The Evolution of Higher Education in Mexico: A Profile

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As one expert on the development of higher education in Mexico has noted, to study the evolution of educational institutions in Mexico is to step into a world of confusion, contradiction, bewilderment, and amazement (Sanchez, 1944). In studying the history of Mexican education a lack of uniformity in policies and plans can be noted. One is led to conclude that Mexico has lacked the vision required to develop a successful plan for educational development. However, such an impression is to be arrived at with caution. An objective interpretation of the development of educational institutions in Mexico requires a thorough understanding of the vital currents and issues basic to the founding of the Mexican society. Sanchez (1944) points out that, for most students of education in the United States, a lack of understanding of these vital currents and issues can easily lead to an incorrect assessment of the educational scenario of Mexico:

> Mexico presents a picture of accomplishments and deficiencies, of readily apparent inconsistencies and conflicts between theory and practice. This is particularly true for those students of education in the United States, who, guided by events in their own country, seek to assess Mexican education on the basis of the values, the achievements, and the historical pattern which were obtained in the development of schools in the United States. From the viewpoint derived from the study of the course which educational events have taken there, it is easy to arrive at an erroneous evaluation of the Mexican educational scene, itself (p.1).

It would be naive to undertake a true evaluation of Mexico's educational infrastructure without taking account of the values and conditions in the larger society responsible for the birth and character of the country's educational institutions. Since this study will not undertake an examination of the elements that contributed to the evolution of Mexican society, it can not do full justice to a discussion of the evolution of education in Mexico. Moreover, this study will not seek to describe the history of Mexican education but to sketch a profile of Mexican higher education based on several major developments in the area throughout the past four centuries. The emphasis of this study will be on the

major institutions of higher learning in Mexico and is designed to acquaint the reader with the Mexican higher education system as it evolved and as it exists today.

The Early Colonial Period

Not long after Spain began her conquest of Mexico in 1519, her colonizers set upon fulfilling their primary mission of bringing Christianity and education to the diverse, indigenous groups. Spain would provide the New World with "the state, the church, and the university institutions reflecting the threefold medieval division of power into the temporal, the spiritual and the academic (Gongora, 1979, p.17)."

Osborn (1976) informs us that, in introducing a new legal, political, and intellectual framework, the Spanish would not build upon a vacuum but upon the rich foundations of the Aztec and Mayan civilizations. These indigeneous societies were quite advanced with regard to technical skills, military organization and power, the genuine appreciation for art and beauty, economic development, and political stability.

In 1523, Francisco Pedro de Gante, a Franciscan friar, founded the first school in Mexico. This school was located in Texcoco and initiated efforts to teach Spanish to Indian children. In 1526, the Franciscan friar assumed control of a "renowned Indian school in the San Franciscan monastery in Mexico City, the Colegio de San Jose de Belen de los Naturales (Osborn, 1976, p.6)." In this remarkable institution, individuals of all ages would receive instruction in reading, writing, Latin, art, music, carpentry, tailoring, shoemaking, and stone cutting. The unprecedented accomplishments of the Colegio de San Jose would permit the institution the honor of serving as a model for education in Mexico throughout most of the Colonial period (Osborn, 1976, p.7).

In 1537, Don Antonio de Mendoza founded and endowed the Colegio de Santa Cruz de Tlatelolco, an Indian school which was to become the first institution of higher learning in the New Spain. By 1540, another institution, known today as the Colegio de San Nicolas de Hidalgo, was founded at Patzcuaro by a very respected member of the ruling Audencia of the New World, Vasco de Quiroga. This Colegio was originally designed to offer free instruction to

those Spanish, Indian, and Mestizo young males desiring to study theology. "Today the Colegio of San Nicolas is the oldest institution of higher learning in the New World (Sanchez, 1944, p.58)." It is also known for having been "the intellectual cradle of many liberal leaders and movements in Mexico (Sanchez, 1944, p.58)." Throughout most of its history, this institution would offer instruction in Latin, moral theology, canons, and religion, and would serve as a center of training for Indian leaders.

