legal obligation to finance fully public higher education. The same reform established the state’s obligation to “support scientific and technological research” and to “foster the strengthening and dissemination of national culture.” Moreover, the 1993 General Law on Education introduced a section that regulates the evaluation of systems covering public universities and other institutions of higher education.

What stands out in a balance sheet of the achievements and limitations of higher education policy during the Salinas administration is government’s commitment to introduce efficiency criteria and values (quality, competitiveness, and productivity) to guide the activities of university institutions. The government’s ability to do so reflected its capacity to develop multiple spaces of negotiation and agreement, although it was also based on the implementation of more aggressive instruments (above all financial ones) designed to align the educational programs with the government’s goals. Nevertheless, some of the government’s objectives were not met or were abandoned in the course of the Salinas administration, including the program to support low-income students, the promotion of open education systems, the reorientation of educational demand, and the redefinition of career offerings.

Some analysts note that a typical feature of President Salinas’s administration was the tendency to modify agreed-upon strategies through selective interventions that reflected conjunctural political interests. This style of government was indeed the outstanding characteristic of the Salinas government’s higher education policies. Perhaps because of this, by the end of the Salinas administration there were clear signs that the discourse of modernization had worn thin.

¹⁷ The Salinas administration did not, however, reform the Law for the Coordination of General Education.

One of the greatest shortcomings of the Salinas education program was its underestimation of the demand for university education. This underestimation resulted in absurd limits being placed on the supply of new educational openings precisely in the areas of greatest demand, Mexico's metropolitan areas. Demand pressures would very quickly force the succeeding administration to revise its plans.

The Zedillo Administration In January 1995, President Ernesto Zedillo announced his 1995–2000 Program for Educational Development (PDE). In keeping with the terminology in fashion, the document placed emphasis on the “equity, quality, and relevance” of education as the main educational challenges facing the new administration. The section having to do with higher education started by recognizing the need to meet increasing demand and, in this manner, broaden the system's social coverage. The document set the goal of 1.8 million higher education students for the year 2000, equivalent to a 30 percent increase requiring the creation of nearly 100,000 new places per year.

Among other objectives, the PDE proposed forging closer links between higher education and the job market for professionals, having the states share responsibility for both financing and orienting educational offerings so as to take account of the needs of the local and regional environment, and improving the training of academic personnel. Like the PME under Salinas, the PDE advocated academic quality, based on the improvement of study plans and programs and the supply of appropriate equipment, especially laboratories, libraries, computing centers, and workshops. In terms of research activities, the PDE underlined the role of research as an input for the improvement of teaching and its importance as a resource for technological innovation. It stressed, therefore, that research projects should in all cases have a practical application.

Furthermore, the PDE established a commitment to improve the incomes of professors and researchers based on their professional performance, as well as to double the number of professors with postgraduate degrees by the year 2000. In addition, the PDE was explicit in giving continuity to, and deepening, the evaluation policies established during the previous administration. It also sought to improve coordination among institutions, organizations, and subsystems. Finally, the document signaled the intention of fostering advisory boards drawn from society as a whole in order to include the points of view of diverse organizations and social and productive sectors in professional training programs and in adjustments or modifications to study plans.

Some of the PDE's guidelines and orientations overlapped with the planning efforts of the ANUIES, in particular those of the Consejo de

Universidades Públicas e Instituciones Afines (Council of Public Universities and Related Organizations). The ANUIES's 1994 document titled "Progress in Public University Education in Mexico" defined objectives that, from the point of view of university rectors, would allow for the continuity of policies from one presidential term to the next. Specifically, it called for the "redefinition of the general mission of the university in Mexico and of the mission of each university institution in particular; creation of a national accreditation system; institutionalization of minimum quality benchmarks for the functioning of universities; establishment of new bases for making budgetary allotments and assigning special project funds; definition of status quo criteria concerning the academic careers of teaching and research personnel."¹⁸

