Labor market segmentation, credentialism and educational development.

LABOR MARKET SEGMENTATION, CREDENTIALISM AND EDUCATIONAL DEVELOPMENT

A Dissertation Presented

By

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ABSTRACT

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The main objective of this thesis is to analyze the ideological and political functions of the schooling process of certification of educational achievement through educational diplomas or credentials, as well as the most important educational development implications of this process, within a context of a highly segmented and hierarchical occupational structure, which is the result, primarily, of the basic social division between intellectual and manual labor, and secondarily, of the productive heterogeneity and differentiation created by monopoly capital investments in underdeveloped countries.

The process of certification of educational achievement (educational credentialling) is conceptualized in this thesis as performing a crucial ideological and political function for the reinforcement and reproduction of the dominant class structure, according to the nature of political relations between the different classes in capitalist societies, and more in particular in underdeveloped societies whose industrialization process has been dominated by monopoly capital investments.

The utilization by employers of educational credentials, or of the relative educational attainment level of the labor force, as requirements for employment in the different occupational segments, is analyzed as Capital's strategy in creating profound social and therefore political divisions among the labor force, first along the basic social division between intellectual and manual labor in the enterprise, and secondly between the different enterprises according to their economic, technological and organizational power. This division of the labor force is legitimized by the meritocratic and technocratic ideology associated with individual educational achievement, and is thus highly functional for the reproduction of the dominant social relations of production.

From the perspective of the labor force, educational achievement and credentialling represents the most important opportunity for 'social qualification and distribution'; that is, for being separated into the spheres of intellectual or manual labor, and for obtaining the best positions in terms of income, autonomy, organizational power and social status in the former. Within the context of labor markets that are highly segmented along two general dimensions; first, between the spheres of intellectual and manual labor within each enterprise, and also between different occupational categories within each of these spheres, and secondly, between the firms belonging to the monopolistic Center and the competitive Periphery; the probabilities for individual social and occupational mobility are strongly determined by the attainment of the relatively higher as well as the selected

levels of educational credentials.

This socio-economic context becomes a fundamental obstacle to educational reform since those social groups and classes with the highest social mobility aspirations are also those with the political power to influence in their favor the pattern of expansion of public educational opportunities, and with the economic power to purchase private 'credentialling' opportunities. Consequently, the expansion of educational opportunities is concentrated at the higher levels of schooling, thus generating a continuing devaluation of the competitive advantage of educational credentials in the labor market competition and deteriorating then the social and occupational mobility probabilities of those with middle and lower levels of educational attainment, and most importantly, widening the social gap between the relatively schooled and non-schooled.

Finally, a proposal for educational change is presented whose objectives are, first, to gradually eliminate the monopoly of schooling over the realm of knowledge, thus also eliminating its control over the credentialling process, and therefore abolishing the aforementioned political and ideological functions of educational credentialling, and secondly, as a necessary and simultaneous complement, to gradually eliminate the credentials-based employment process in favor of a labor-controlled social organization of production, which would then facilitate the elaboration of the educational 'project' of the working class.

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CHAPTER I

THE PROBLEM

The Objectives and the Patterns of Educational Expansion in Underdeveloped Countries

The 1950s decade could be characterized as the "golden decade" of educational growth in most of the poor, underdeveloped countries of the world. A brief look at world-wide educational statistics is revealing. During the decade enrollment rates at primary and secondary education levels doubled while those at higher education trebled and quadrupled in many countries. Throughout the underdeveloped world the annual rates of growth of enrollments at the primary, secondary and tertiary levels were 6.4%, 9.3%, and 8.9%, respectively. In absolute numbers this meant a net increase of 66 million students during the decade.[1] Table 1 provides a comparative perspective on the growth of enrollment ratios during the decade in the major areas of the world. Two important trends can be derived from the analysis of this table. First, the differential growth index of enrollments between the developed and the underdeveloped areas of the world. While the average growth index of enrollments in secondary and higher education in Europe and North America was 160 and 159, for Africa, Latin America and South Asia it was 269, 215 and 216, respectively, a clear indicator of the gigantic educational effort of the underdeveloped regions. Secondly, the expansion of enrollments at the secondary and tertiary levels is

TABLE 1

GROWTH INDEX OF ENROLLMENTS BY LEVELS IN DIFFERENT AREAS OF THE WORLD, 1950-1960. 1950 = 100.

	Primary	Secondary	Higher
World	140	172	189
Europe	114	160	161
North America	142	161	157
Africa	223	271	267
Western	248	388	722
Eastern	210	206	700
Middle	203	366	---
Northern	230	332	302
Latin America	175	227	203
Tropical	193	255	205
Middle	186	255	220
Temperate	134	184	213
Caribbean	166	199	151
South Asia	175	213	240
Middle South	181	199	266
South East	160	271	179
South West	201	341	287

Source: Ph. Coombs, "The World Educational Crisis," p. 186. Data computed from UNESCO, Statistical Yearbook, 1965, pp. 105-107.

greater than at the elementary level.

Possibly, the most important factor in the initiation and continuing support of this pattern of educational expansion has been the political commitment of the governments, which attributed a high value to the role of education as a basic and necessary condition for the achievement of the objectives of modernization of traditional values and cultural patterns and for the development of the necessary human resources for the economic development plans. At the beginning of the decade the role of education was conceived of in highly positive and optimistic terms. Education was seen as the vehicle for modernizing cultural patterns, for promoting economic growth and achieving greater social equality.

This important role attributed to the educational system was derived from the theories of development and underdevelopment that were prevalent until the end of the 1960s. Underdevelopment was conceived of by some theorists as the result of the process of "sociological dualism" which was in turn created by the social decomposition and polarization derived from the superimposition of the capitalist mode of production over societies with a prevalent pre-capitalist mode of production.[2] Consequently, these societies became characterized by the existence of large masses of the population who hold traditional (that is, pre-capitalist) values and attitudes which preclude risk-taking, entrepreneurial activity and profit-seeking and which also emphasize social stability, fatalism and resignation. This pattern of values co-exists in underdeveloped societies with those of a small entrepreneurial elite oriented toward economic development and toward the

integration of local economies into the international economic system.

This theory of underdevelopment served as an empirical and theoretical base for the formulation of the "culturalists" theories of development which emphasized the importance of psychological and cultural barriers to the economic development process. David McClelland, for instance, in his book The Achieving Society, attempted to demonstrate the crucial role in the increase of the rates of economic growth in several countries performed by the existence, in the population at large and particularly in the entrepreneurial elite, of the need for achievement and its behavioral correlates such as risk-taking, long-term planning, delaying gratification, saving, and others.[3] A corollary of this theory is the need to create, through the educational system and mass media, the psychological conditions and habits necessary for the development of the entrepreneurial motivation and the need for achievement in the population. From a sociological perspective, Everett Hagen proposed the existence of a fundamental relationship between the process of capital formation, which is a necessary condition for economic growth, and technological progress, which becomes gravely limited and hindered due to lack of knowledge and lack of self-assertion at the individual level and lack of optimism about the future of society, both of which interact in the formation of a negative motivation regarding the changes and innovations of the existing societal conditions.[4] The "technologically progressive society" described by Hagen also found barriers to its development in societies dominated by ascriptive rather than achievement patterns of social stratification, according to Parson's pattern variables.[5]

The economic theories of underdevelopment, such as Eckhau's "technological dualism" theory,[6] presented an explanation of the large differences in the levels of social and economic development existing between the agricultural and manufacturing sectors of underdeveloped societies, as being generated by the lack of technological innovations in the productive processes of the former. Technological innovations increase productivity and consequently increase the national income which is the necessary condition for capital accumulation and thus for reinvestments in production, for the building of infrastructure and for the development of the necessary human capital.[7]

Thus, the role attributed to education within these theories of development was on the one hand that of developing the productive human resources necessary for the process of technological innovations, and on the other hand the modernization of values and practices that hindered the process of economic growth. Within this ideological context, for many of the leaders of the newly independent and developing nations, particularly in Asia and Africa, to the extent that the essence of underdevelopment was conceived of as the absence of modern values and that one of the most fundamental obstacles to economic development was the permanence of traditional beliefs, systems of social organization, and values, the role of education as a mechanism for modernization appeared as a national priority. Education would then provide the necessary socio-cultural conditions for development, which was in turn conceptualized as the progressive evolution toward the stage of modernization or development achieved by the advanced or developed countries. The rapid expansion of the school system was then not only the

necessary condition for the formation of the values and forms of social organization characteristic of the already developed societies, but also the mechanism for the training of the national elite and the skilled human resources that would direct and manage the process of nation-building and the socio-economic development plans.

This high valuation of education was quite evident in the Asian and African nations, given their particular socio-political conjuncture during the decade. At its beginning, these nations faced rapid and profound changes that affected the nature of their traditional cultural systems and patterns of social organization. The emergence of newly independent nations required the imposition of a centralized political unity over the traditional political structures organized around multiple lineages, clans and tribal formations of great cultural and economic heterogeneity, the impersonal and objective bureaucratic institutions necessary for the management of a modern, complex state, required the establishment of interpersonal and inter-group relations that would be different or even antagonistic to those of the extended family or the regional clan or tribal formation.

Thus, for the leaders of the new states the achievement of political consensus and social cohesion were the necessary conditions for nation-building. These conditions could only be rapidly and effectively achieved through the expansion of a common educational experience in which the process of socialization of different social groups into a homogeneous cultural and political system would take place. For these reasons, the expansion and improvement of the educational system became a primordial development objective.

By means of the common socializing experience of public education it was expected to diminish the linguistic heterogeneity, to replace tribalism by nationalism, to achieve political concensus and social support for the economic development plans and for the objectives of modernization of the traditional values and beliefs of the population. The valuation of the economic contribution of education was also an influential factor in building up the political commitment toward educational expansion. The colonial educational systems had been designed to produce an administrative and professional class whose education would greatly reflect the cultural values and ideological preferences of the metropolis. Consequently, higher education was not only quantitatively limited but also oriented toward a general, academic and European education. Thus, a priority task for the new education of the new nations was the formation of competent professional and administrative cadres that would enable the achievement of the development goals, since the absence of highly qualified personnel was a serious obstacle to the efficient functioning of the new states. The commitment to educational expansion also had two other important social objectives; to redistribute in a more equal pattern the educational opportunities between urban and rural areas, and the provision of basic education and work-related skills to the growing mass of rural immigrants to the urban centers.

In 1960 the Addis Ababa Conference, first in a series of Regional Education Conferences, identified the achievement of universal, free, and compulsory primary education by 1980 as the educational priority goal for the African nations. Similarly, it was proposed to

expand educational coverage at the secondary level in order to enroll 30% of the children completing the primary education course, and at the higher education level to enroll 20% of the students completing the secondary education course. Table 2 indicates the enrollment targets for higher education during the 1965-1980 period; 418,000 new higher education students, or 3.7% of the relevant age-group population will be enrolled in 1980 if these projections are accomplished. Nowhere could the African valuation of higher education be better expressed than in the official conclusions of the 1962 Tananarive Conference. These conclusions read as follows:

> In addition to its traditional functions and obligations to teach and to advance knowledge through research, the role of higher education in the social, cultural and economic development of Africa must be:
>
> 1. To maintain adherence and loyalty to world academic standards.
> 2. To ensure the unification of Africa.
> 3. To encourage elucidation of and appreciation for African culture and heritage and to dispel misconceptions of Africa, through research and teaching of African studies.
> 4. To develop completely the human resources for meeting manpower needs.
> 5. To train the "whole man" for nation building.
> 6. To evolve over the years a truly African pattern of higher learning dedicated to Africa and its people yet promoting a bond of kinship to the larger human society.[8]

Also in the Asian continent the expansion of schooling during the 1950s served an important function of social integration. The independence of India revealed the importance of educational development for the achievement of the national goals of political unity, modernization, social justice and economic development. In India, as well as in the

TABLE 2

POPULATION ESTIMATES AND ENROLLMENT TARGETS IN HIGHER EDUCATION, MIDDLE AND NORTH AFRICA, 1965-80

	1965	1970	1975	1980
Middle Africa				
Estimated total population (millions)	188	209	234	264
Estimated population in relevant age-groups[1] (millions)	13.2	14.5	16.2	18.2
Estimated total enrollment (thousands)	46	80	144	274
Enrollment as percentage of relevant age-group population	0.35	0.55	0.89	1.51
North Africa				
Estimated total population (millions)	61	69	78	89
Estimated population in relevant age-groups[1] (millions)	4.3	4.8	5.4	6.2
Estimated total enrollment (thousands)	176	235	300	365
Enrollment as percentage of relevant age-group population	4.1	4.9	5.6	5.9

[1]Taken as 80 per cent of the population aged 20-24 years inclusive.

Source: Unesco, op. cit., p. 22, Table 1.

other South Asian countries such as Pakistan and Sri Lanka, the majority of the population lived at the beginning of the decade in small rural villages organized around rigid systems of social hierarchies, such as castes, which in turn corresponded to the highly uneven social relations of production, and reinforced them over time. Thus, the rigidly ascriptive social order kept most of the population under social relations of exploitation and submission which were strengthened by spiritualist values and profound ignorance among the population. The process of uneven development, characteristic of the colonial economy, had generated deep economic, political and cultural differences between the small and relatively affluent urban areas and the impoverished countryside where most of the population lived (82% of India's population, for instance). Urban areas were the center of the incipient industrialization process and so provided the best employment opportunities in the economy. Also, the best social services, education, health, etc., were much more available in the cities than in rural areas. In the former there were many possibilities of social mobility and personal improvement through merit and hard work, objective and legal personal relations replaced arbitrary and ascriptive systems of social bondage. The rapid growth of the population and the concomitant pressure on the scarce land available were also important factors in the rapid process of urbanization that began to take place during the decade.

As a response to these and other urgent social problems derived from the nature of socio-economic development taking place in the region, the respective governments organized several regional conferences

on Educational Development in which specific national educational goals were identified, such as enrollment rates for each educational level, percentage of national expenditures allocated to the education sector, and so forth. In general it was emphasized in the region the expansion of schooling at the secondary and tertiary levels and the development of scientific and technical training in both levels. The common objective was the achievement of universal and free elementary education by 1980. Each nation, in turn, developed educational plans appropriate to its development needs and priorities. In India, for example, the Five Year Plans were systematic efforts in educational planning that provided specific enrollment targets for each educational level and speciality.

The Five Year Plans also addressed themselves to the solution of the profound educational inequalities existing between men and women, between social groups and castes, and between urban and rural areas. At the beginning of the 1960s in India it was estimated that urban literacy rates were 50% for males and 25% for females, in comparison to literacy rates in rural areas of 24% for males and 5% for females. In Pakistan, literacy rates for both sexes in urban areas was 35.8% and less than half that (16.16%) in the countryside.[9]

Thus, at the end of the decade the main countries in South Asia were fully committed in a large and costly effort toward the expansion and modernization of their educational systems. To education a great economic value was attributed as generator of the skills and knowledge necessary for production goals, and a political value as the common experience through which the integration of different religions,

languages and cultures would center around a unique nationality. In addition, education was considered to perform a crucial role in social change through its modernization of traditional systems of values, and its modification of the rigid pattern of social stratification and sexual division of labor. It seems appropriate to quote at this point the official perception of the role of education in development, as expressed in India's Third Development Plan (1961):

> Education is the most important single factor in achieving rapid development and technological progress and in creating a social order founded on the values of freedom, social justice and equal opportunity. Developments of the past decade have created a momentum for economic growth. Yet there are large deficiencies in the sphere of education, which must be removed speedily if progress is to be sustained and enduring.[10]

In Latin America, the process of educational expansion that had begun during the 1940s also had as ideological support the positive economic, political and cultural valuation on the role of schooling in national development. The peculiar ideological emphasis in Latin America was centered around the idea of equalizing and democratizing the popular access to educational opportunities. The increase in social expectations among growing numbers of people had led to a rapid growth of the social demand for schooling, mainly in urban areas which received the large rural exodus characteristic of the decade. This rapid increase in the social demand for education did not receive an adequate response in the existing educational structure, characterized by its qualitative scarcity, its concentration of educational opportunities in urban areas, and at the secondary and higher education levels, its academic, rigid and largely irrelevant content areas, and its lack

of correspondence with production needs. In addition, the rapid growth of the school age population made more visible the inadequacy and inequality of the existing educational systems, and thus helped to increase the profound social conflicts arising in the region.