In 1547, the Colegio de San Juan de Letran was created especially for Mestizo children. Osborn (1976) reported that one of the major purposes of this institution was the training of teachers, and by this, became the first normal school in Mexico.

The Beginning of University Education

University education in Mexico actually began in 1551, with the founding, by papal and royal decree, of the Real y Pontifical Universidad de Mexico (Guerra, 1979, p.3). Several historians contend that this university can dispute the Universidad de San Marcos in Lima, Peru, as to which is the oldest university of the New World. The Universidad de Mexico was organized after the plan of a very distinguished Spanish university, the Universidad de Salamanca. Officially opening in 1553, the Universidad de Mexico would serve as "the most notable university in Mexico for most of the succeeding 400 years of its life (Osborn, 1976, p.8)."

The programs offered at the Universidad de Mexico were founded in the medieval tradition and were scholastic in nature. These programs were Theology, Scripture, Canon Law, Arts, Jurisprudence, Rhetoric, and the Justinian Code (Mac-Lean y Estenos, 1956, pp.114-115).

Throughout the first decade of its existence, the Universidad de Mexico would fulfill the important social mission of providing to numerous individuals the opportunity for upward social mobility through the attainment of university credentials. In doing this, the Universidad would produce an intellectual elite capable of merging with the aristocracy and having a major influence on the destiny of Mexico.

One author exemplifies the significance of the Universidad de Mexico as a great pioneering American university by comparing the accomplishments of this institution to the actual developments taking place in the United States at that time: "... by 1636, when Harvard College was founded, the University of Mexico had graduated more than 8,000 students with the baccalaureate degree (Sanchez, 1944, p.50)." The significance of the early efforts of the Universidad are further emphasized in another parallel drawn between Mexican and U.S. higher education:

> By 1776, the year of the Declaration of Independence, the Royal and Pontifical University of Mexico had been in operation for two hundred and twenty-three years. During that time it had granted 1,162 doctors' and masters' degrees in all four faculties: Theology, Arts, Canon Law, and Civil Law; and it had granted 29,882 bachelors' degrees, besides numerous licentiates not recorded. At that time there were in Mexico, in addition to the university, fourteen different colleges or general houses of study of similar rank, many of whose students took graduate courses in the university. Now if we turn to the thirteen American colonies we find that there were nine colleges, not one of which could rightly be called a university. Not until 1779, as a result of the efforts of Thomas Jefferson, was the College of Willian and Mary, which had been originally granted a charter in 1692 but which did not actually open until 1693, reorganized as a university (Castaneda, 1938, p.7).

In 1573 the Colegio Mayor de Santa Maria de Todos Santos was established in Mexico City as an endowed residential center of graduate studies. Dr. Francisco Rodriguez Santos provided the funds for constructing and supporting the institution, which was designed to assist ten sons of illustrous families to pursue their higher studies. The high standards of the Colegio de Santa Maria are evidenced in that of the ten "fellows" selected four were post-doctoral students. One author depicts the significance of this institution and the tremendous impact it was to have on the educational and cultural development of Mexico:

> That an individual and a society should place such value upon the highest and finest elements of learning is phenomenal in itself, even had such a concept not been put into practice. That such an idea should be embodied in the establishment of an endowed institution through the high-minded philanthropy of an individual living in that period of world history is, to repeat, almost incredible. But this institution became the crowning glory of higher education in Mexico in the sixteenth century and it may serve as a fitting symbol for the remarkable attainments of this Golden Age of Mexican history. The vision and the spirit that came together

> in the Colegio Mayor de Santa Maria de Todos Santos bring to a culmination the laying of the cultural foundation of Mexico (Sanchez, 1944, pp.54-55).