Meanwhile, as a result of Mexico's entry into the Organisation for Economic Co-operation and Development (OECD) in 1994, the Mexican government contracted with that organization for it to carry out a diagnosis of the conditions prevailing in the country's higher-middle and higher education systems. The ensuing report, published in 1996 as "An Examination of Education Policy in Mexico," included a diagnostic section and another with operational recommendations. The diagnostic part underlined the heterogeneous, complex, fragile, poorly articulated, and rigid character of the great majority of higher-middle and higher education institutions. In other words, it is a system divided into various subsystems, but without internal integration or opportunities for horizontal student mobility; with different forms of coordination with educational authorities and different legal frameworks; with significant growth of private institutions; and with enrollments that are highly concentrated in the social and administrative sciences. The report indicated that "the weight of scientific and technical education is modest compared to Mexico's current level of economic development." In the chapter on recommendations, the OECD experts pointed to five critical areas in which "reforms are patently necessary," namely: flexibility, relevance, quality, academic personnel, and financial resources. For each of these areas there were recommendations ranging from generic objectives to very specific proposals. The OECD report was distributed to public universities through the SEP's Undersecretariat of Higher Education and Scientific Research, with the request that it be acted upon and that the actions taken in response to the OECD recommendations be reported to the SEP.

Thus, during the early years of the Zedillo administration a relatively new scenario emerged for the definition and negotiation of higher education policy guidelines. In addition to the traditional actors (SEP and

¹⁸ "Avances de la universidad pública en México," *Revista de la Educación Superior* no. 89 (January-March 1994).

ANUIES), a prominent role would be played by the state commissions for higher education planning that were reactivated by the SEP in 1997, and by the organization that brings together Mexico's private universities, the Federation of Mexican Private Institutions of Higher Education (FIMPES).

One marked difference between the Salinas and Zedillo administrations in this field was that, despite continuity in strategies for educational evaluation and the diversification of financing, the Zedillo government intervened less in such areas as academic reform and institutional reorganization. To the contrary, the agencies of the SEP concentrated on the development of selected projects,¹⁹ on managing complementary resource funds, and on the design of administrative reform programs.

It is also important to note that, during its early years, the Zedillo administration had to face the effects of the economic crisis brought on by the sharp devaluation of the peso in 1994–1995. The federal budget for higher education did not recover until 1999–2000, so that the objectives established in the PDE were constrained by financial limitations. These considerations shifted the government's priorities toward strengthening scholarship programs for the professional development of academic personnel in institutions of higher learning (principally those outside of Mexico City); bolstering the technical education subsystem; consolidating the evaluation and financing systems for public universities; and, finally, allowing private investment in the field of university education. The first of these initiatives resulted in the creation of the Program for the Improvement of the Professoriate (PROMEP) in 1996. This program mandated self-evaluations and institutional development programs as a condition for eligibility, and it required participating bodies to define specific needs for the development of their faculty, which would be met by providing scholarships for professors to obtain postgraduate degrees in academic programs of excellence.²⁰ In addition, in 1998 the government established the Program of Incentives for Performance of Career Teaching Personnel, which provided salary supplements for those institutions that lacked their own incentive programs for teaching performance. Meanwhile, the FOMES program remained in place and became the SEP's main instrument for financial redistribution.

Throughout the Zedillo administration, the private higher education system exhibited a great deal of dynamism in both quantitative and

¹⁹ The most important of these was the program for technological universities, the reform of the normal school system, and expansion of the system of technological institutes, which took shape as a federal system starting in 1997.

²⁰ The PROMEP replaced the earlier SUPERA in public universities.

qualitative terms. In early 2000, the proportion of students in private schools exceeded 30 percent of the total, and the proportion of private establishments exceeded that of public ones. As part of this expansion, some well-established private universities (such as the Universidad Iberoamericana, the Instituto Tecnológico de Estudios Superiores de Monterrey, and the Universidad La Salle) instituted schemes for the regional distribution of their professional career offerings, as well as curriculum renewal initiatives. At the same time, the professional establishments oriented toward serving those excluded from higher education opportunities consolidated itself. In general terms, private institutions relieved the pressures of growing demand and limited resources under which the Zedillo administration was operating. In exchange, they benefited from a deregulation policy that culminated in SEP Accord 279 (July 10, 2000) that streamlined accreditation procedures. The accord practically eliminated the SEP's supervision and evaluation of institutions, programs, and academic personnel, in contrast to what takes place in the public sector.