Faced with this problematic, a systematic effort in educational planning was initiated by the region's governments. An important objective of this effort was the integration of educational development goals with the general programs of social and economic development in each nation. To this effect the expected rates of growth of each economic sector were estimated and the required quantity and quality of manpower projected. These projections became the basis for educational policy regarding the differential enrollment growth rates for each educational level, for the allocation of resources, training of teachers, and so forth.[11] The translation of manpower requirements into educational equivalents determined then the pattern of growth of the educational system. Thus emerged the educational policy favoring the expansion of the secondary and higher education levels, often at the expense of primary education and literacy programs, intended to form the necessary technical and administrative personnel for the management of the state and of the socio-economic development programs. Manpower forecasting became the parameter of educational development, and generated large educational inequalities in its process of forecasting manpower needs for the dominant sector of the economy. The preferential expansion of the upper levels of schooling was justified by means of the large expected social returns to investments in those educational levels. Social returns measured in terms of the expected

increased productivity and efficiency of the industrial labor force, its higher income, and the general ensuing stimulation of the economy. The greater expected level of economic development would then facilitate the expansion of the basic levels of schooling for the majority of the population. Redistribution after growth and accumulation was the predominant economic development policy in the region, and the expansion of the educational system closely corresponded with this model. The best possible contribution of education to development would be measured in terms of its contribution to the leading, dominant sector of the economy, from which the possibilities of future development would be generated.[12]

The political commitment of underdeveloped countries toward the expansion of their educational systems, and some of its ideological expressions, have been briefly described so far. The result of this veritable "educational explosion" have been shown in Table 1. This commitment was to continue throughout the 1960s and was formalized in several International Conferences on Education. In Latin America, the 1963 Conference of Ministers of Education, held in Santiago de Chile, agreed on an ambitious educational development plan that aimed at the achievement of universal primary schooling by 1965 for the most developed nations of the region and by 1970 for the nations with lower relative levels for development.[13] Table 3 indicates the enrollment rates obtained in 1955 and 1960, as well as the objectives proposed for 1965 and 1970.

Throughout the world the rapid rates of enrollment growth continued during the 1960s, although with a significant decline after

TABLE 3

ENROLLMENT RATES IN LATIN AMERICA

	Actual Rates		Objectives of Santiago Plan for the region	
	1955	1960	1965	1970
Primary	64	78	91	100
Secondary	10	15	22	34
Higher	2	3.1	3.4	4.0

Source: Th. La Belle, (ed.), Education and Development in Latin America (UCLA Press, 1972), Table 1, p. 46.

1965. In effect, the average annual rate of growth of enrollments in the three educational levels diminished from 9.4% during the 1960-1965 period, to 6.9% between 1965 and 1970. In spite of this slower rate of growth, the aggregate rates of expansion of schooling between 1950 and 1970 in underdeveloped countries were of great magnitude. For primary, secondary and tertiary education levels these rates were 211%, 465%, and 511%, respectively. See Table 4. Among the underdeveloped regions Latin America sustained the steadiest rate of growth in educational enrollments during the decade, and after 1965 kept the fastest expansion rate; between 1965-1970 it had a rate of growth of enrollments of 6.1%, followed by Africa with 5.2%. The variation in rates of growth between the first and the second halfs of the decade was only 0.2% in Latin America, compared to 0.7% and over, registered in other regions of the world. The total population in school increased 2.48 millions during the decade, representing a total increase of 82.1%. This increase made it possible in Latin America to duplicate the annual rate of growth of the schooled population (6.1%) over that of the school-age population (3.1%).[14]

This gigantic educational expansion was made possible by the impressive economic effort and political commitment to expand all levels of schooling in underdeveloped countries. This effort and commitment are clearly reflected in the escalating increase of educational expenditures during the past decade. According to the World Bank: "In 62 developing countries for which recent data are available, the median government spending on education is above 18% of total public expenditure, and the number of countries spending above 20% is increasing.

TABLE 4

FIRST, SECOND, AND THIRD LEVEL STUDENT ENROLLMENTS AND ANNUAL INCREASES IN DEVELOPING COUNTRIES

Levels	1950 Students (millions)	1950-60 Annual % Increase	1960 Students (millions)	1960-65 Annual % Increase	1965 Students (millions)	1965-70 Annual % Increase	1970 Students (millions)	1950-1970 Aggregate Increase %
First	64.7	+ 6.4	118.9	+ 6.0	159.6	+ 4.8	201.4	+ 211
Second	7.5	+ 9.3	18.2	+ 9.9	29.3	+ 7.6	42.4	+ 465
Third	0.9	+ 8.9	2.1	+12.4	3.7	+ 8.4	5.5	+ 511

Source: World Bank, "Education," op. cit., p. 13.

The median public expenditure in education is about 4% of GNP. Again, there is a significant increase in the number of countries allocating 5% or more of their GNP to education."[15] See Table 5. However, these figures on global increases in educational expenditures must be disaggregated by GNP per capita in order to visualize the progressing educational inequality throughout the world. As it is shown in Tables 5 and 6, those countries with relative higher levels of GNP per capita have increased their expenditures per capita of population/pupil, several times that of the poorer countries. The ratio of expenditures per pupil between the richest countries (GNP per capita of US $1,500 and over) and the poorest countries (GNP per capita up to US $120) has increased from 21:1 in 1960 to 35:1 in 1970.

One of the most important factors in this process of unequal educational development throughout the world is the greater amount of resources available for the educational sector as GNP per capita increases. Table 7 indicates that from 1960 to 1970 the growth on public educational expenditures in rich nations was 121%, but only 13% in the poorest nations, or a ratio of 9:1. While in 1960 the amount of educational expenditures in rich countries was 21 times that of the poorest countries, by 1970 it had increased to 42 times. Similarly, the richest nations spend twice as much in education per student than those nations in the next lower level of income per capita, this difference increasing dramatically as the GNP per capita diminishes.

However, it is important to note that these large observed differences in the total amount of public expenditures per student do not weight the large differences between countries regarding the

TABLE 5

PUBLIC EXPENDITURE ON EDUCATION AS A PERCENTAGE OF THE BUDGET AND GNP

Countries by per capita GNP	1960		1965		1970	
	Budget	GNP	Budget	GNP	Budget	GNP
I. Up to $120	6.7	1.8	9.6	2.3	13.2	2.9
(No. of countries)	(5)	(6)	(12)	(11)	(7)	(6)
II. $121-$250	20.0	3.6	21.8	3.2	18.9	3.8
(No. of countries)	(3)	(10)	(14)	(17)	(7)	(7)
III. $251-$750	15.3	2.3	14.6	2.9	13.5	3.0
(No. of countries)	(8)	(17)	(15)	(20)	(15)	(13)
IV. $751-$1,500	6.1	2.1	8.3	2.2	10.1	3.1
(No. of countries)	(2)	(3)	(5)	(5)	(5)	(8)
V. Over $1,500	12.9	3.8	19.5	5.5	17.8	5.8
(No. of countries)	(4)	(14)	(14)	(14)	(10)	(12)

Source: World Bank, op. cit., p. 72, Annex. 9.

TABLE 6

PUBLIC EDUCATION EXPENDITURES PER CAPITA
OF POPULATION/PUPIL
(in U.S. dollars, current prices)

Countries by per capita GNP	1960		1965		1970	
	Population	Pupil	Population	Pupil	Population	Pupil
I. Up to $120	1	16	2	21	2	18
II. $121-$250	5	33	6	40	9	49
III. $251-$750	7	43	9	58	10	57
IV. $751-$1,500	17	114	29	164	34	179
V. Over $1,500	67	338	113	504	168	749

Source: Based on data compiled by Unesco. Taken from: World Bank, op. cit., p. 72, Annex. 9.

TABLE 7

PUBLIC EXPENDITURES IN EDUCATION PER STUDENT
(in U.S. dollars, current prices, 1974)

Countries by GNP per capita	1960	1965	1970	Net % Change
I. Up to $120	16	21	18	+ 13%
II. $121-$250	33	40	49	+ 49%
III. $251-$750	43	58	57	+ 33%
IV. $751-$1,500	114	165	179	+ 57%
V. Over $1,500	338	504	749	+121%
Group V as a multiple of Group I	21	24	42	

Source: World Bank, op. cit., p. 20, Table 4.

percentual contribution to the total expenditure per student, of teachers' salaries and construction costs. The data presented in Table 7 should be seen as global, not as precise and reliable indicators of the degree of uneven educational development between nations. This could be more adequqtely measured by the differential school enrollment rates for each relevant age-group, according to the level of per capita GNP. As it is shown in Table 8, as the level of per capita GNP increases so does the corresponding school-age enrollment ratio for each educational level. In 1970, the countries with a per capita GNP over US $1,500 had enrollment ratios of 100%, 83%, and 30.2%, at the first, second and tertiary educational level respectively, while the poorest countries (per capita GNP up to US $120) had enrollment ratios of 31%, 5% and 0.4%. Even though the differences in primary education enrollment ratios tend to diminish over time due to the achievement of universal primary education in the developed countries, at the secondary and higher education level the differences in enrollment rates have greatly increased during the period in mention. While the richest countries have increased in 35 and 13.2 percentage points their school coverage at secondary and higher education levels respectively, the poorest countries have increased their coverage in those two educational levels in only 1 and 0.1 percentage points. The countries at intermediate levels of GNP per capita had an average increase in percentage points of enrollment ratios of 12.2 and 3.4 for secondary and higher education. Thus, the educational gap tends to widen over time, especially at the secondary and higher education levels, in spite of the increasing educational expenditures throughout the underdeveloped world.

TABLE 8

SCHOOL ENROLLMENT RATIOS

Per capita GNP	Number of countries	population in 1970 (millions)	Enrollment Ratios[1] First Level 1960	First Level 1965	First Level 1970	Second Level 1960	Second Level 1965	Second Level 1970	Third Level 1960	Third Level 1965	Third Level 1970
I. Up to $120 (excluding India, Indonesia, Pakistan, Bangladesh)	25	168	34	39	43 (31)	4	5	5	0.3	0.3	0.4
India, Indonesia, Pakistan, Bangladesh	4	802	43	56	71 (63)	9	11	18	1.7	2.6	4.3
II. $121-250	23	287	67	79	83 (68)	9	14	19	2.1	3.0	5.6
III. $251-750	38	433	73	83	97 (77)	11	17	25	1.9	3.3	5.3
IV. $751-1,500	9	112	90	93	97 (80)	33	44	49	6.2	8.4	10.5
V. Over $1,500	24	623	100	100	100	58	65	83	17.0	23.7	30.2

[1]The enrollment ratios have been obtained by dividing the total enrollment at each level with the appropriate age group. These "gross" enrollment ratios are inflated by over-age students. For 1970, it has been possible to exclude the over-age students and estimate "net" enrollment ratios at the first level. The net ratios are indicated in parentheses and show that the over-age students form 10-20% of the total student body at the first level.

Source: World Bank, "Education," op. cit., p. 17, Table 2.

In Latin America, for instance, the percentage of GNP allocated to the educational sector increased from 2.8% to 3.7% during the decade, the range being formed by Haiti with only 1.4% and Costa Rica with 6.7%. In 1969 eleven countries spent in their educational sector over 4% of their GNP.[16] In relation to the national budget, 65% of the region's countries allocated to education more than the average for the region; 16.9% in 1969. Three countries spent in the same year between 31.7% and 35% of their national budgets to the educational sector. The average annual rate of increase of educational expenditures in the region was 10.9%, however, in spite of this gigantic economic effort, in 1970 the total amount of educational expenditures in Latin America was about one twelfth (1/12) of similar expenditures in the United States.[17]

The Results in the 1970s

From the analysis of the data presented so far, two significant characteristics of the international educational problematic can be inferred. The first is the situation of profound educational inequality between the non-communist underdeveloped countries and the rich, industrialized, developed capitalist countries, and between the underdeveloped countries themselves according to their relative degree of development as measured by their GNP per capita. The second trend refers to the pattern of unequal educational development within the underdeveloped countries, in which the educational pyramid tends to narrow at the base and to expand at the upper educational levels, in

spite of low primary schooling enrollment rates, large illiteracy rates, and the pressing need for basic, functional education for the majority of the population.

In reference to the first characteristic, it is important to emphasize the fact that the general diminution of primary education enrollment rates differentials between underdeveloped and developed countries during the 1960s is due to the latter's achievement of the upper bound in terms of primary schooling expansion, and to the gigantic economic effort of the underdeveloped countries in financing the quantitative growth of primary education facilities. (See Tables 5 and 6.) However, this growth not only has been insufficient relative to the increase in school-age population but also did not bring about any significant qualitative improvement in the aims, structure, or process of education. In fact, the trend during the 1970s indicates a progressive deterioration of the basic levels of education in the underdeveloped countries and consequently, the widening of the educational gap between these and the developed countries.

In effect, school enrollment projections for 1980 and 1985 in underdeveloped countries indicate that the total number of out-of-school students in the 5-14 age group will increase from 269 million in 1970 to 330 million in 1980, to 375 million in 1985, a net increase of 106 million during that period. In the poorest countries, those with a GNP per capita of $250 or less, the percentage of the 5-14 age group out-of-school will remain approximately the same throughout 1985; from 56% in 1970 to 52% in 1980, and 52% in 1985. See Table 9. Moreover, the number of 15-44 year old illiterates will increase from 355 to 405

TABLE 9

PROJECTIONS OF SCHOOL ENROLLMENTS IN DEVELOPING COUNTRIES
(in millions)

	1970	1975	1980	1985
5-14 age group population in all developing countries	481	550	630	725
Of whom in-school	212	260	300	350
Of whom out-of-school	269	290	330	375
5-14 age group population in Group I and II countries	340	390	445	510
Of whom in-school	141	170	200	230
Of whom out-of-school	199	220	245	280

Source: World Bank, op. cit., p. 28. Table 5.

million unless a radical transformation in the objectives and structure of schooling and in the scope of adult education programs takes place. The deepening educational inequality throughout the world not only is quite visible at the basic levels of education but also at the secondary and higher levels. According to the World Bank: "Despite the enrollment increases at all levels of education during the 1960s in developing countries, the gap between the poorest and the richest countries has increased at the secondary and tertiary levels. Twenty five of the poorest countries have increased their enrollments at those levels by 1.0 and 0.1 percentage points, respectively, during the decade. A middle group, including the populous nations of India, Indonesia, Bangladesh and Pakistan, as well as the countries in the $121-$750 bracket, have increased their enrollments by approximately 11 and 14 percentage points, while the most affluent countries have increased their enrollments by 25 and 13 percentage points."[18] (See Table 8.)