Contributions Made by the Jesuits

Wilson (1941) points out that the educational achievements of the Sixteenth Century would be high lighted by the arrival of Jesuits. The presence of Jesuits in New Spain was in large part due to the efforts of Martin Cortez, son of the conqueror, who "pressed for the sending of Jesuits to found a college of higher studies for which his father had left an endowment (Sanchez, p.51)." In 1571 a royal decree accorded the long awaited permission to bring Jesuits to New Spain. One author notes the great accomplishments by the Jesuits:

> At the time of their expulsion in 1767, they had not only founded more than twenty-five colleges but they had also succeeded in modernizing teaching by the introduction of modern philosophy, and with it the studies of physics and natural history. The early foundations in the City of Mexico, the Colegio de San Pedro y San Pablo (1573), that of San Gregorio (1575), of San Bernardo (1575), and of San Miguel (1576), were intended for the education of the Creoles and were later combined with that of San Idelfonso, with the exception of San Gregorio, which was for Indians. The Jesuits also directed colleges in Patzcuaro, Valladolid, Puebla, Oaxaca, Guadalajara, and Vera Cruz (Sanchez, 1944, p.51).

In the later colonial period, the Universidad de Mexico, in exemplifying the Latin American universities flourishing at that time, was "committed to the scholastic Bologna-Salamanca tradition of the Southern European Universities (Osborn, 1976, p.11)." However, with the arrival of the Jesuits, Mexican higher education broke away from scholasticism--the norm of the medieval universities. "The Jesuits, by introducing the classics of the Greek and Roman civilizations, opened new intellectual horizons to Mexico as they were doing elsewhere in the world (Osborn, 1976, p.10)" Furthermore, the Jesuit plan of study provided Mexico its first experience with realistic studies.

From the last quarter of the Sixteenth Century to 1767, the Colegio de San Idelfonso became a great center of higher education. This school was a remarkable example of the relatively liberal curriculum sponsored by the Jesuits. The realistic and classical studies found in the Jesuit curriculum

would provide the students with "an education in which mild discipline, academic awards, public presentations, the drama and literary clubs formed an essential part of the program (Sanchez, 1944, p.75)." This liberal program enabled the Colegio de San Idelfonso to prosper for two hundred years.

The Early Nineteenth Century

The Nineteenth Century had, by-in-large, witnessed a rapid deterioration of higher education due mostly to the internal fragmentation of the country. In 1810 a priest named Miguel Hidalgo proclaimed the War of Independence against the Spanish and against bad government (Alba, 1967, p.38). The battles that ensued matched the liberal forces against the church, as each sought control over education. The struggles of the first half of the Neneteenth Century rapidly led to the demise of higher education, including the Universidad de Mexico:

> To all intents and purposes, indeed the University of Mexico had ceased to function as an important center of higher studies in 1810, with the beginning of the War of Independence. From 1821 to 1865 the institution was a university in name only and, during its intermittent periods of official existence, did little more than confer poorly earned titles and degrees which in no way compared with those of the past (Sanchez, 1944, p.68).

Public Education in the Nineteenth Century

In 1843 an attempt was made to revive vocational education through the establishment of the Escuela de Artes y Oficios. This goal, however, was not reached until Benito Juarez came into power. Overall, secular education would not flourish until 1858, under the direction of Juarez, one of Mexico's most liberal, capable, and honest leaders of all time. Indeed, Juarez removed education from church control as a measure to secure democracy and egalitarian education in Mexico.

The inspirational educational movement set in motion by Juarez would be only slightly visible in the Twentieth Century. However, the Nineteenth Century attempts to provide educational opportunity to large numbers of the

common people and to make higher education practical enough to meet the needs of the country, would give birth to college preparatory and university education. This was witnessed in 1867 when Gabin Barreda was asked to create the National Preparatory School. The founding of this institution would represent a milestone in the development of Mexican secondary and higher education (Sanchez, 1944).

Several state governments were inspired by the National Preparatory School, and they too sought to create their own preparatory and higher schools. By the latter part of the Nineteenth Century, state and federal governments were supporting fifty-five institutions of higher education distributed among twenty-eight states. These efforts were further improved in 1921 when Jose Vasconcelos, a great philosopher and intellectual, directed the new Ministry of Education and, in doing so, reinforced mass education in Mexico.