Lacking indicators that would permit an objective evaluation of the impact of public policies in areas such as the quality and relevance of higher education, it would be foolhardy to end this presentation with conclusive judgments on the effectiveness of the strategies and instruments implemented during the Zedillo administration. As in the case of the Salinas administration, the Zedillo record is mixed in terms of goals accomplished (for example, those having to do with growth and coverage of the higher education system and doubling the number of professors with postgraduate degrees) and unfulfilled. Among the latter, though, the following should be noted: the establishment of links between the various higher education subsystems; linking educational offerings with job market openings for professionals, and the establishment of civilian advisory boards. It is no coincidence that the unmet objectives require the development of non-corporatist linkages among the state, educational institutions, and society. This may be the main challenge in designing a new higher education policy.

CONCLUSIONS

In the introduction to this chapter, we stated that policies put in place during the 1990s favored the expansion and diversification of the middle and higher education systems. However, these processes were not accompanied by changes that would produce greater academic quality, social relevance, or even in a better fit between labor market needs, on the one hand, and the academic quality of technical, baccalaureate, and

professional studies, on the other. Although some advances are indisputable—such as having overcome the stagnation in enrollment growth experienced in the 1980s, having experimented with new modalities of middle and higher education, and having strengthened postgraduate education—it is clear that the major unfinished task for middle and higher education in Mexico is the academic reform of these educational levels.

What is needed is academic reform characterized by flexibility, focused on learning, and aimed at achieving higher levels of social relevance. By flexibility, we mean the creation of procedures that facilitate students' schooling trajectories and which allow student mobility among the different modalities that make up the system. In addition, students should also be able to participate in the design of their own curriculum plans, in line with their interests and vocational preferences. Despite the good intentions of educational planners, the prevailing pedagogical approach is one based exclusively on teaching that privileges rote learning and leaves little room for creativity and independent learning. There is, then, a need for new pedagogical models centered on students' learning needs, models that foster independent learning and recognize that those who are being educated can generate knowledge. Finally, there should be a thorough-going review of study plans and programs to make sure that each educational level (technical, baccalaureate, undergraduate, and postgraduate) really responds to Mexico's development needs and the challenges of globalization. Achieving improved levels of efficiency, relevance, and equity is the fundamental priority facing Mexico's educational systems, and the only chance for education to participate in addressing the country's development challenges.

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Table 8.1. **Profile of Mexico's Middle Education System, 1990-2001**

School Year	Secondary School Graduates	Middle Education Absorption Rate (percent)	Entrants into Middle Education	Total Middle Education Enrollment	Percentage Increase on Previous Year
1990-1991	1,176,290	75.4	899,653	2,100,520	—
1991-1992	1,169,556	79.3	933,117	2,136,194	1.7
1992-1993	1,162,311	80.9	945,766	2,177,225	1.9
1993-1994	1,174,446	82.5	958,979	2,244,134	3.1
1994-1995	1,189,307	87.9	1,032,854	2,343,477	4.4
1995-1996	1,222,550	89.6	1,065,274	2,438,676	4.1
1996-1997	1,272,675	94.3	1,152,724	2,606,099	6.9
1997-1998	1,277,300	94.4	1,187,678	2,713,897	4.1
1998-1999	1,335,625	94.5	1,206,872	2,805,534	3.4
1999-2000	1,369,109	93.0	1,242,361	2,892,846	3.1
2000-2001	1,448,505	93.3	1,277,105	3,001,377	3.8

Source: Secretaría de Educación Pública (SEP), *Perfil de la educación en México*, 3d ed. (Mexico City: SEP, 2000).

Note: Data on secondary school graduates in 1999-2000 and all data for 2000-2001 are estimates.

Table 8.2. **Distribution of Mexico's Middle Education Enrollments by Program Type, 1970-2001 (percentages)**

Year	General Bacca- laureate	Technological	Professional/ Technical
1970-1971	68.8	20.4	10.8
1980-1981	70.4	19.2	10.4
1990-1991	61.5	20.5	18.0
1995-1996	57.8	26.3	15.9
2000-2001	59.7	27.7	12.6

Source: Secretaría de Educación Pública, *Estadística básica del sistema educativo nacional: inicio de cursos*, various years.