But the quantitative differences do not fully portray the extent of inequality, which is expressed too in terms of the quality of the educational experience and the efficiency of the educational process. To the inexistence or poor quality of educational materials and aids must be added the high student-teacher ratios, the overcrowding of classrooms, the low qualifications of teachers, and the poor health of students. As analyzed by the World Bank: "Malnutrition and related illnesses affect student performance by reducing the child's motivation and his ability to concentrate and learn. In a study carried out in four Latin American countries, it was found that children miss more than 50 days of school a year (25 to 30% of the scheduled school days)

because of illnesses which may be related to malnutrition, compared with an average of 10 days or less per year in the developed countries."[19]

These factors, as well as those related to the perceived irrelevance of the educational content and to the economic value of children's labor, account for the high dropout and repetition rates at all educational levels. "In many countries it takes more than 10 years to produce one graduate of a 5-6 year primary cycle, and about one-fourth of the education budget is spent on students who drop out in the first three grades."[20] Table 10 provides comparative data on the wastage of educational systems between the developed and underdeveloped nations. Notice the large differences between the median dropout rate for primary education in the poorest countries (up to $120 GNP per capita) and the corresponding rate for countries with GNP per capita of $1500 and over.

The aforementioned data on the increase of illiteracy and on educational wastage in underdeveloped countries led to the conclusion that the objectives set out for the U.N. Second Development Decade (1970-1980) had become impossible to achieve. For instance, the achievement of universal, free and compulsory elementary education by 1980 is more unrealistic today in most countries than it was a decade ago. The total number of illiterates in the age group above 15 years old will increase substantially by the end of the decade. The rapid rates of growth of the population: 3.0% for the 5-9 age group between 1970 and 1975, only indicate a progressive deterioration of the educational situation on underdeveloped countries since the annual rates of

TABLE 10

EDUCATIONAL WASTAGE[1]

	Percentage of Dropouts		
	Lowest	Median	Highest
I. Estimated percentage of dropouts in cohorts entering primary education around 1960			
A. Countries by per capita GNP			
I - Up to $120	27.9	57.5	81.3
II - $121-250	13.2	49.0	75.5
III - $251-750	8.8	45.1	74.7
IV - $751-$1,500	6.7	45.7	60.6
V - Over $1,500	0.7	9.7	56.8
B. Countries in Major Regions			
Africa	26.2	54.0	81.3
Latin America	33.1	61.6	74.7
Asia	0.7	20.2	64.0
Europe	0.7	18.3	48.3
II. Estimated percentage of dropouts in cohorts entering senior secondary education around 1960			
A. Countries by per capita GNP			
I - Up to $120	5.0	43.2	47.9
II - $121-250	5.2	46.0	62.0
III - $251-750	5.0	28.3	69.1
IV - $751-1,500	11.4	13.9	23.4
V - Over $1,500	4.8	15.0	22.1
B. Countries in Major Regions			
Africa	7.5	41.9	61.4
Latin America	8.5	18.5	28.3
Asia	4.8	18.1	57.8
Europe	8.2	11.4	21.8

[1]The survey covered the educational systems of 58 countries for the years 1960-61 and 1967-68.

Source: Based on data compiled by Unesco. Taken from: World Bank, p. 38.

growth for primary education have decreased from 4.4% during the 1965-1970 period to 2.8% during 1970-1971. Moreover, even in the absence of significant population growth, the need to improve the quality of elementary education and the effects of economic growth on the average salary of teachers and other recurrent educational costs will involve a substantial increase in costs, and consequently a reduction in the amount of resources available for the expansion of educational facilities and enrollments. Indeed, according to UNESCO's estimates, ". . . in all developing countries, whatever the demographic projections, recurrent costs of first-level education form the predominant part of total costs (from 85.7% to 94.7%)."[21]

The large size of the school-age population as a proportion of the total population is an additional factor indicating the much greater effort necessary in developing than in developed countries in order to expand their educational systems. While in an industrialized country such as France the 5-14 age group is 29% relative to the 15-59 working-age population, in Colombia the same proportion is 57.7%, 58.1% in Tunisia, and 52.2% in Tanzania.[22]

An interesting simulation of educational development problems was conducted by the World Bank constructing a "hypothetical" underdeveloped country whose economic and demographic characteristics correspond either to the average or the median characteristics of 64 underdeveloped countries. This "hypothetical" country, which according to the World Bank resembles a "typical" underdeveloped country, has a population of 5 million, with school enrollment ratios assumed to be 50% of the appropriate age group in primary education, 10% in secondary

education, and 2% in higher education. This country has a GNP per capita of US $100. Twenty four percent (24%) of the GNP are public revenues, and 4% of the GNP, or 18% of public revenues, are dedicated to public education. Finally, this "typical" country has a population growth of 2.5% per year and the GNP growth is 5.0% per year. The forementioned economic, demographic, and educational characteristics for this "typical" country correspond to those that are average or median for underdeveloped countries.[23] The Ten Year Education Plan of this country intends to raise primary enrollment rates from 50% in 1974 to 90% in 1983, secondary enrollment rates from 10% to 27%, and higher education enrollments from 1.1% to 4.2% during the same period. The attainment of these modest enrollment rates, modest if compared with the standards of the developed nations, would pose an impossible financial burden on this "typical" country's economy despite an increase of the GNP of 75% and of the GNP per capita of 38% during the period. In effect, the aggregate recurrent and capital costs of the intended educational expansion would amount to 15% of the GNP and to 62% of all public revenues by the end of the ten year period. It does not seem to be economically feasible nor politically possible to give such an overriding economic priority to the educational sector in any country, be it rich or poor. Any proportion over 20-25% of public expenditures allocated to the educational sector will probably impinge seriously upon the urgent and also basic needs of other development sectors such as health, nutrition, energy, communications, etc., and will limit the future growth possibilities of the national income, generating thus a process of economic entropy.

An analysis of the factors influencing expenditures in education; unit costs, enrollment rates, and the proportion of the school-age population in relation to the total population (demographic burden factor) indicate that in comparison with OECD countries, the low elementary school enrollment rates in underdeveloped countries can be attributed to their larger demographic burden factor. However, low enrollment rates in secondary and higher education seem to be determined by high unit costs relative to GNP per capita. Table 11 shows underdeveloped countries as having a demographic burden factor twice as large as that of the OECD countries, and with similar unit cost GNP per capita, but with significantly lower enrollment rates at the primary education level. At the secondary and higher education levels the demographic burden factor is roughly the same but unit costs per capita GNP are several times higher in underdeveloped than in OECD countries.[24] From a larger world-wide perspective, Table 12 offers the ratio of expenditures by educational level to GNP, enrollment ratios, demographic burden factors and unit costs per capita GNP of a "typical" country from each of eight major regions of the world, circa 1973.

The educational scenario in the underdeveloped world during the 1980s can thus be clearly depicted in terms of the expected increase of illiteracy. In 1985 there will be an estimated 376 million of the 5-14 age group out-of-school in all developing countries, a net increase of 56 million since 1970. This increase in the out-of-school age group and this high percentage of primary education dropouts, contribute to the increase in the total number of adult illiterates. This number will reach 865 million during the next decade.[25] But the growth of

TABLE 11

EDUCATIONAL EXPENDITURES OF TYPICAL OECD AND DEVELOPING COUNTRIES

	Ratio of Expenditures by Educational Level to GNP			
	Total	Primary	Secondary	Higher
OECD	4.40	1.68	1.79	.71
Developing Countries	3.47	1.67	1.05	.58

	Percent Distribution of Educational Budgets by Level		
	Primary	Secondary	Higher
OECD	38.1	40.7	16.2
Developing Countries	48.1	30.2	16.7

	Factors Influencing Expenditures		
	Unit Cost GNP Per Capita	Enrollment Ratio	Demographic Burden
Primary Education			
OECD	16	97.5	10
Developing Countries	15	53	21
Secondary Education			
OECD	21	70	12
Developing Countries	52	13	15
Higher Education			
OECD	55	11.8	11
Developing Countries	362	1.48	11

Source: Table XXII, p. 81, "Patterns of Educational Expenditures," World Bank Staff Working Paper No. 246 (Nov. 1976), Washington. Prepared by Manuel Zymmelman.

TABLE 12

RATIO OF EXPENDITURES BY EDUCATIONAL LEVEL TO GNP, ENROLLMENT RATIOS, DEMOGRAPHIC BURDEN FACTOR AND UNIT COSTS GNP PER CAPITA OF A "TYPICAL" COUNTRY OF EACH OF EIGHT MAJOR REGIONS OF THE WORLD. CIRCA 1973

	Expenditures/GNP				Enrollment Ratio			Demographic Burden Factor			Unit Cost GNP Per Capita		
	Total	Prim.	Second.	Higher	Prim.	Second.	Higher	Prim.	Second.	Higher	Prim.	Second.	Higher
Eastern Africa	3.92	2.04	1.13	.59	46	5.94	.51	21	15	12	20	124	927
Western Africa	3.51	1.64	1.20	.49	37.85	4.99	.33	18	17	10	125	142	1405
Asia	3.04	1.33	.93	.56	53.66	25.14	2.15	21	13	13	11	27	205
North Africa & Middle East	4.24	1.71	1.54	.84	57.99	20.18	2.20	19	16	12	15	47	306
Latin America & Caribbean	3.14	1.63	.84	.55	67.81	24.18	5.34	22	15	8.0	11	22	121
South America	3.63	1.65	.99	.86	76.64	26.35	8.53	21	15	8.0	10	24	119
Central America & Caribbean	2.79	1.62	.73	.38	62.60	22.52	3.61	23	15	8.0	11	21	122
OECD Countries	4.40	1.68	1.79	.71	97.50	70.34	11.82	10	12	11.0	16	21	55

Source: Data computed from Table I-1 to VIII-4 and Tables XXI-1 to XXI-3, "Patterns of Educational Expenditures," World Bank Staff Working Paper No. 246 (Nov. 1976). Prepared by Manuel Zymmelman.

illiteracy is just one aspect of this educational scenario, which would not be complete without referring to the "overexpansion" of the secondary and higher education levels. The end result is the creation of a structure of "educational dualism" by which a minority of the population (mostly the urban, middle and upwardly mobile lower strata) receive a disproportionate amount of educational opportunities while these become more scarce and limited for the vast majority of the population. This educational dualism is replicated at the international level where a minority of the world's population, concentrated in a few countries, attain the highest levels of the best quality education while this becomes a growing impossibility for the majority of the people of the world.

The "world educational crisis" has deepened the educational inequality at the basic levels, affecting the vast majority of the population in underdeveloped countries. A quite different situation prevails at the secondary and higher education levels, especially in urban areas. During the last two decades the rates of growth for secondary and higher education were twice those of primary education. In Latin America, during the 1960s, higher education had an average annual rate of growth of 10.9%, followed by secondary education with 10-7%, and primary education with 5.2%.[26] In Africa, the growth rate for higher education was 19.8% from 1970 to 1971; in comparison, primary education enrollments only grew 1.6% during the same period.[27] The proposed future projections such as those identified at the 1970 Regional Unesco Conference (Educational Objectives and Needs for the 1970s) tend to emphasize the rapid growth of schooling at the secondary

and tertiary levels. The expected annual rate of growth of higher education enrollments during the decade is 13.1%, compared with 4.9% for primary enrollments. In Colombia, the expected rates of growth of enrollments at each educational level during the 1970-1980 decade confirm this trend:

Pre-School:	71.5%
Primary:	63.2%
Secondary:	160.1%
Higher:	277.7%

These different rates of growth have led in Colombia to an increase of approximately fourteen times (14) in university level enrollment during the last two decades. Similarly, secondary education enrollments have increased eight (8) times during the same period.[28]

Table 13 indicates the evolution of enrollments in Latin America for the three educational levels during the past decade. The rates of growth of enrollments at the secondary and higher education levels were twice those of the elementary level. As a result, at the secondary and higher levels the annual rate of growth more than trebled that of the respective school age population.[29]

The shape of the educational pyramid suffered important modifications as a result of the different rates of growth of enrollments at the three levels. See Table 14. At the end of the decade the percentage participation of higher and secondary enrollments had increased considerable relative to that of primary enrollments. In effect, the reduction in the percentage participation of primary enrollments in the

TABLE 13

EVOLUTION OF ENROLLMENTS BY LEVELS IN LATIN AMERICA
1960-1970

Level	Rate of Growth 1960-65	Rate of Growth 1965-70	Growth Index (1960=100)
Primary	5.4	5.0	165.9
Secondary, Total	11.3	10.2	278.7
- General	11.7	11.2	293.3
- Technical	10.5	9.2	254.9
- Normal	11.5	7.2	243.3
Higher	9.5	12.4	282.8
Total:	96.3	6.1	

Source: UNESCO, "Evolucion Reciente . . .," p. 13.

TABLE 14

LATIN AMERICA, PERCENTAGE PARTICIPATION OF LEVELS OF
SCHOOLING IN TOTAL ENROLLMENTS
1960-1965-1970

Level	1960	1965	1970
Primary	85.7	82.1	78.0
Secondary	12.5	15.7	19.2
Higher	1.8	2.2	2.8

Source: UNESCO, "Evolucion Reciente . . .," p. 16.

total number of enrollments (from 85.7% in 1960 to 78.0% in 1970) does not indicate the achievement of primary education in the region but the greater political priority given to the expansion of secondary and tertiary levels at the expense of the development of primary education, adult education, literacy programs, and other basic educational opportunities. In spite of the great economic effort evidenced in most countries in the financing of their educational expansion, the available resources continue to be limited and scarce, which means that the larger the relative expansion of any given educational level over others the more limited the latter will be in its possibilities for expansion and improvement. The more so, the higher the unit costs of secondary and higher education. These higher costs significantly reduce the cost-effectiveness of educational expanditures in general, if effectiveness is measured in terms of numbers of graduates at each educational level. Moreover, higher unit costs at higher levels of education imply a highly uneven distribution of educational resources in relation to the size of the student population at each educational level. In Colombia, for example, in 1977 primary education received 34.3% of the educational budget, with 72% of the total enrollments in the system.[30]

These data allow us to identify a clearly defined pattern of uneven development of the educational structure in most of the underdeveloped countries of the world. Uneven development defined in the sense of the privileged expansion of some educational levels over others, within a context of large educational development needs at all levels and of scarce economic resources available. While the quanti-

tative and qualitative limitations prevailing at the basic levels of schooling, adult education, etc., seem to be worsening over time, an increasing share of the scarce resources available is allocated toward the expansion and improvement of the higher levels of schooling. In other words, while basic educational opportunities for the vast majority of the population remain limited and poor in quality, for a small minority, mostly an urban middle class population, the educational opportunities continue to improve and increase significantly and disproportionately to the size of that population. The educational pyramid tends to narrow at the base relative to its expansion at the upper level. It had been previously mentioned that the increase in the 5-14 years of age school population out-of-school will increase from 220 million in 1975 to 280 million in 1985. Similarly, the expected increase in the number of adult illiterates will lead to a total number of 865 million in 1985. In comparison, the expected annual rates of growth for higher education are twice as large as those of elementary schooling. Another important indicator of educational inequality is the distribution of completed educational facilities in urban and rural areas. As indicated in Table 15, the percentage of completed rural schools over total rural schools is significantly lower than the same percentage in urban areas. Moreover, the educational effect of this quantitative limitation is compounded by the very low efficiency of primary education in rural areas. In Colombia, for example, only 3.7% of entrants successfully complete primary education in rural schools while in urban schools the percentage is 47.3%. As indicated in Table 16, the number of years necessary to produce a successful primary

TABLE 15

AVAILABILITY OF COMPLETE PRIMARY SCHOOLS IN URBAN AND RURAL AREAS
Percentage of the Total Number of Primary Schools in Each Category (Rural and Urban) Which Offer the Complete Number of Grades

	Number of countries	Complete urban schools as % of total urban schools	Complete rural schools as % of total rural schools
(a) Countries by per capita GNP			
I- Up to $120 (excluding India)	9	53	36
- India		57	49
II- $121-250	7	72	32
III- $251-750	16	77	62
IV- $751-1,500	2	89	56
V- Over $1,500	6	100	99
(b) By major regions			
Africa	16	79	54
Asia (excluding India)	9	94	66
India		57	49
South and Central America	10	88	34
Europe	5	98	99

Source: Based on data in Unesco Statistical Yearbook, 1972. Taken from World Bank, op. cit., p. 70.