New Developments in the Twentieth Century

In 1910, the first modern theory of university education was proposed when Justo Sierra founded the National University of Mexico. This institution not only sought to prepare the future leaders of Mexico but had as its major goal the attainment of "the highest possible degree of academic learning and research in professional studies, and then to teach the graduates to apply their knowledge toward the advancement of the country (Guerra, 1978, p.2)." By 1925 other major universities had been founded. These were the University of Michoacan, the University of Yucatan, the Autonomous University of San Luis Potosi, and the University of Guadalajara. Thirteen additional universities were established between 1930 and 1976.

The founding of the Free School of Law in 1912 marked the beginning of private higher education in Mexico. Other important institutions which were established in the private sector were the Autonomous University of Guadalajara (1935), the Institute of Technology and Higher Education of Monterrey (1943), and the Iberoamerican University (1943). However, most of the private institutions of higher learning operating today were established after 1960.

During the first half of the Twentieth Century the developments in higher education were directed at technical and applied education, particularly the mechanical and technical professions. In addition, there was a major interest

in studies of commerce, architecture, and mechanical and electrical engineering.

In 1937 the National Polytechnic Institute was established by the federal government. Initially, the Institute consisted of a combination of studies from several existing institutions but later expanded in size and scope by adopting schools of medicine, economics, chemical engineering, mathematics, and physics. In 1961 the Center for Research and Advanced Studies of the National Polytechnic Institute was founded. This center excelled in postgraduate studies and research, as it aimed at providing the high-level training required to prepare Mexico's future professors and researchers. By 1967 Mexico had forty-seven technical institutes.

The brightest star in Mexican higher education during the Twentieth Century may be the Colegio de Mexico. This college originated in La Casa de Espana, which itself was established in 1938. Founded as a private institution, the Colegio de Mexico employed native and foreign scholars to do professional studies and research. In addition, it provided the funds for the publication of literary and scientific works. The following quote embodies the true meaning of this important institution:

> Three hundred and sixty-seven years after the founding of the Colegio de Santos, there has arisen in Mexico another educational foundation which seeks to enable competent scholars to pursue their studies and public services free from financial limitations and petty obligations. It is to be hoped that this worthy revival of that old-time and intelligent philanthropy may be the beginnings of a new era of private initiative in educational endeavor in Mexico (Sanchez, 1944, p.115).

Contemporary Enrollments by Type of Institution and Academic Level

This section profiles student enrollment in Mexican higher education according to type of institution and academic level. However, a necessary first step will be to provide the following definitions for those individuals not familiar with the terminology of education in Mexico.

1. Preparatory Education refers to those educational programs that are the equivalent of high school programs in the United States. These programs are often located within the universities or are closely associated with them.

2. Licentiate (Licenciatura) refers to the academic degree which is equivalent to the Bachelor's in the U.S.

3. Post Graduate Education refers to the educational programs that lead to graduate degrees, such as the Master's or Doctoral degrees in the U.S.

Table 1 shows the distribution of student enrollment by type of institution and academic level. As can be seen in this Table, at the higher education level (licentiate and post graduate), 105,117 students are registered in private institutions and 650,468 in public institutions. The private and public shares are 13.91 percent and 86.09 percent, respectively. Public autonomous universities hold the largest share of students both at the licentiate and at the post graduate levels.

When focusing on the number of students served by public institutions of higher education (licentiate and post graduate), it is found that 547,448 were registered at public autonomous universities; 95,216 at public technical institutions; and 7,804 at other public institutions of higher education. By way of comparison with the private sector, 68,695 were registered at private universities; 20,643 at private technical institutes; and 15,779 at other private institutions of higher education.

When studying Table 1, it becomes readily apparent that a very large percentage of students is served by public higher education. As Alfonso Rangel Guerra, a renowned expert on Mexican higher education, once noted: "Mexican higher education is comprised mainly of decentralized organizations funded by the federal government and other federal entities (1978, p.7)."