Table 8.4. **Higher Education Enrollments in Mexico, 1980–1999**

Year	Colleges and Technical Schools	Normal Schools	Postgraduate Programs	Total Enrollment
1980	731,291	96,590	25,503	853,348
1985	961,468	125,236	37,040	1,123,744
1990	1,078,191	123,376	43,965	1,245,532
1991	1,091,324	110,525	44,946	1,246,795
1992	1,126,805	105,662	47,539	1,280,006
1993	1,141,568	110,241	50,781	1,302,590
1994	1,183,151	120,996	54,910	1,359,057
1995	1,217,431	138,048	65,615	1,421,094
1996	1,286,633	160,036	75,392	1,522,061
1997	1,310,229	188,353	87,696	1,586,278
1998	1,392,048	206,292	107,149	1,705,489
1999	1,481,999	210,544	111,247	1,803,790
2000	1,629,158	215,506	118,099	1,962,763

Source: Asociación de Universidades e Instituciones de Enseñanza Superior (ANUIES),
Anuarios estadísticos, 1980–2000.

Table 8.5. **Academic Personnel in Mexico's Higher Education System, 1980-1999**

Year	Colleges and Technical Schools	Normal Schools	Postgraduate Programs	Total Personnel
1980	69,214	3,588	1,072	73,874
1985	95,779	7,849	9,046	112,674
1990	105,058	12,488	11,546	129,092
1991	109,475	12,103	11,009	132,587
1992	113,238	12,002	11,467	136,707
1993	120,183	11,222	9,406	140,811
1994	123,290	12,026	10,053	145,369
1995	132,222	12,730	10,934	155,886
1996	133,598	12,759	14,531	160,888
1997	138,052	14,724	14,992	167,768
1998	143,325	16,359	18,304	177,988
1999	158,539	16,836	17,031	192,406

Source: Asociación de Universidades e Instituciones de Enseñanza Superior (ANUIES), *La educación superior en el siglo XXI* (Mexico City: ANUIES, 2000).

Table 8.3. **Private Middle Education in Mexico, 1998–1999 School Year**

Program Type	Enrollment			Institutions			Academic Personnel		
	<i>Private Schools (000s)</i>	<i>National Total (000s)</i>	<i>Private as Percent of National Total</i>	<i>Private Schools</i>	<i>National Total</i>	<i>Private as Percent of National Total</i>	<i>Private Schools (000s)</i>	<i>National Total (000s)</i>	<i>Private as Percent of National Total</i>
Baccalaureate	465.8	2,430.9	19.2	2,804	7,340	38.2	49.1	157.4	31.2
Professional/ technical	86.8	410.2	21.2	1,070	1,864	57.4	9.2	38.0	24.2

Source: Secretaría de Educación Pública (SEP), *Perfil de la educación en México*, 2d rev. ed. (Mexico City: SEP, 1999).

Table 8.6. **Higher Education Enrollments in Mexico by Program Type, 1980–1999**

Year	Undergraduate ¹			Postgraduate		
	<i>Public</i>	<i>Private</i>	<i>Total</i>	<i>Public</i>	<i>Private</i>	<i>Total</i>
1980	632,307	98,840	731,147	NA	NA	25,503
1985	810,391	151,077	961,468	29,513	7,527	37,040
1990	890,372	187,819	1,078,191	34,435	9,530	43,965
1991	891,524	199,800	1,091,324	35,460	9,486	44,946
1992	910,257	216,548	1,126,805	37,018	10,521	47,539
1993	908,480	233,088	1,141,568	38,131	12,650	50,781
1994	936,646	246,505	1,183,151	41,574	13,336	54,910
1995	943,245	274,186	1,217,431	47,390	18,225	65,615
1996	989,448	297,185	1,286,633	52,822	22,570	75,392
1997	990,729	319,500	1,310,229	61,210	26,486	87,696
1998	1,036,935	355,113	1,392,048	69,408	37,741	107,149
1999	1,073,098	408,901	1,481,999	70,589	40,658	111,247
2000	1,118,731	466,677	1,585,408	71,246	46,853	118,099

Source: Asociación de Universidades e Instituciones de Enseñanza Superior (ANUIES), *Anuarios estadísticos*, 1980–1999.

¹ *Licenciatura* programs

NA = Not available