TABLE 16

COMPARISON OF EDUCATION EFFICIENCIES IN URBAN AND RURAL AREAS IN LATIN AMERICA

(a) Successful completers and dropouts in primary education.

	Total Country Successful completers	Urban Successful completers	Rural Successful completers
	as % of entrances		
Colombia	27.3	47.3	3.7
Dominican Republic	30.4	48.1	13.9
Guatemala	25.4	49.6	3.5
Panama	62.3	80.7	45.3
Average percentage completers	39	51	22

(b) Efficiency of primary education.

	Years taken to produce a successful completer				Input/output ratio		
	Ideal	Total country	Rural	Urban	Total country	Rural	Urban
Colombia	5	11	66	8	2.4	13.2	1.7
Dominican Republic	6	14	27	9	2.3	4.5	1.6
Guatemala	6	14	70	10	2.3	11.6	1.6
Panama	6	9	12	8	1.5	1.9	1.2

Source: Based on the UNESCO report, The Statistical Measurement of Educational Wastage, taken from World Bank, op. cit., p. 70.

education completer in rural schools is several times that of urban schools.

In short, "educational dualism" increasingly characterizes the pattern of educational development in most underdeveloped dependent societies. The opportunities for the higher levels of education are concentrated in a few urban areas and serve the needs of a small segment of the population, while the majority, especially in rural areas, present high indices of functional or total illiteracy and low levels of educational attainment in general. Moreover, the high educational achievement levels of the privileged minority could be considered as "overeducation," not only in relation to the median educational level of the majority of the population, but for a more fundamental reason, which is in the first place, the excess supply of highly educated labor in relation to the demand of the labor market, as evidenced by the continuing growth of the "educated unemployment" problem, and secondly, by the realization that in the prevailing technical division of labor; which is determined by the larger social division between Capital and Labor; the actual educational requirements of most productive occupations and even of some professions, are lower or very different from the educational attainment level of the available labor force.

These characteristics of the problem of "overeducation" thus tend to negate the hypotheses by which the privileged and uneven expansion of the relatively higher levels of education respond to the actual demands of the productive system and to the technical function of the higher levels of education.

The historical product of the gigantic educational expansion of

the past two decades is then the social and educational contradiction represented on the one hand by the "overeducation" of the few and the illiteracy of too many. Educational policy makers in the 1960s fully committed increasing amounts of resources to the rapid expansion of educational opportunities. Important contributions to economic development, to social equity, and to political unity and cohesion were attributed to education. The expansion and distribution of educational opportunities was seen as an important mechanism promoting social and political participation and income redistribution. Educational development was considered to be the necessary requirement for socio-economic development, the economic contribution of the human capital of a nation was estimated to be greater than the contribution of physical capital. Educational policy makers began to consider educational expenditures as "investment" in human capital, and since the expected social rates of return to these types of investment were estimated to be higher than those of physical capital, they allocated increasing portions of public revenues to the educational sector. Manpower forecasters attempted to maximize the economic contribution of these investments by projecting manpower needs for the different sectors of the economy. The translation of manpower needs into educational requirements became the favorite method for projection differential growth rates of enrollments.[31]

The optimism and commitment to educational expansion continued unabated until 1965, a year which marks the decline in rates of growth of enrollments that has continued throughout the 1970s. Overeducation and illiteracy illustrate the outcomes of the previous educational "explosion." The increase in absolute numbers of the non-schooled or

functionally illiterate population is to a large extent the antithetical result of the increase in the educated unemployed. However, in spite of the continuing growth of educated unemployment in most underdeveloped societies, the rise in the social demand for education keeps unabated. Social demand that is formed not only by the popular pressure for the expansion and distribution of basic educational opportunities, but primarily by the important political pressure of the urban middle social strata in search of the greater expansion of secondary and higher education opportunities. The educational system has then become the focus where multiple socio-political forces and conflicts converge. The nature of this conflict can be discerned by analyzing the importance attributed by different social groups to the type of education that they demand. This importance is derived from the expected socio-economic value of the credentials that have become the measurable outcome of the educational experience. Consequently, the analysis of the socio-economic determinants of the high value granted to educational credentials is the basic factor in the understanding of the dynamic of the educational problematic in underdeveloped societies.

A Theoretical Interpretation

The failure and the limitations of the educational reform initiated during the 1950s in these societies can then be evaluated from the perspective of two of its fundamental objectives: to contribute to economic development through the expansion and improvement of the educational system, and to diminish social inequality through a better distribution of educational opportunities.

The contribution to economic development expected of the large expenditures in the expansion of schooling was the increased productivity, creativity and technological innovativeness of the labor force, attributed to the educational experience. At the aggregate level, these improved characteristics of the labor force would constitute the "residual" expansion of economic growth, and at the level of each productive unit would constitute the measurable "marginal productivity" of the individual worker.

In addition, an important economic development role of educational expansion was the formation of a highly trained, scientific and managerial personnel, necessary for the implementation of the development plans. In relation to social equality, it was expected that an expansion of educational opportunities for low-income groups in society would produce a more equal distribution of income since it was assumed that there were no racial, sexual or class-based differences in the social and economic benefits accrued to the individual from his/her educational achievement.[32] The nature of these benefits would be determined primarily by the differential economic contribution, measured in terms of marginal productivity, of the different levels of schooling of the labor force. That is to say, wage levels and other types of remuneration of the labor force would be determined by the differential value in the labor market of the levels of development of the human capital of the individual worker.

However, the observed social and economic reality in the 1970s indicates that not only those intended objectives of the educational reform have not been achieved but also that the continuing and deepening

educational inequality between groups and classes in society, and between urban and rural areas, has become a major source of greater social and economic inequality. Paradoxically, the gigantic expansion of schooling during the 1950s has generated over time a greater educational inequality both in absolute terms, as evidenced by the coexistence of an increase in the total number of illiterates and out-of-school population, and of the overeducated; and in relative terms, that is, the different social and economic value of different types and levels of educational credentials as labor market mechanisms of occupational selection and allocation; and consequently, as determinants of income distribution and social status. This phenomenon is possible in the context of a labor market highly differentiated and segmented in terms of wages, working conditions and degree of organizational power and responsibility existing between the different occupational categories created by the prevailing social division between intellectual and manual labor within each productive unit. This intra-organizational segmentation or social division of labor is replicated and reinforced at the macro-social level (inter-organizational segmentation) by large economic, social and organizational differences existing between similar or equivalent occupational categories depending on whether they belong to the labor market of the modern, dominant sector of the economy, or of the subordinate, peripheric sector, or even of the large sector of informal economic activities. This segmentation of the productive structure is, in turn, the result of the larger process of accumulation and concentration of monopoly capital, which through its economic, technological and organizational hegemony, achieves the

control and determination of the pattern of industrial development and of its occupational structure in underdeveloped societies.

Thus, to the extent that the access to the privileged segments of the labor market--those corresponding to the sphere of intellectual labor in the enterprise--becomes a function of the level of educational attainment and of the type of credentials of the labor force (social qualification and distribution role of schooling), these educational credentials are then attributed a high social value as necessary mechanisms for individual social mobility. Consequently, the achievement of the level and type of educational credentials which in a given moment provide the best guarantee of success in the tight competition in the labor market, becomes an important political objective for those social groups and classes (the new small bourgeoisie, according to Poulantzas's analysis of the class structure in modern capitalist society), with the greatest possibilities of social mobility and intergenerational reproduction, which imply their separation from manual labor and their social distribution into intellectual labor via their educational qualifications.[33] The political power of these social groups and classes, expressed in terms of their influence over the educational policies favoring the privileged expansion of the higher levels of credentialling education, and their economic power that allows them to create a large private educational market, become thus a fundamental determinant force of the general pattern and possibilities of educational development.

From this analytical frame of reference it is then necessary to interpret the process and the outcome of the educational expansion of

the past two decades as the result of the interactions between the set of structural economic conditions prevailing in those societies, such as the pattern of dependent industrialization and its corresponding occupational structure, and the role attributed to educational achievement in the process of social and occupational mobility in the aforementioned structure.

As an alternative to the conceptions of education as a medium for the modernization of traditional values and attitudes retarding the development process, as instrument of social cohesion and political unity, and as a condition for social equality and economic development, conceptions that underlined the social, economic and political objectives of the past "educational explosion," this thesis is based on the conception of education as a crucial mechanism for the reproduction of the dominant class structure in underdeveloped societies. Education is thus a social expression whose characteristics are not autonomous nor universal but subordinated to the historically specific needs of reproduction of the dominant social relations of production, which ultimately determine the possibilities and the limits of educational development.

Consequently, the educational distortions and inequalities that are prevalent during the 1970s are analyzed as the outcome of the role of education; more specifically, of the type and level of educational achievement of the labor force; as a mechanism of social division and social control within the context of the basic contradiction between Capital and Labor in society.

Thus, this thesis analyzes the role of educational credentials

in the process of social and occupational stratification along the general parameters of the social division between intellectual and manual labor, in a highly segmented and hierarchical occupational structure, and the ensuing pattern of class alliances and struggles, in the context of underdeveloped societies whose industrialization process has become largely shaped and controlled by monopoly capital investments. This is the general social and economic context which determines, in the words of Bourdieu,[34] the different "strategies of reproduction" through the educational system, of the competing groups and classes in society. In particular, the process of social reproduction through occupational stratification, and the mediating role of educational credentials is analyzed in the context of Latin American countries that have achieved a relatively high degree of industrialization, and which according to currently accepted terminology could be called societies of "industrialized underdevelopment."[35]

The industrialization of these societies has been a relatively recent process, and of rapid expansion. Although the manufacturing sector had expanded considerably during the 1930s and early 40s as a result of the import substitution policies that favored and protected the creation of national enterprises, the rapid expansion and modernization of the manufacturing sector only took place during the post-war period, mostly due to the increasing U.S. investments in that sector. In fact, from 1956 to 1970 the average annual rate of growth of U.S. investments in manufacturing in Latin America was 12.8% and 44% of all direct U.S. investments in the region were in this sector.[36]

The above data is an indication of the rapid expansion of

foreign investments in underdeveloped economies and of the concentration of these investments in their manufacturing sector. In turn, this is the expression of two major economic processes taking place on a world-wide scale. The first is the international expansion of capital accumulated in developed societies by monopolistic corporations, expansion that has accelerated after the last war.[37] The second is the increasing integration of the underdeveloped economies, through investments, trade and transfer of technology, into the international economic order, which is dominated by monopoly capital and by the economic interests of the rich, industrialized, developed countries. The main implications of this world-wide economic integration is that the process and the nature of industrialization in underdeveloped societies becomes shaped and determined, in general terms, by the characteristics of growth and development of the dominant societies, and more in particular, by the needs of international expansion of capital, of new markets and access to sources of raw materials, of the large transnational corporations that have emerged in developed nations as a result of the process of concentration and accumulation of capital in their economies. These monopolistic corporations, through their subsidiaries, enter to dominate and control the manufacturing sector by means of their huge capital resources, advanced technology and managerial skills, and control over international markets.

The main outcome of this economic, organizational and technological domination is, over time, the increasing differentiation and segmentation of the manufacturing sector between a dominant, monopolistic sector of high productivity and profitability, mostly formed by

foreign-owned subsidiaries of transnational corporations, and a subordinate, competitive sector, formed by medium-sized enterprises of national ownership.[38] Lastly emerges the so-called "informal sector" of manufacturing, or the sector of small, self-employment or family enterprises, of very low productivity, rudimentary technology and subsistence income, in which between 40% and 60% of the urban labor force in underdeveloped economies derive their means of subsistence.[39] This segmentation in the productive sector is then the consequence of the total amount, and the capital-intensity, of monopoly capital investments in underdeveloped societies.

The different economic, technological and organizational characteristics of the firms of the monopolistic, competitive and subsistence economic sectors is reflected in the labor market through respectively large differences in wages, working conditions and other organizational characteristics existing between similar occupational categories depending on whether they belong to one or another of the aforementioned segments of the productive structure. This is the inter-organizational or macrosocial segmentation of the labor market which is made possible by the differential productivity and profitability of the economic units, which is in turn derived from their relative degree of monopolistic control, competitiveness or marginality, in relation to the spheres of production and distribution. Thus, it is possible for monopolistic economic units to pay wage levels higher than the average for the rest of the economy since the absolute rate of surplus value appropriated by them is also higher than the average, and consequently their higher level of remuneration of the labor force does not affect their

realization of rates of relative surplus value also higher than the average for the economy at large.[40]

However, even though the labor market segmentation is made possible by the relative economic power of economic units it is not a phenomenon that is determined by the unequal distribution of economic power but in the historically specific, and therefore changing, political strategy of Capital's control over the labor process and the labor force. That is to say, the creation of large social and economic differences among the labor force along the basic social division between intellectual and manual labor, can be interpreted as the political strategy of monopoly capital of creating relations of domination-subordination over the labor process in general. More in particular, this strategy attempts to ensure the organizational loyalty and the efficient productive performance of the segments formed by intellectual labor in order to more effectively perform its role of vigilance and control over manual labor in the enterprise.[41] This strategy facilitates the social and political divisions of the labor force through the creation of large inequalities in its objective conditions of existence. However, the specific application of this strategy depends on the general situation of unemployment and underemployment in the economy, on the existing local labor legislation, on the degree of industrial concentration, and on the degree of political organization and consciousness of the labor force in general.

The inter-organizational segmentation of the labor market is only the macro social reflection and reinforcement of a more fundamental segmentation of the labor force and the productive process derived from

the basic contradictions between Capital and Labor. The fundamental social and political conflicts derived from the social division and struggle between those two main actors of history, require from Capital the formation of specific strategies of control and mediation over the historical forms of struggle presented by Labor, so that they ensure for the former the reproduction of the dominant social relationships of production. In the actual productive process these strategies assume different forms according to the importance attributed by Capital to the different occupations, divided along the general parameters of intellectual and social labor, for the process of generation and appropriation of surplus value.

Thus, the differential distribution of authority, responsibility, prestige and income between the different occupational categories, those of intellectual as well as manual labor (since the segmentation and differentiation of the labor force also takes place in both social divisions) forms part of Capital's strategy in obtaining loyalty and commitment to the firm, and stimulating creativity and initiative from certain occupations (those corresponding to intellectual labor) considered crucial not only for their productive performance but also for their role of vigilance and control over the rest of the labor force, or manual labor, within the context of a hierarchical and segmented division of labor. In this manner, certain occupational categories become segmented from each other due to significant differences in wages, autonomy, job stability and other working conditions, and to different ascriptive, cognitive and attitudinal characteristics required for those occupations, which restrict the possibility of labor

mobility between the occupational segments.[42]

This occupational hierarchy is then reinforced at the macro-social level by the previously described interorganizational segmentation of the labor market, in such a way that highly segmented and differentiated labor markets are formed, on the one hand between the different occupations or occupational categories corresponding to the basic social division between intellectual and manual labor, and on the other hand between the different sectors of production in relation to any given occupation.