TABLE 1

Student Enrollment in Higher Education
by Academic Level and Type of Institution
(1979-1980)

Type of Institution / Academic Level	Preparatory	Licentiate	Post Graduate	Grand Total
Public				
Autonomous Universities	-	532,080	15,368	547,448*
Technological Institutions	-	93,594	1,622	95,216*
Other Institutions of H.ED.	-	6,633	1,171	7,804*
Subtotal Public	665,100[a/]	632,307	18,161	1,315,568
Private				
Universities	-	65,368	3,327	68,695*
Technological Institutions	-	18,594	2,049	20,643*
Other Institutions of H.ED.	-	15,022	757	15,779*
Subtotal Private	220,900a/	98,984	6,133	326,017
GRAND TOTAL	886,000	731,291	24,294	1,641,585

SOURCE: Anual Statistical Report for 1980, ANUIES.

* These figures do not coincide with the respective subtotals because the preparatory enrollment data were available only on a global basis and not by type of institution.

a/ Lopez Portillo, Jose, Fourth Government Report, Historical Statistics 1980, pp. 896-897, (data were estimated by SEP).

The Current Scene

Arizmendi and Zamanillo (1981) provide an insightful discussion on a document that touches upon the most recent state of Mexican higher education. This document, titled, Lineamientos Generales para el Periodo 1981-1991 del Plan Nacional de Educacion Superior (Guidelines for the National Plan of Higher Education for the Period 1981-1991), is a product of SEP (Secretary of Public Education) and ANUIES (National Association of Universities and Institutes of Higher Education). Specifically, the document discusses the general guidelines that were established for planning the future development of higher education in Mexico through 1991. These guidelines were defined and unaminously approved at the XX Reunion of the General Assembly of ANUIES, held July 30-31, 1980, in Morelia, Michoacan, Mexico (Arizmendi and Zamanillo, 1981).

ANUIES configures the Mexican higher education system into five separate subsystems: (1) technical education; (2) UNAM (the National Autonomous University of Mexico); (3) state universities; (4) other public universities; and (5) private institutions. Table 2 presents the distribution of student enrollments among these five subsystems.

Table 2
Growth Trends in Higher Education Enrollments

SUBSYSTEMS	CYCLES		
	1970-1971	1974-1975	1980-1981
Technological	50,217	77,457	133,515
UNAM	72,952	108,437	147,747
State Universities	91,697	178,638	429,272
Other Public Institutions	2,000	4,942	17,331
SUBTOTAL PUBLIC	216,866	369,474	727,865
Private Institutions	34,188	53,341	110,160
Total	251,054	422,815	838,025

Source: SEP, Subsecretary of Higher Education & Scientific Research, 1981.

As shown in Table 2, the rapid growth of student enrollments in Mexican higher education is readily apparent. For the year 1980-1981 student enrollments totaled 838,025, an increase of 333.8 percent since 1970-1971. In this same time period, enrollments had more than tripled in the public sector (from 216,866 to 727,865) as well as in the private sector (from 34,188 to 110,660). These figures seem impressive when considering that from 1970-71 to 1980-1981 the population of the country grew from 50 million to 70 million, an increase of 40 percent.