Within this context, and from the perspective of the employers, the educational characteristics of the demand for labor depend on the ascriptive, cognitive and attitudinal characteristics considered to be appropriate and desirable for each social division of labor and its corresponding occupational categories or segments in the enterprise. Since each occupational segment performs a different productive and socio-political role in the enterprise, the educational profile required of the labor force will then be determined by the relative importance of these occupational roles in the process of production and in the maintenance of social control over it. In this manner, for professional, managerial and directive occupations, corresponding to the primary independent labor market or intellectual labor, the highest and the most selected levels of educational attainment are required, since for the employers these educational levels are closely associated with the values of loyalty, internalization of norms, responsibility and initiative, as well as with the development of cognitive abilities, all of which imply a socialization into the system of values and

personal motivations that is more congruent with and necessary for that type of occupational role.[43] Or, according to Poulantzas, the class-based role of the educational system is to qualify for intellectual labor through the inculcation of cultural symbolisms, social rituals, 'secrets' of knowledge, and other educational implications of the concept of general culture, while at the same time 'de-qualifying' the working class from intellectual labor by virtue of its exclusion from this type of inculcation, and thus socially separating it and subordinating it into manual labor.[44]

Similarly, the educational requirements for intermediate occupations in administration and supervision; corresponding to the subordinate segments within the sphere of intellectual labor and whose function is basically the vigilance and control over manual labor, reflect the employers' concern for securing a labor force that has been effectively socialized in the values of respect for authority and expertise of their superiors, as well as subordination, loyalty and dependability. Finally, for the manual labor force the most important recruitment criteria are not educational but ascriptive (racial, sexual and ethnical characteristics), and attitudinal (discipline, good social behavior, obesiance to authority), in order to guarantee the necessary compliance and subordination required of manual labor in fragmented, repetitive, simple and menial occupations.[45] Besides, the manual labor force is de-qualified from intellectual labor by virtue of its specific type of schooling, which excludes the working class from intellectual labor, thus subordinating it into manual labor.

Thus, for employers, educational credentials perform an

important role of certification and assessment both of the type of socialization; values and attitudes; and of the cognitive abilities of the labor force, that would ensure the adequate selection and allocation of the labor force in the segmented and hierarchical occupational structure (social qualification and distribution role of educational credentials). Consequently, educational credentials become a social filter, a screening mechanism, through which employers select the labor force with the most desirable personal characteristics. Desirable, from the perspective of facilitating the control of Capital over Labor and over the labor process and thus guaranteeing the reproduction of the dominant social relations of production.

Within the context of underdeveloped societies, the occupational segmentation between professional and managerial occupations, supervisory and administrative, and manual occupations, which respectively corresponds to the classification of the labor market segments into a primary independent, primary subordinate and a secondary labor market, is reinforced by the productive segmentation into a monopolistic, a competitive and a subsistence or informal economic sector, since the same occupation, or labor market segment, receives higher wages and enjoys better working conditions in the monopolistic than in the competitive sector.[46] Furthermore, in the informal sector, most of the urban labor force works under conditions of job instability and low income, characteristics of chronic underemployment. Thus, the stratification of the labor force into the different occupational segments becomes a major determinant of income distribution and occupational and social mobility. Since the access to these differential labor

markets, and particularly to the primary labor market, is increasingly a function of formal educational credentials, whose level and quality is in turn determined by socio-economic status, a large portion of the aggregate social demand for schooling, especially for its higher levels, is 'derived' from the social and occupational mobility function of formal educational credentials vis-a-vis the predominant occupational structure. This 'derived' demand for schooling assumes different forms for different classes in society. For the dominant class, or the bourgeoisie in Poulantzas's class structure of modern capitalism, the demand for high and selected levels of educational opportunities is a means of insuring the intergenerational reproduction and perpetuation of their social position through the social legislation granted by the meritocratic-technocratic ideology attached to educational achievement. For the emerging class of the new small bourgeoisie the achievement of higher levels of schooling over time becomes the promise of higher social and occupational mobility within the sphere of intellectual labor, but it is also a necessary requirement for insuring intergenerational social mobility given the continuing devaluation of educational credentials in the labor market.[47] For the upwardly-mobile groups of the working class formal educational attainment becomes the strongest advantage in the labor market competition for the best employment opportunities in the secondary labor market and for some, even in the primary subordinate segment. Finally, for the bulk of the working class the attainment of the basic levels of schooling provides the minimum skills necessary for job competition in the secondary labor market or for subsistence in the informal sector of the economy, since

the educational experience of this class largely corresponds to its position as manual and subordinated labor in society.

From the above it can then be inferred that the specific value of educational credentials in the competition for access to a segmented and unequal labor market is derived from the interaction of the following factors:

(a) The educational requirements for employment in the different segments of the labor market, both in the spheres of intellectual and manual labor. The type and level of these educational requirements are greatly determined by the productive and attitudinal value (or cognitive and affective value, according to Bloom's Taxonomy of educational functions), attributed by employers to the educational attainment level of the labor force. This is the social qualification and distribution role of schooling described by Poulantzas.[48]

The available research of this problematic indicates that "education" in itself, as a process of formation of knowledge and personality traits, is valued by employers as the best opportunity for the development of reasoning and cognitive abilities, of civic virtues, and of a "moral" character.[49] The level of educational attainment of the labor force is then valued as an indicator, as a guarantee that, in effect, that desirable formative process has taken place in the job applicant. More in particular, that the labor force has internalized the virtues of discipline, order, respect for authority, obeisance and other non-cognitive or attitudinal traits necessary for an appropriate pattern of behavior in the industrial order.[50] The final objective being the continuous reproduction of the dominant social relations of

production. From this perspective, the high value attributed by employers to the "educational experience" of the labor force, especially that in intellectual labor, becomes an important determinant of their observed preferences for a relatively highly educated labor force, even if the actual educational requirements of most productive tasks and processes are objectively lower than the level of educational attainment of the labor force.[51] This relative overeducation of the labor force appears both in the divisions of intellectual and manual labor, and increasingly in the former since the process of capitalist 'rationalization' of the labor process is continuously standardizing and simplifying the activities of intellectual labor, fragmenting and dividing knowledge and expertise, and in effect, 'de-qualifying' and segmenting the sphere of intellectual labor.[52]

(b) The type and level of educational requirements for employment in the different occupational segments are in turn determined by the general availability of the labor force and by its educational attainment level. That is to say, in the presence of high rates of unemployment or underemployment (oversupply of labor), employers tend to increase the minimum educational requirements for employment, thus selecting the labor force with the highest relative level of formal education. The educational credential becomes thereby for the employer, an important mechanism of sorting, selecting and screening, and for the labor force it becomes the guarantee of relative advantage in the labor market competition for the scarce jobs available.

Conversely, in times of economic expansion when the supply of labor is low or rapidly diminishing, employers disregard the educational

attainment level of the available labor force, which is rapidly and efficiently trained on-the-job. Classic examples of this "irrational" employer behavior are the periods of war or of sustained economic growth leading toward full employment, when a greater participation of the population into the labor force is encouraged.

(c) Since the average educational attainment level of the population increases over time due to the process of educational expansion, the supply of educated labor competing for scarce jobs in the primary labor market also increases. Employers, in turn, revise upwards the minimum educational requirements for jobs through their personnel selection procedures, as the analysis of the relation between the rising educational profile of the labor force and the increasing educational requirements for the same occupational categories over time so indicates.[53]

(d) Consequently, a greater social demand for the types of educational credentials or for the next educational attainment level providing the next level of competitive advantage in labor market competition is generated. This is the societal process aptly described by Dore as "qualification escalation" or "certificate devaluation."[54] The spiraling inflation of educational credentials necessary for labor market competition is in turn reinforced and accelerated by the existence of high rates of urban unemployment, by the continuing process of industrial concentration and by the ensuing differentiation of labor market segments, and by the rapid expansion of public and private "credentialling" opportunities. Expansion that, as previously described, has assumed a highly uneven pattern characterized by the preferential

development of the higher over the basic levels of schooling. In turn, the characteristics of this educational expansion have increasingly become a function of the political and economic power of the urban, new small bourgeoisie and upwardly mobile groups of the working class in their search for the educational credentials necessary for occupational and social mobility. In Latin America, for example, as the research of Solari and others indicates,[55] the social demand for schooling is primarily expressed by the groups with the political power to effectively influence public expenditures, with the economic power to purchase private education, and with high social mobility expectations.

Throughout this chapter two basic determinant factors of the educational problematic in dependent underdeveloped countries have been briefly described. The first is the "external" factor, which is the degree and nature of integration of any given economy into the prevailing international economic structure, or the relative position and specialization of that economy into the international division of productive, technical and scientific labor. The second factor is "internal" and is defined in terms of the nature of class relations in society.

The political struggle between groups and classes in society over the destination and purpose of the scarce educational resources available is expressed on the one hand by the "social demand" for education presented by the politically influential sectors of society and by the creation of a large private educational market financed by the economically powerful ones. The interaction of these two important

social forces exerts a determining influence over the forms and the pattern of development that the process of expansion of the educational system takes. This is primarily expanded in its relatively higher levels in order to provide the accreditation opportunities necessary for a limited and privileged social sector in its search for success in the tight competition for access to the best job opportunities in the segmented and hierarchical labor market generated by the process of dependent industrialization dominated by monopoly capital. The characteristics of this pattern of dependent industrialization also provide some of the fundamental parameters that determine the possibilities of educational reform. Thus, the situation of scientific and technological dependence does not generate the necessary local conditions, such as an effective demand for highly trained human resources in science and technology, that would stimulate the expansion and improvement of this type of education. On the contrary, such dependence generates a large demand for middle-level technicians, managers and administrators, whose skill development level is determined by the need for maintenance of the imported technology and for the implementation of organizational decisions taken elsewhere. As a consequence, a large market for this type of labor is created, and furthermore it is promulgated at the ideological level the importance for economic development of the best degree of fit between the educational system, both in its organizational structure and its content, to the needs and demands of the productive system. The end result is the formulation of educational policies favoring the development of technical and vocational education programs, which not only serve to further differentiate, socially and curricularly,

the educational experience but that also attempt to adjust it to the already existing distortions of the productive system.

So far it has been described in a general way how the process of interaction between external and internal factors; the degree for integration into the dominant international economic structure, and the nature of class relations derived from the former; determines the general parameters of educational development in dependent societies. The more so, the more unequal and differentiated the occupational structure of any given country has become as a result of the domination of its productive structure by international monopolistic capital.

Of course, there are also other cultural, religious and political factors influencing the social demand for education and the general pattern of educational development. It can be argued, for instance, that traditional values of respect for scholarly individuals, for the literati and the erudite, or for highly educated religious and political figures or role-models, may have an important influence in a given society, on the overexpansion of the higher levels of education and may run counter to egalitarian educational policies. On the other hand, these policies could be rapidly implemented, and the educational privileges of the dominant social groups curtailed, by political will, as in the case of some populist regimes, Peron's Argentina having been a particularly interesting example during the 1940s.

However, utilizing Bourdieu's theory on the cultural transmission of social inequality, it is possible to analyze the social demand for the highest levels of erudition and scholarship as the strategy of social reproduction of the intellectual elite in search for the scarce

and prestigious educational credentials that serve to legitimize their elitist social standing.[56] Moreover, the role of cultural values on the social demand for education must be analyzed from the perspective of the social and economic interests of the groups or classes that hold those values in the first place. Otherwise, values, beliefs and traditions would have to be considered as socially and economically independent and autonomous manifestations of human needs and ideas, or as if the preference of the upper castes in India for higher educational achievement was solely determined by long-standing cultural traditions that were independent from the economic and political interests of those castes.

Notwithstanding the role that certain values and traditions may have on educational development, especially if they represent class-based interests, this thesis attempts to demonstrate that within the context of underdeveloped economies undergoing a vast and rapid process of industrialization through monopoly capital investments, the most important force determining the pattern of educational expansion and the limits of educational reform, is the political and economic power of those social groups and classes that most benefit from the highly unequal and segmented social division between intellectual and manual labor in the capitalist enterprise and which is reinforced by the dominance of monopoly capitalism; for them educational credentials represent access to the privileged positions in the economy and legitimation of the social reproduction of their privilege and domination.

The optimism that during the 1950s and 1960s supported the

gigantic educational expansion of that time, the grandiose expectations of social, economic and political development through education have disappeared during the 1970s in the light of continuing poverty, underdevelopment and inequality. The expectations of greater social equality through a greater expansion of educational opportunities have been challenged by the paradoxical reality that in spite of such a large expansion there is today possibly greater social inequality in dependent underdeveloped countries. Besides, this educational growth did not bring about any significant contribution regarding the qualitative improvement of education. The 1950-1970 period can be summarized in respect to educational development as "more of the same" in the words of Louis Emmerij. He continues:

> Educational expansion and quantitative growth did not bring with them qualitative growth in education, nor any meaningful changes in methods, aims and structures of education, and therefore did not contribute in any way to solving pressing problems such as equal educational opportunity.[57]

"More of the same" meant more resources, more teachers, more buildings for the expansion of the three levels of schooling. But the end result has not been a general equalization of educational attainment levels, nor a substantial reduction of the poles of inequality, but a more highly uneven distribution of education between the different classes of the population. Moreover, the prospects for the near future only indicate a progressive deterioration of the educational, as well as other social possibilities, for the majority of the population in dependent underdeveloped countries. The expected contribution of educational policies to other growth and equality has been severely circumscribed by the prevailing class relations and by the role imposed

on schooling by the dominant class, namely, the reproduction of the class structure of the dominant mode of production.[58]

ENDNOTES

[1]World Bank, "Education," Sector Working Paper (Washington, D.C., 1974), p. 13.

[2]J.H. Boeke, Economics and Economic Policy of Dual Societies (New York, 1953).

[3]D. McClelland, The Achieving Society (Van Nostrand).

[4]E. Hagen, "The Theory of Economic Development," in Economic Development and Cultural Change (April 1954).

[5]T. Parsons, "General Theory in Sociology," in Sociology Today, ed. R.K. Merton, et al. (New York: Basic Books, 1958).

[6]R.S. Eckhaus, "The Factor Proportions Problem in Underdeveloped Areas," quoted in B. Higgins, Economic Development: Principles, Problems, and Policies (New York: W.W. Norton & Co., Inc., 1959), pp. 325-333.

[7]B. Higgins, Economic Development . . ., pp. 199-216.

[8]UNESCO, "The Development of Higher Education in Africa," Report on the Tananarive Conference (Paris, 1963).

[9]A. Adams and R.M. Bjork, Education in Developing Areas (McKay, 1969), p. 86.

[10]Muhammad Shamsul Huq, Education and Development Strategies in South and Southeast Asia (Honolulu: East-West Center Press, 1965), p. 159.

[11]J.S. Cornehls, "Forecasting Manpower and Educational Requirements for Economic and Social Development in Peru," in Education and Development in Latin America and the Caribbean, ed. Th. La Belle (Los Angeles: Univ. of California Latin American Center, 1972), pp. 151-176.

[12]M. Carnoy, "The Political Economy of Education," in Education and Development in Latin America and the Caribbean, pp. 177-218.

[13]Michel Debeauvais, "The Development of Education in Latin America Since the Santiago Plan," in Education and Development in Latin America and the Caribbean, pp. 45-60.

[14]UNESCO, Evolución Reciente de la Educación en America Latina, II (México: Sepsetentas, 1976), p. 21.

[15]World Bank, "Education," p. 27.

[16]UNESCO, Evolución Reciente . . ., p. 93.

[17]Ibid., p. 92.

[18]World Bank, "Education," p. 16.

[19]Ibid., p. 37.

[20]Ibid., p. 38.

[21]Ta Ngoc Chau, Population Growth and Costs of Education in Developing Countries (Paris: UNESCO_IIEP, 1972), p. 53.

[22]Ibid., p. 21.

[23]Mats Hultins, "I-The Cost of More and Better Education in Developing Countries," in Costing and Financing of Education in LDCs--Current Issues, World Bank Staff Working Paper #216 (Washington, May 1975).

[24]M. Zymmelman, "Patterns of Educational Expenditures," World Bank Staff Working Paper #246 (Washington, Nov. 1976).

[25]World Bank, "Education," p. 16.

[26]UNESCO, Evolución Reciente . . ., p. 16.

[27]UNESCO, "The Development of Higher Education in Africa."

[28]Jaime Rodríguez, "Las Transformaciones del Sistema Educativo y su Repercusión sobre la Universidad de la década del 80 en Colombia," ICFES #24, Bogotá, 1975.

[29]UNESCO, Evolución Reciente . . ., p. 21.

[30]DANE, Boletín Mensual de Estadística # 306 (Bogotá, Jan. 1977).

[31]J. Vaizey, The Role of Education in Economic and Social Development (Paris: OECD, 1963).

[32]M. Carnoy, "Education and Employment: A Critical Appraisal," UNESCO-IIEP, Fundamentals of Educational Planning Series #26 (Paris, 1977).

[33]N. Poulantzas, Las Clases Sociales en el Capitalismo Actual. Siglo XXI (México: Editories, 1978).

[34]P. Bourdieu and J.C. Passeron, Reproduction: In Society, Education and Culture (Sage Publications, 1977).

[35]Luiz B. Pereira, "Enterprises Multinationals et les Sous-développement Industrialisée," Revue Tiers Monde, Tome XIX, no. 74 (Avril-Juin 1978).

[36]DANE,"Inversion Extranjera en la Industria Manufacturera, I," Bóletin Mensual de Estadistica 302 (Botogá, Sept. 1976), p. 121, Table 6.

[37]Ibid., pp. 155-160.

[38]UTAL, Las Corporaciones Transnacionales y el Desarrollo Dependiente en America Latina (Buenos Aires, 1975).

[39]R. Souza, "La Segmentacion del Mercado de Trabajo en Economias Subdesarrolladas," Unpublished Manuscript, Prealc, Chile, 1977.

[40]D. Chudnovsky, "Empresas Multinacionales y Ganancias Monopolicas en una Economia Latinoamericana," Siglo XXI, eds. (Buenos Aires, 1974).

[41]N. Poulantzas, Las Clases Sociales . . ., pp. 207-231.

[42]R. Edwards, "The Social Relations of Production in the Firm and Labor Market Structure," in Labor Market Segmentation, ed. Edwards, Reich, and Gordon (D.C. Heath & Co., 1975), pp. 3-26.

[43]M. Carter and M. Carnoy, Theories of Labor Markets and Workers Productivity Center for Economic Studies (Palo Alto, Calif., 1974).

[44]N. Poulantzas, Las Clases Sociales . . ., pp. 214-231.

[45]J. Hallak and F. Caillods, "Education, Travail et Emploi a Panama," UNESCO IIEP, Document de Travail, IIEP/544/7F (Paris), pp. 178-190.

[46]R. Souza, "La Segmentacion . . ."

[47]R. Dore, The Diploma Disease. Education, Qualification and Development (UCLA Press, 1977).

[48]N. Poulantzas, "Las Clases Sociales . . .," pp. 240-242.

[49]Hallak and Caillods, "Education, Travail . . .," pp. 136-139.

[50]M. Carter and M. Carnoy, "Contradiction and Correspondence: Analysis of the Relations of Schooling to Work," in The Limits of Educational Reform, ed. H. Levin and M. Carnoy (New York: McKay, 1976).

[51] I. Berg, Education and Jobs: The Great Training Robbery (Boston: Beacon Press, 1970); and H. Braverman, Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century (New York: Monthly Review Preee, 1974).

[52] N. Poulantzas, "Las Clases Sociales . . .," p. 225.

[53] Hallak and Caillods, "Education, Travail . . .," p. 120; and C. Munoz, Antecedentes Sociales, Educación y Empleo (México: Centro de Estudios Educativos, 1977).

[54] R. Dore, The Diploma Disease.

[55] Aldo Solari, "Algunas Paradojas del Desarrollo de la Educación en América Latina," Revista Latinoamericana de Ciencias Sociales 1 (Chile, 1970).

[56] P. Bourdieu, "Cultural Reproduction and Social Reproduction," in Ideology and Power in Education, ed. J. Karabel and A.H. Halsey (Oxford Univ. Press, 1977), pp. 487-510.

[57] L. Emmerij, Can the Schools Build a New Social Order? (New York: Elsevier Scientific Publications, 1974), Introduction.

[58] S. Bowles, "Education, Class Conflict and Uneven Development," Unpublished Manuscript, University of Massachusetts Department of Economics, 1977.

CHAPTER II

INDUSTRIALIZED UNDERDEVELOPMENT AND LABOR MARKET SEGMENTATION

The International Expansion of Monopoly Capital and its Specificity in Latin America

Since the postwar period the world-wide economic process has been characterized by the continuing expansion and consolidation of international monopoly capitalism represented in its most dominant form by North American monopoly capital. The process of accumulation and concentration of capital has characterized the development of capitalism in North America since the second half of the nineteenth century. As a matter of example it suffices to mention that between 1880 and 1890, over 5,000 enterprises were absorbed or merged into 300 trusts, since then the tendency toward concentration and gigantism will become dominant.[1] Thus, between 1950 and 1962, one thousand nine hundred (1,900) firms with assets worth 14,000 million dollars, were absorbed by 200 gigantic corporations.[2] In 1962, 200 enterprises representing 0.02% of all existing enterprises in the U.S., owned 57% of all assets, while 419,000 enterprises only owned 25% of same.[3] This tendency was further reinforced and accelerated after the war due to the effects of the war effort on the economic structure of the U.S.

In the first place, it is important to mention that the demands for production of war-related products and services led to the

centralization of most of the existing scientific and technological developments in the hands of the Government and large enterprises. The systematic application of this knowledge to the productive structure produced significant changes in the production processes of basic areas of modern industrial development, such as chemistry, electronics, communications, nuclear energy, and others. The pressing need to further develop technological innovations contributed to the emergence of a continued research and development effort whose control by large enterprises reinforced their economic power and their increasing monopolistic control over capital, production and markets.

Secondly, the application of this newly generated knowledge to the productive forces generated important organizational, managerial and technical innovations that significantly increased the productivity of the U.S. enterprise, and therefore, their hegemony in the world market. Thirdly, the international capital expansion of the postwar period was generated not only by the dynamism of the large enterprises in search of control over sources of raw materials and markets, but also by the significant role of the U.S. government in the reconstruction of Europe through the Marshall Plan. This economic expansion was then supported by political expansion; that is, by the increasing military, ideological, and cultural hegemony of the North American capitalist system.

As the result of these three forces, during the postwar period were created the necessary political and economic conditions for the consolidation of the process of managerial, commercial, monetary, cultural and military integration. The sphere of cultural domination

was facilitated by the rapid development and world-wide expansion of multiple forms of communication media. Economic integration utilized as a vehicle the proliferation of large 'multinational' corporations with investments in all major underdeveloped countries. Other important mechanisms of economic and political integration were the regional trade agreements, the creation of international monetary and financing organizations, the creation of institutional arrangements for the coordination of political and military decisions; the Inter-American Defense Treaty being one of those arrangements. Finally, at the ideological, superstructural level, the expansion of North American scientific concepts, epistemology, values and life style became the supporting counterpart of economic and political expansion.[4]

The international expansion of Capital accomplishes several important functions for the conglomerates; it provides the setting for the reinvestment of huge profits, thus continuing the process of reproduction of capital; it allows the transfer of semi-obsolete or non-competitive machinery to underdeveloped economies, thus extending over time the profitability of productive capital; it provides conglomerates with cheap labor, access to sources of raw materials, and other comparative advantages that make highly profitable the production in underdeveloped economies of manufactured products for the markets of developed societies; it becomes the source of new capital since after the initial investment most of the necessary capital is financed by domestic sources; and finally, it opens up large new markets which are necessary for the continuing expansion of monopoly capital. The importance of foreign economic activity for the continuing growth and competitiveness

of conglomerates is indicated by the fact that the so-called multinational corporations are those that have achieved a higher degree of monopolistic control over their domestic market and those that exhibit a higher degree of concentration. Thus, multinationalism, concentration and monopoly are mutually interdependent.

In Vernon's study of North American multinational corporations, it is described that 187 manufacturing enterprises controlled 40% of sales and 45.7% of assets of all manufacturing firms in 1966. Sixty per cent of multinational enterprises generated between 20 and 60% of their sales in countries other than the U.S. Similarly, 50% of those enterprises obtained between 20 and 60% of their profits in international operations.[5]

Before the war most foreign investment had been oriented toward the export sector of underdeveloped economies; that is, agricultural activities, mining and the building of infrastructure related to export activities. This trend has changed fundamentally since the postwar period, with an increasing percentage of foreign investments being oriented toward the manufacturing and services sectors, which are the sectors related to the expansion of internal markets.

After the war the total amount of U.S. investments in Latin America increased rapidly. In 1943, total investments were worth $2,721 million dollars, an amount that increased to $4,445 seven years later. This investment was preferentially oriented toward those countries with larger internal markets and higher relative level of development, such as Brazil, Argentina and Mexico. An increasing percentage of total investments was being allocated to the manufacturing

sector, which grew from 13.1% of foreign investments in 1946 to 43.9% in 1970. Table 17 shows the percentage composition of direct private U.S. investments in Latin America by economic sectors. Notice the rapid growth of the manufacturing sector and the decline of public services and mining.

According to data from the Economic Commission for Latin America, while total foreign investments in Latin America increased at an average annual growth rate of 5.6% during the 1946-1970 period, the rate of growth of foreign investments at the manufacturing sector increased 12.8% annually.[6] U.S. direct foreign investments in developed economies has followed a similar pattern. In 1970, 43.1% of total foreign investments were made in manufacturing industries.[7] Similarly, 76.9% of Germany's and 35.1% of England's foreign investments were in the manufacturing sector in 1970.

Given the degree of financial and technological power of the large international corporations, their investments in underdeveloped economies through their subsidiaries lead to their progressive monopolistic domination over the industrial-manufacturing sector of these economies. This domination is expressed not only through the degree of control over technology, markets and capital sources, but also through the determination of the type and volume of production. The decisions of the central firms of transnational conglomerates regarding the type of production of their subsidiaries are decisions derived from the consideration of their need for capital expansion. The attempts to integrate and to make compatible the production of diverse national economies led to the formation of an international division of labor

TABLE 17

PERCENTAGE COMPOSITION OF DIRECT PRIVATE U.S. INVESTMENT IN L.A.,* BY ECONOMIC SECTORS, IN SELECTED YEARS

Sectors	1946	1968	1970
Total	100.0	100.0	100.0
Agriculture	13.4	**	**
Mining	16.6	12.7	8.1
Oil	22.9	27.0	24.6
Manufacturing Industries	13.1	33.6	43.9
Public Services	30.2	5.7	--
Commerce	2.4	14.4	22.8
Others	1.5	9.6	--

*In six countries where most foreign investment is concentrated.

**Agriculture has been included in Others in 1968 and 1970

Source: UTAL, Las Corporaciones Transnacionales y el Desarrollo Dependiente en America Latina (Buenos Aires, 1975), p. 51.

which, in turn, is the infrastructure for the economic relations between the core and the subsidiary firms of transnational corporations.

During the 1950s and early 1960s the prevailing international division of labor was basically formed by the exchange of primary and agricultural products from the underdeveloped economies and capital goods, technology and manufactured products from the advanced industrialized economies. To the extent that some of the economies with a relatively higher level of development were successful in widening and diversifying their capability for industrial production through import substitution policies, to that extent they initiated the formation of a new international division of labor. This became characterized by the greater dependency of underdeveloped countries from technological developments and sophisticated capital goods produced by the industrialized developed countries, and by the greater participation of the former in the international market for manufactured commodities. Over time a few underdeveloped countries succeeded in developing a modern industrial sector as a result of vast technological transfers and productive investments of transnational corporations and of the national political commitments toward economic growth and modernization. In addition, a growing percentage of foreign investments in the manufacturing sector became oriented toward production for export to developed economies in order to take advantage of lower production costs and other comparative advantages existing in underdeveloped societies.

In this way, a third stage in the international division of labor slowly appears, in which foreign investments in underdeveloped

societies are increasingly oriented toward production for export to the large and affluent markets of developed societies. The evolution of the proportion of export sales in all sales of transnational corporations in underdeveloped economies clearly indicates this trend. In Latin America, over 40% of total exports of manufactured goods were produced by U.S. subsidiaries in 1968; they had achieved this level of export participation within the span of the ten previous years.[8] Similarly, U.S. corporations in Canada have more than doubled in the past decade the percentage of their export sales in relation to total sales.

This type of export-oriented production generated by this new form of international division of labor leads in turn to an increasing differentiation in the manufacturing sector of underdeveloped economies as advanced technological production processes are transferred by subsidiaries in order to produce sophisticated consumer and capital goods for the markets of developed economies. Thus emerges a modern, technologically advanced, monopolistic core of large enterprises, mostly subsidiaries of transnational corporations, that dominate the industrial sector, absorbing many national firms and subordinating others by means of complementary services and products contracts.

According to Pierre Salama the specificity of the internationalization of Capital in Latin America is formed by its orientation toward the manufacturing sector and its concentration in the branches of durable goods and capital goods manufacturing, given the importance of the latter for the transfer of obsolete and non-competitive productive capital. For multinational corporations these industrial branches perform the important role of depositories of productive machinery and

technology that has become obsolete in the developed economies due to the rapid pace of technological innovations. The internationalization of capital is then a process largely generated by the general reduction of rates of profit in developed economies created by the intense competition and by the limits of expansion of the internal market. The rapid pace of technological developments, necessary for maintaining competitive market advantage, creates a rapid obsolescence of productive equipment, the transfer of which to underdeveloped economies allows a temporal extension of the profitability of productive capital, while at the same time penetrating new markets, and thus making possible the continuing expansion of monopoly capital.[9]

Consequently, the export or transfer of obsolete productive capital creates a large degree of 'convergence' in the characteristics of industrialization between developed and underdeveloped economies. This convergence is expressed in terms of the capital-intensity of production techniques, of the predominance of the durable and capital goods as leading industrial sectors, and of the pattern of industrial concentration. Moreover, this 'convergence' implies that not only production techniques are transferred but also the organizational strategies and commercial strategies and managerial skills. The internalization of capital reproduces thus in underdeveloped economies the basic characteristics of production and accumulation of monopoly capital in developed societies.