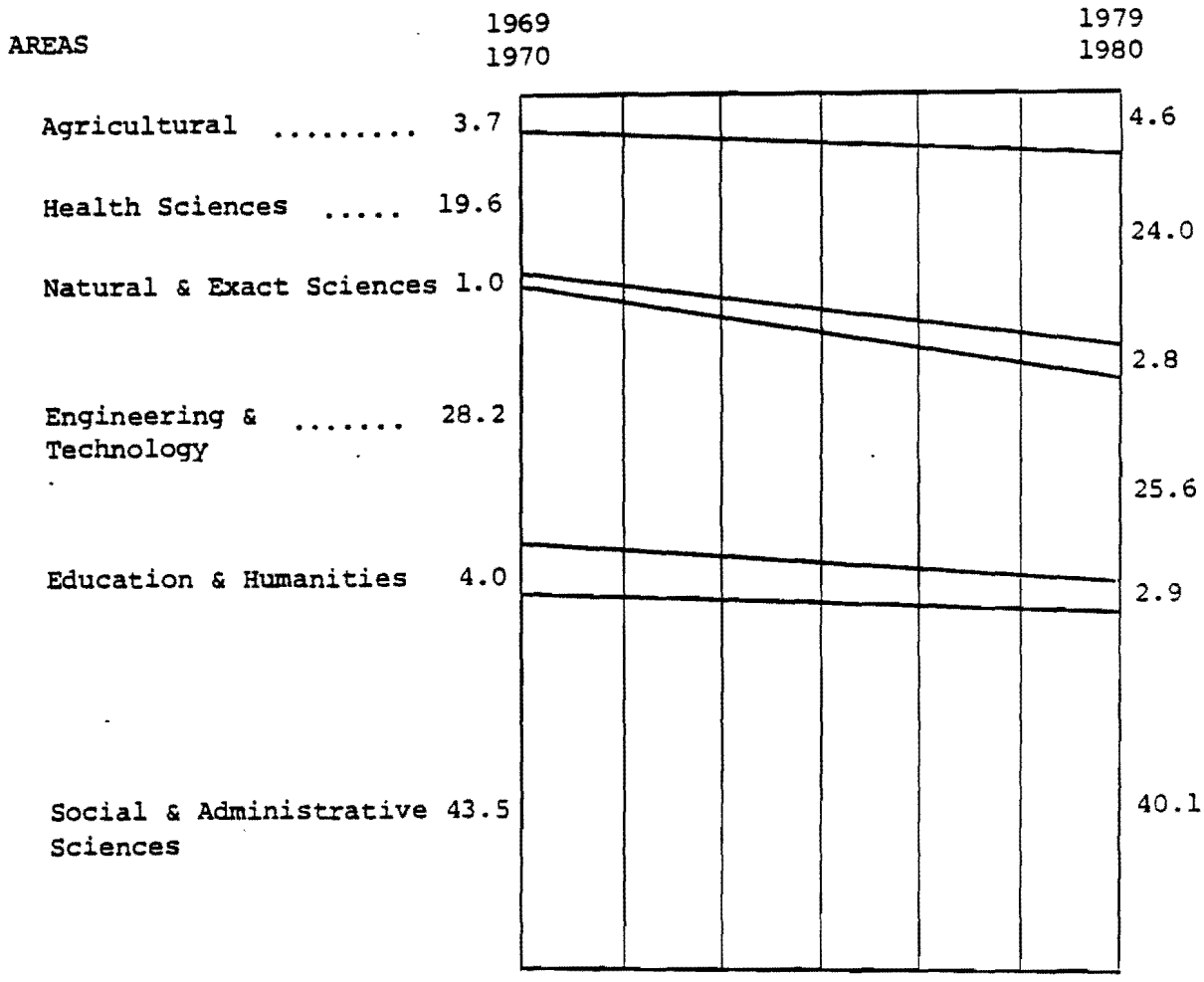
In Table 3 higher education enrollments are distributed among six academic areas, as done by ANUIES: (1) agricultural; (2) health sciences; (3) natural and exact sciences; (4) engineering and technology; (5) education and humanities; and (6) social and administrative sciences. The social and administrative sciences have consistently attracted the largest portion of student in higher education, 43.5 percent in 1969-1970 and 40.1 percent in 1979-1980. The health sciences have attracted a steadily increasing portion of students, from 19.6 percent in 1969-1970 to 24.0 percent in 1979-1980. Although the area of engineering and technology has traditionally attracted the second largest portion of higher education students, it reveals a steady decline in its share of students, from 28.2 percent in 1969-1970 to 25.6 percent in 1979-1980.

In planning for the future, those responsible for higher education in Mexico may find it necessary to identify the academic areas that are to play a major role in training the country's most needed manpower. It would then be reasonable to increase the support for those academic areas that are to attract a greater portion of higher education students. In doing so Mexico would take steps in the right direction to fulfill the country's goals for socio-economic development.