The characteristics of the industrialization process in underdeveloped societies are thus predetermined in the first place by the specificity of the internationalization of monopoly capital in each

region of the world, or in specific countries, and secondly, by the degree of dominance and hegemony in their industrial sector achieved by multinational corporations through their larger financial resources, technological advances, access to international markets and advanced managerial skills.

One of the mechanisms of domination is the utilization of their large oligopolistic power, meaning the power to erect 'barriers to entry' against potential new competition, or the power to eliminate existing competition usually through the absorption of or buying into local firms. The extent of this oligopolistic power can be measured by the empirical reality in an underdeveloped country. In Chile, in the span of only two years (1967-1969), foreign participation in manufacturing (in terms of assets owned) increased from 16.6% to 20.3%, while domestic participation diminished from 76.1% to 63.0%, the differences between the two being made up of state-owned firms. Of the 100 largest industrial firms in the country, 49 were effectively controlled by multinational corporations. In 7 of the more important industries of Chile, 1 to 3 foreign firms controlled not less than 51% of production in each industry.[10]

Technological monopoly is another means of obtaining economic dominance and control. Foreign firms, through property rights on patents and trademarks, impose the terms for the utilization and retribution (royalties, etc.) of technologies in underdeveloped economies, and increase thus their competitive advantage over national firms. In order to illustrate the degree of concentration of technological control it suffices to mention that less than 1% of the patents having a

significant technological value and application to production that were granted by underdeveloped countries during the 1960s corresponded to nationals from those countries. In Colombia, for example, in the pharmaceutical, synthetic fiber and chemical industries, 10% of all patent-holders own 60% of all patents, and those 10% are all foreign multinational corporations.[11]

The monopolistic control over the most dynamic and advanced areas of the industrial sector leads to the specialization of production as a function of external market demands and of the needs of a narrow domestic market characterized by a high concentration of income. In this way the productive apparatus becomes specialized in production for export and for the demands of the small but affluent higher and middle strata of society. This specialization of production takes place within a context of high industrial concentration whose multiplying effects on employment generation and diversification of productive activities are very limited, thus contributing very little to the expansion of the domestic market. The process of industrial concentration generates and reinforces the pattern of concentration of income and unequal development between urban and rural areas and between regions of the country. In the words of Dos Santos:

> The unequal and combined character of capitalist development at the international level is reproduced internally in an acute form. The industrial and technological structure responds more closely to the interests of the multinational corporations than to internal development needs (conceived of not only in terms of the overall interests of the population, but also from the point of view of the interests of a national capitalist development). The same technological and economic-financial concentration of the hegemonic economies is transferred without substantial alteration to very different economies and societies, giving rise to a highly unequal

productive structure, a high concentration of incomes, underutilization of installed capacity, intensive exploitation of existing markets concentrated in the large cities, etc., . . .[12]

Segmentation in the Productive Sector and in Labor Markets

The hegemony and dominance of international monopoly capital over the productive structure of underdeveloped economies generate a process of highly unequal and segmented social and economic development, which could be characterized in general terms as follows:

(a) High degree of industrial concentration; foreign firms control an increasing share of production in key manufacturing areas, especially those of durable consumer goods and capital goods, thus increasing their monopolistic and oligopolistic powers over the industrial sector in particular and over the larger economy in general.

(b) High degree of economic segmentation in the industrial sector which becomes divided into a Center; dominant, monopolistic, technologically advanced, mostly of foreign capital; and a subordinated Periphery formed by competitive national enterprises.

(c) Emergence of a vast sector of low-income, low-productivity economic activities in manufacturing and services, in which a large percentage (between 40% and 60%) of the urban labor force works under conditions of chronic underemployment.

(d) High degree of concentration of income, between urban and rural areas, and between the different groups and classes in society.

(e) Labor market segmentation; emergence of segmented occupational categories, both within the firm and between the Center and

Periphery economic sectors.

(f) Large rural exodus to the cities, stimulated to a large extent by the expectation of obtaining better wages and working conditions in industrial employment, in public services, or in the other sectors of urban employment.

The investments of multinational corporations in the industrial sector tend to be capital-intensive, thus generating few opportunities of productive employment relative to the volume of the available labor force. Moreover, the wages and other working conditions in multinational corporations are higher, in general, than the average for the economy, creating then an unequal distribution of income among the urban labor force. For these reasons, multinational corporations not only do not contribute significantly to the generation of employment, and so to the expansion of the internal market, but also reinforce the unequal distribution of income, which is one of the fundamental obstacles to the expansion of the internal market in the first place.

The progressive decomposition of traditional, pre-capitalist relations of production in rural areas, such as those that characterize subsistence agriculture, force a large migration of labor force from the countryside to the cities, thus deepening the problems of open unemployment and the more pervasive one of chronic underemployment which increasingly characterizes the economic activities of a high percentage of the urban labor force. These economic activities are low-income, low-productivity occupations in construction, personal services, crafts or rudimentary manufacturing, which keep between 40 and 60 per cent of the urban labor force at a subsistence level of

reproduction and thus further preclude the expansion of the internal market.

Another important consequence of dependent industrialization is the formation of large economic, technological and organizational differentials both within the industrial sector and between this and the other sectors of the economy. Within the industrial sector the differentiation between firms takes place along the parameters of differential rates of productivity, of levels of technological innovation, of degree of control over capital and commodity markets, of levels of remuneration and protection of the labor force, all of which are in direct relation to the proportion of foreign investment in the firm. The services sector grows disproportionately to the level of development of the economy, and it becomes a sector repository of multiple forms of non-productive, superfluous, parasitic, economic activities and of multiple forms of underemployment.

The high rates of population growth in Latin America, 2.9% during the first half of this decade, produce a continuing increase in the available labor force. In rural areas, given the scarcity of productive employment and the decomposition of traditional forms of production, there is generated a large migratory flux toward urban areas in search of more productive and better remunerated employment, thus further increasing the supply of labor. Since the organized, formal sector of production generates few employment opportunities, the only alternative for this excess labor force to derive some means of subsistence consists in the creation of self-employment types of economic activities. In this way, a large 'informal' sector of low-

productivity and low-income economic activities becomes organized in the large urban areas. In this sector the demand for labor is not a function of the general process of accumulation of capital, since the supply of labor is the surplus labor from the organized, formal sector of the economy and incomes depend on the limited possibilities for selling some rudimentary product or menial personal services in the market.[13]

This informal sector of employment concentrates then those who do not work in any organized enterprise, those for whom society does not offer any possibility for productive employment. This is the labor force offering domestic and other forms of personal services, self-employed craftsmen and retail traders, and small entrepreneurs in economic activities not formally organized. Conversely, the productive sector that is formed by organized firms, that is subject to social welfare legislation, and other legal forms of protection of the labor force, is called the 'formal' sector of employment. This is comprised by private or public organized enterprises or bureaucracies, and by personal services for high-income social groups.

The existence of two large sectors, formal and informal, which divide the urban labor market is the most general expression of the larger pattern of unequal social and economic development that characterizes societies undergoing a process of dependent industrialization: unequal development that is expressed in the industrial structure in the form of significant differences in productivity, profitability and degree of market control, between firms and sub-sectors of industrial production.

With the objective of identifying the most significant characteristics of this differentiation in the industrial sector, the typology utilized by Souza in his analysis of labor market segmentation in dependent economies will be followed here.[14] The sectors in which the industrial structure of these countries could be divided are the following:

(a) The Center: This is the industrial sector formed mainly by large monopolistic enterprises, mostly foreign-owned or with a high percentage of foreign-ownership. A few large national enterprises might also belong to this sector. These enterprises function in highly concentrated areas of production, have a high degree of market control, and their productive processes are of high technological sophistication and high capital-intensity. This is the modern, dominant, dynamic, monopolistic sector, where most foreign investment is concentrated and where the highest rates of productivity and profitability in the economy are found.

The participation of the Center in the industrial structure is rapidly increasing. The firms producing capital goods and durable consumer goods, which are the firms concentrating most foreign investments, have increased their participation in the industrial production in Latin America, from 17.4% to 19.2% between 1960 and 1971. However, this general average underestimates the growth of participation of these firms in more industrialized countries, since the average hides the large differences in industrial development existing between the countries of the region. If the six countries with a greater relative level of development are analyzed separately, the increasing importance

of the dominant, advanced sub-sector of industrial production can be better visualized. See Table 18.

(b) The other sector is the Periphery: This is formed by small or medium enterprises, mostly of national capital, performing in highly competitive markets, with productive processes utilizing simpler and older technology than in the Center and with a lower capital-labor ratio. The economic relationships between the Periphery and the dominant Center could assume three different forms:

- Subordination: When a large percentage of total production in many enterprises of the Periphery depends on contracts with the dominant Center firms. In this case, the type of production, its profitability, the possibilities for subsistence of these firms, become directly dependent on their specialized role as suppliers of products and services to the monopolistic enterprises.

- Competition: When periphery firms attempt to compete with center firms for a small portion of the market for any given product. To the extent that the process of industrial concentration is accelerated, these competing periphery firms become absorbed by the monopolistic sector or integrated into large conglomerates or eliminated from the competition.

- Marginality: When the production of some national enterprises in the periphery is primarily oriented toward the satisfaction of the domestic market's demand, in particular the demand for low-quality and low-cost wage goods. In general, the type of production of the multinational enterprise is not oriented toward the satisfaction of domestic demand from low income groups; consequently, it becomes possible for

TABLE 18

DEGREE OF INDUSTRIALIZATION OF SIX LATIN AMERICAN COUNTRIES, AND PERCENTUAL PARTICIPATION OF CENTRAL SECTOR IN INDUSTRIAL PRODUCTION

Degree of Industrialization*			Participation of Durable and Capital Goods in Total Industrial Production.	
Countries	1960	1973	1960	1971
Argentina	31.1	38.3	28.7	34.2
Brazil	22.8	27.2	29.4	27.0
Mexico	19.4	24.0	10.8	14.0
Colombia	17.3	20.0	9.4	12.1
Chile	23.2	26.6	9.7	9.0
Peru	17.9	24.0	7.7	11.7

*Defined as the percentual relation between the value of gross manufactured product and GNP, in millions of dollars of 1960.

Source: CEPAL, pp. 23 & 17.

the existence in the economy of this type of manufactured production specialized in a 'popular' market.

The peripheric industrial sector can thus be described as the base of the pyramid formed by the concentrated oligopolistic structures. The participation of this sector in the industrial production tends to diminish rapidly as the participation of the Center increases. For Latin America in general, the firms producing non-durable consumer goods, which basically form the production of the peripheric sector, diminished their participation in total industrial production from 56.5% to 50.8% between 1960 and 1971. On the other hand, the participation of sectors producing intermediate goods increased from 26.1% to 30.0%, and the sectors producing capital goods and durable consumer goods increased their participation from 17.4% to 19.2% during the same period.[15]

As far as the employment dimension is concerned, the Center and Periphery jointly generated in Latin America in 1973 only 17 per cent of total employment. In effect, from 1950 to 1960 the rate of growth in industrial employment was 2.7 per cent per year, and 3.8 per cent between 1960 and 1970. Thus, the participation of industrial employment in total employment has increased from 14.7% in 1960 to 16.4% in 1970 and 17% in 1973.[16] This is the type of industrial employment that corresponds to the formal, organized sector of the labor market. The informal sector accounts for 40 to 60% of urban employment. The rest of the available labor force participates in the formal labor markets of the services sector and of public employment.

The division of the labor market in two major sectors: formal

and informal; each corresponding to the larger occupational divisions generated by the process of dependent industrialization, is a general division that does not adequately portray either the extent nor the characteristics of labor market segmentation in industrializing underdeveloped societies. In this respect, two major theoretical perspectives have been developed that attempt to describe and to interpret the existing divisions in the labor market; the dualistic and the segmentation theories of labor markets.

The dualistic theory. The principal conceptual components of this theory could be summarized as follows: the level of wages in the capitalist economy does not depend on the interaction between supply and demand in a market of free competition, but on the internal characteristics of productive activities. These characteristics could be categorized as technical-economic and organizational. The first are derived from the technological composition of jobs, which is generally measured in terms of the capital/labor ratio in the productive process. The greater productivity of jobs with high technological component allows for levels of remuneration of labor that are higher than the prevailing average in the economy, especially if these highly productive activities belong to the dominant, monopolistic sector of the economy. The organizational characteristics refer to the internal organization of the labor process within the firm, which in the large enterprises of the dominant economic sector, and also in many firms of the Periphery, takes the form of clearly defined 'internal labor markets,' that determine the process of selection and promotion of the

labor force in each firm. Internal labor markets are generally characterized by a rigidly graded hierarchy of power, status and remuneration, that forms job ladders and job strata. This occupational structure within the firm is reinforced by certain criteria for selection and promotion of personnel through which the firm defines the desired patterns of workers' interpersonal behavior and productive performance.[17]

The dualistic theory conceives of wages as a function of the relative productivity of jobs and of their position within the internal labor market of the firm. Unemployment is then a function, not of the characteristics of the supply of labor as proposed by the orthodox economic theory, but of the amount of investment in physical capital and the capital-intensity of those investments, both of which determine the size of the demand for labor.[18]

As a consequence of the domination exerted by monopoly capital, an increasing differentiation in the productive structure of developed and underdeveloped countries alike is produced. This differentiation is the result of the process of industrial concentration through which the large, dominant corporations enter to control and monopolize production and markets, thus creating an economic structure divided between the Center (dominant, advanced) and the Periphery (subordinate sector).[19] In this dual economic structure the large oligopolistic enterprises organize themselves in complex bureaucracies in which many administrative and productive functions, throughout the world, are internally organized and coordinated through advanced managerial schemes. The predominant system of labor management has become the increasing

differentiation of and specialization of jobs which has led to the segmentation of the occupational structure and of labor markets.

Corresponding to the dualism in the industrial structure there developed a dualism of working environments, wages and mobility patterns. The large oligopolistic corporations have highly productive, capital-intensive production processes, tend to be highly unionized, and have developed clearly defined internal labor markets that serve to organize and regulate their highly hierarchical and stratified productive structure. The small, competitive enterprises forming the peripheral sector tend to be labor-intensive in production, have lower labor productivity, and lower profitability than enterprises in the central, dominant sector. The demand for their products is unstable, have low unionization indices and perform in a highly competitive market.