As can be seen in Table 4, the graduate education scenario in Mexico has altered quite significantly in the course of one decade. The number of students attending graduate school grew from 5,753 in 1970 to 24,313 in 1980, an increase of over 400 percent. It should be noted that most of this growth occurred at the professional and masters' levels, with the number of students at the doctoral level increasing minimally. This is due, in large part, to the fact that in

Table 3

Distribution of Higher Education Enrollments by Areas
(Participation in Percentages)



Source: Arizmendi and Zamanillo, Guidelines for the National Plan of Higher Education for the year 1981-1991, 1981.

Mexico there are very few individuals prepared to teach at the doctoral level. The vast majority of those who have completed doctoral level studies will be absorbed by the business sector--a much more economically rewarding option.

Table 4 reveals a very interesting development--the number of graduate programs in Mexico has increased substantially at every academic level. At the doctoral level, where the number of students enrolled increased from 746 in 1970 to 816 in 1980, the number of programs grew from 52 to 124 in the same time period. It appears that higher education experts in Mexico have diversified the curriculum so as to keep pace with the modernization of the natural and social sciences.

Table 4

Graduate Student Enrollments in Mexico — Graduate Programs in Mexico

ACADEMIC LEVEL	1970	1980	-	1970	1980
Professional	1,665	6,131		50	299
Master's	3,342	17,366	-	124	809
Doctorate	746	816	-	52	124
TOTAL	5,753	24,313	-	226	1,232

Source: CONPES, Secretario Conjunto, 1980.

Another interesting development has taken form with regard to graduate education in Mexico--the geographic decentralization of graduate education throughout the various states of the country. Table 5 shows that of all graduate programs in the country only 16 percent were offered outside the federal district (capital) in 1970, as compared to 52 percent offered outside the federal district in 1980. These figures

reveal what has probably been a determined effort by Mexico's higher education planners to develop graduate education in the public universities throughout the states.

Table 5

Decentralization of Graduate Education
(in percentages)

Location	1970	1980
Federal District	84%	48%
States	16%	52%

Source: Arizmendi and Zamanillo, Guidelines for the National Plan of Higher Education for the year 1981-1991, 1981.

Summary and Conclusions

The founding of the Real y Pontifical Universidad de Mexico in 1551 would mark the birth of a "golden century" in the evolution of higher education in Mexico. Indeed, many inspirational individuals and the institutions they created would have a profound influence on the intellectual trends in Mexico during the Sixteenth and Seventeenth Centuries.

For two centuries beginning in 1561, the Jesuits would be responsible for the founding of numerous schools of higher learning and for the rise of a new intellectual thought. However, after the Jesuits were expelled from New Spain in 1767, higher education in Mexico would not flourish again until the triumphs of the Benito Juarez regime. Juarez opened the door to liberal thought, to the resurgence of Indian education, and to the establishment of a foundation upon which a system of public education could be built.

After the Revolution of 1910, Mexico would witness the first of a series of efforts to extend educational opportunity to the masses. However, the Revolution would leave Mexico politically and economically unsettled in such a way that would contribute to the country's isolation from most

of the intellectual trends and educational movements of the modern world. The ensuing decades would see Mexican political and educational leaders embark on ambitious plans to develop numerous university and graduate programs throughout the country and to improve significantly the availability of technical and vocational education to the masses.

The developments of the Twentieth Century would by and large be the materialization of the liberal goals envisioned in the Revolution. To fulfill the old dreams of the Revolution would mean a phenomenal increase in the number and type of higher education institutions in the country. Most importantly, though, Mexico would pride itself in producing higher education institutions--such as the Universidad Nacional de Mexico and the Instituto Technologico de Monterrey--which can rightfully be considered among the best institutions of higher learning in Latin America.

This section has sought to present a partial description of the development of Mexican higher education, to touch upon the major events in the evolution of Mexico's educational infrastructure. In sketching the accomplishments of Mexican higher education, numerous achievements by many distinguished laymen and churchmen have been overlooked. Indeed, this section has only probed into some of the more notable events in the history of Mexican higher education.

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