The result of this economic, technological and organizational dualism between the Center and the Periphery sectors is the dichotomization of the urban labor market into a 'primary' and 'secondary' sector, as the dualistic labor market theory has proposed.[20]

Doeringer and Piore, after studying the large heterogeneity in terms of working conditions, wages, job stability, and internal labor markets, existing in the jobs of the urban labor market, proposed a general descriptive division by which the most significant job-related differences could be grouped. In Piore's words:

> The basic hypothesis of the dual labor market is that the labor market is divided into two essentially distinct segments, termed the primary and the secondary sectors. The former offers jobs with relatively high wages, good working conditions, chances of advancement, equity and due process in the

> administration of work rules and, above, all employment stability. Jobs in the secondary sector, by contrast, tend to be low-paying, with poorer working conditions and little chances of advancement; to have a highly personalized relationship between workers and supervisors which leaves wide latitude for favoritism and is conducive to harsh and capricious work discipline; and to be characterized by considerable instability in jobs and a high turnover among the labor force.[21]

The emergence of dualism between Center and Periphery in the productive structure is the economic base supporting labor market dualism. In effect, Harrison, for instance, postulates that monopolistic enterprises by means of their greater productivity can afford to pay higher wages and can create better working conditions for the labor force. Also, their high degree of market control permits their passing their higher production costs to consumers.[22] Alexander compared a group of industries formed by those with the highest and lowest indices of job stability between 1965 and 1966, and found that the level of industrial concentration of the first was four times greater than the second set of industries, the value added by worker was three times larger, and investments by worker employed was almost five times greater, respectively.[23] Rosenberg found earning differentials of 25 and 35 per cent between workers employed in the primary and the secondary labor markets.[24] Buchelle, in addition, attempted to measure the earnings differentials between several occupational categories of the Center and Periphery sectors in the U.S. He found significant differences between occupations in spite of the fact that his sample was formed by workers of the same age, sex and occupation.[25]

If the educational and racial characteristics of the labor force are accounted for in the analysis of wage differentials between

primary and secondary labor markets, it is found that these differentials increase between Black and White workers, and in direct proportion to their educational attainment level. The ratio of Black/White workers' salaries in the primary sector was .83 for the educational level equivalent to High School completion, but the ratio diminished to .70, for the 13-15 years of schooling level. In the secondary sector, these ratios were .74 and .67, respectively. These ratios are even lower if the salaries of white women are compared to those of white men.[26]

Several other studies on income differentials between workers employed in the primary and secondary labor markets have corroborated the significance of these differentials. However, there is not a single, precise, homogeneous measure of these differences given the diverse characteristics of age, sex, race and occupation, of the samples utilized in these studies.

The greater wage levels, better working conditions and fringe social benefits received by primary sector workers are derived from the hegemonic conditions over production and markets of the Center firms. Their greater monetary excedents allow them to establish higher wage levels and organize internal labor markets. In this manner, they attempt to attract a relatively more educated and possibly more disciplined and docile labor force, while assuring labor's loyalty and high productive performance. Through the structures of the internal labor market, competition between workers for promotion possibilities within a highly stratified and hierarchical division of labor is stimulated.

In short, as a result of the technological, organizational and

economic hegemony of large firms in the Center sector of the economy, these have diversified the structure of employment in three main dimensions. The first is the superdivision, diversification and specialization of productive processes. The second is the tendency to employ a labor force with relatively higher levels of formal education and job-related skills. Finally, the organization of rigid and hierarchical channels for interpersonal relations and promotions within the firm, forming internal labor markets. In comparison, firms in the Periphery sector of the economy, forming the secondary labor market, have an organizational structure less hierarchically organized, with fewer bureaucratic controls over the labor force, and with larger labor turnover, since their productive processes tend to have a simpler, labor-intensive technology, and their size does not impose complex, bureaucratic operational needs.[27]

In underdeveloped societies, the dualistic theory was originally posed from the perspective of the modernization of values within the context of cultural dualism. According to this perspective, underdevelopment could be explained as the absence of the adequate values and attitudes that would propitiate entrepreneurial activity, risk taking and economic progress. The absence of these values was predominant among the majority of the population in underdeveloped countries, which subsists under traditional and backward forms of production. This traditional sector of production coexists with a small, dynamic, modern sector where entrepreneurial values prevail and where capital, labor and commodity markets regulate economic activities. In the 'modern' sector workers respond to the wage incentives of the

labor market. In the 'traditional,' backward sector, workers had not internalized the values of accumulation and competition of the capitalist system and thus would only work enough to satisfy their culturally determined needs.[28] These conceptual formulations became integrated in the 'culture of underdevelopment' theory, according to which the cultural pattern of life determined the social relations of production and the level of development of productive forces in society.[29]

A less culturalistic perspective is provided by the 'technological dualism' version.[30] It is the differential quality and degree of utilization of technology, the explanatory factor of the different levels of development between urban and rural production, and of the corresponding wage differentials. The large, dominant, capital-intensive enterprises of the modern sector of the economy are highly productive and thus can better remunerate their labor force, the size of which is very small relative to the overall size of the labor force, due to the low employment-generating capability of capital-intensive production. Unemployment and underemployment are thus seen as a function of the amount of capital investments in the economy at large, and of the capital-intensity of investments in the modern sector in particular. Most of the labor force works in the agricultural sector in low-income, low-productivity economic activities in urban areas. In both sectors incomes are barely enough for subsistence and technology is generally rudimentary and labor-intensive. This is the traditional sector where savings and investments are minimal due to the subsistence level of labor in this sector.

Technological dualism is then the main determinant factor of the process of unequal development, in its social as well as in its economic dimensions. Regarding the labor market, technological dualism not only reinforces and deepens the differentials in wages and general working conditions between the primary and the secondary labor markets, but also within the primary sector promotes a stiff competition between workers for the best employment opportunities, which are those jobs with a greater technological component and productivity. This competition for jobs had led to what some authors have called the 'queue theory' of labor markets.[31] This theory proposes a model of access to jobs by which employers select among the vast supply of labor those workers whose characteristics best predict their successful 'trainability' for the available jobs. "Those workers who possess background characteristics, such as race, sex, education, age, psychological tests and previous experience, which employers feel reduce training costs go to the head of the 'queue' and receive the 'best' jobs."[32] The role of education becomes then to increase the individual chances of access to the best job opportunities, since relatively high educational attainment levels are perceived by employers as a guarantee of 'trainability' of the labor force.

In underdeveloped countries, where most productive processes in the modern sector of manufacturing are dependent on imported technology of high capital-intensity, this becomes the determining factor of labor productivity, not the educational level of the labor force. In this context, the continuing increase in the educational level of the labor force does not imply a greater contribution to economic development, nor

an increase in employment opportunities, but a greater competition for the scarce employment opportunities available. Thus, education increasingly assumes a distributional role in the structure of employment. Education becomes a progressively more important vehicle for occupational allocation, and thus for social and economic mobility, and is valued accordingly. According to the 'job competition,' or 'queue' theories of labor markets, the increase in the supply of educated labor, that has led to the phenomenon of 'educated unemployment,' does not reduce the wages paid to educated labor, as the orthodox theory postulates, since employers have identified a given production function formed by a certain quantity of educated labor at a certain wage level and producing a certain output. Under normal conditions of productivity and profitability this identified production function remains largely inflexible in spite of the oversupply of educated labor. Moreover, since within this production function there is a low substitutability of technological inputs, most of which are imported from highly industrialized to underdeveloped economies, employers may prefer a stable, specialized, relatively highly paid and skilled labor force, than the potential disruptions to production schedules and higher costs caused by skilled-labor turnover, training and other effects of wage competition from unemployed labor. This phenomenon has been studied in more detail by labor market segmentation theorists who postulate that even within the primary labor market significantly different working conditions exist between jobs, which has led to the division of the primary sector in two qualitatively different segments; the primary independent and the primary subordinate,[33] or upper and lower tiers in

the primary sector, according to Piore.[34]

Even though the analysis of this labor market segmentation will be done in the next section, it is important to point out at this moment that the aforementioned subdivision of the primary sector corresponds to the distinctions in the firm between professional and managerial labor of crucial importance for production on one hand, and supervisory, administrative and technical jobs that are not essential for production on the other hand. The primary independent sector or upper tier is the most protected, stable, and best remunerated sector of the employment structure. This protection of a given segment of the labor force by employers reinforces and deepens the wage and other job-related differences existing between the modern and the traditional sectors of the economy, which roughly correspond to the primary and secondary labor markets proposed by the dualistic theory. These differences are thus not a function of the supply of labor, as in the orthodox theory, but of the internal characteristics of the jobs; the technological and the organizational characteristics previously described. The higher wages derived from the higher productivity of capital-intensive jobs in the modern sector of the economy become the economic base for the formation of dual labor markets. This dualism is reinforced by certain organizational decisions of employers, such as the formation of internal labor markets, in search of greater bureaucratic control over the labor force. However, the dualistic theory in its original formulation attributed the formation of dual labor markets primarily to cultural and technological determinations.

Labor market segmentation theories.

(a) Piore's theory. The persistence of substantial differences regarding wages, working conditions, job stability, and others, among economic sectors and the apparent correspondence existing between these differences and certain educational, cultural and racial characteristics of different social groups, suggested the permanent and qualitatively different nature of these sectoral differences in the labor market. According to the dualistic theory, the basic problem of disadvantaged, particularly black, workers in urban areas in the U.S. was that they were confined to jobs within the secondary labor market. Therefore, the high unemployment rates and low incomes found among this group of workers were essentially a symptom of the instability of their jobs and the high turnover of the labor force which held them, rather than a literal inability of this group to find work.[35] From this perspective the differences between the primary and secondary labor markets were caused by the relative stability of jobs and workers in both sectors.

By observing the characteristics of the work force employed in both sectors, Doeringer and Piore postulated the hypothesis that the educational level, and most significantly, the personal characteristics of the work force were the determinant factors in the allocation of labor in the Center and the Periphery. The latter appeared to concentrate the labor force with the lowest relative educational attainment level and with behavioral characteristics of indiscipline, irresponsibility, rejection of formal authority, and others that seemed to explain their high turnover, low wages, and their inability to find and secure

better jobs. Since these personal characteristics corresponded in turn to specific sub-cultures within the labor force, they were considered to be 'functional' for the characteristics of the jobs found in the labor market in general, and in particular in the secondary labor market. This correspondence also seemed to explain the lack of labor mobility between the primary and the secondary labor markets since the cultural characteristics of the secondary labor force were supposed to be inadequate for participation in the primary labor market.

However, the dualistic theory could not adequately explain the existence and permanence of other divisions observed in the labor force nor the apparent immobility between these divisions. One of the pioneering researchers of this problem, whose work has an important descriptive value, proposed the existence of significant and permanent divisions between the jobs of the primary and secondary labor markets, and within the primary labor market itself. According to Piore:

> A broader view of the labor market suggests that the dual labor market hypothesis focuses too narrowly on the problems of disadvantaged workers, and that there are distinctions among primary jobs, which are in many ways as important as the distinction between the primary and the secondary sectors. At the very least, it seems useful to recognize a distinction within the primary sector between an <u>upper</u> and a <u>lower</u> tier.[36]

The upper tier would be composed of professional and managerial jobs that require high levels of formal education as an essential requisite for employment. These jobs tend to offer a great deal of opportunities for personal freedom, creativity and initiative, they are characterized by the relative absence of elaborate work rules, strict supervision and other forms of hierarchical, bureaucratic control, since at this level of responsibility the employee is expected to have

internalized the appropriate code of behavior and performance.

The general division between the upper and the lower tier corresponds to the division of labor between the conception and direction of production and the vigilance and control over its execution, or between primary independent and primary subordinate activities. Lower tier, or subordinate workers in the primary sector have more work regulations, their work is more limited in scope, tends to be routinary and subordinate, and their loyalty and productive performance is elicited through the elaborate system of rewards forming the internal labor market. Piore's hypothesis further emphasizes the correspondence between the attitudinal and behavioral characteristics required of the labor force in both tiers of the primary market, and the secondary market, and with different cultural characteristics of the labor force which seem to be closely associated with class divisions. In his words: "The characterization of the secondary sector and the upper and lower tiers of the primary sector suggests the distinctions made in the sociological literature between the lower-, working-, and middle-class subcultures. The labor market divisions seem quite clearly related to these subcultures and possibly are, in the same way, anchored in them."[37]

From this perspective, Piore proposes an interpretation of the existing job-related divisions among the labor force, which are based on the 'correspondence' between the personal and productive traits required in the different occupational categories of the labor market and the system of values prevailing in the different class-based subcultures. These divisions become permanent and assume significant

differences between each other as a function of their relative position in the occupational hierarchy and the corresponding attitudinal and behavioral characteristics required. Thus, Piore identifies these main segments in which the urban labor force is divided; the primary independent, the primary subordinate and the secondary segments. These divisions become segmented from each other when labor mobility between them becomes severely limited due to either organizational barriers such as union or management-controlled job access, educational barriers such as high or selected educational attainment levels required for entrance, and ascriptive barriers such as the prevailing practice of racial, sexual, ethnical or class-based discrimination in the labor market.

The primary independent sector comprises jobs that are characterized by the absence of an elaborate set of work rules and formal administrative procedures and regulations. These rules are substituted by the internalization of the appropriate code of personal behavior and the optimum pattern of productive performance, which imply the acceptance of corporate goals and norms. These jobs tend to offer significant opportunities for individual creativity and initiative, thereby the predominance of highly-educated professional and managerial personnel in this sector. High formal educational attainment levels become then an essential requisite for employment in this sector. The higher pay and status of jobs belonging to this sector, as well as their greater promotion opportunities, tend to create a pattern of job stability. Mobility and turnover tend to be associated with advancement. According to Piore's hypothesis regarding the correspondence

between labor market segments and class sub-cultures, the upper-tier or primary independent segment seems to offer job conditions that are congruent and complementary of the middle-class subculture, which favors extended education, values intellectually demanding and creative work, is geographically mobile, has diverse cultural and intellectual interests, and strives for socio-occupational mobility.[38]

Jobs in the primary subordinate segment, or lower tier, consist of routine tasks involving little decision-making. Many middle-management, supervisory, technical and bureaucratic jobs fall under this category. Workers in this segment are required to be highly dependable, responsible and disciplined. Conformity to externally imposed norms, rather than internalization of norms, is the substance of productivity in this sector. Thus, responsiveness to authority and rules-orientation are the attitudinal characteristics required of this labor force. Following Piore's model, the working-class subculture is well-suited for the characteristics of jobs in the primary subordinate segment. In effect, working-class subculture appears to be anchored in a stable, limited and routinized life-style. The centrality of the extended family experience for this class exerts a conservative influence by restricting the possibilities for risk-taking and for entering into challenging and creative work experiences. Individual identities tend to be formed around peer group relationships and responsibilities with the extended family. Work is viewed as an instrument for obtaining the income necessary to support the family and participate in peer group activities: education is, in turn, viewed as a means of obtaining work.[39]

Lastly, the lowest-ranking jobs in the occupational hierarchy are the menial, repetitive, simple, rutinary jobs of the secondary labor market, which require few specific skills, are easily substitutable and subject to intense job and wage competition from unemployed labor. These jobs require a great deal of submission to organizational norms, obeisance to authority, discipline, and other attitudinal characteristics required of their subordinate and menial position in the enterprise. Therefore, these are the jobs that, according to Piore, correspond to the lower strata in society, to the groups with the lowest educational attainment level or with cultural characteristics that limit their possibilities for occupational mobility (minority groups in the U.S. and ethnic groups such as the Puerto Ricans in the Northeast, studied by Piore).

In this manner, Piore's theory of labor market segmentation sees this phenomenon as determined, not by economic or technological factors as in the dualistic theory, but by the different attitudinal and behavioral characteristics of the occupational categories forming the prevailing technical division of labor. The importance of these different characteristics is that they allow employers to separate and differentiate the labor force according to its expected contribution to production and, most importantly, to organizational control. Thus, the segmentation of the labor force does not respond to its differential productivity but to the employers' judgment of the relative degree of organizational importance of each occupational category. The educational implication of this theory resides in the utilization by employers of educational credentials for the differential separation

and segmentation of the labor force as a result of their identification of different types and levels of educational achievement with the internalization of the specific attitudinal and behavioral traits expected of each occupational category or segment.

(b) The Marxist theory of labor market segmentation. The basic conceptual foundation of this theory is the assertion that it is the historical process of political struggle between Capital and Labor in society the determinant factor of the multiple divisions and inequalities existing in the labor market, and not the differentials in productivity, nor the size or quality of the supply of labor, as the dualistic and orthodox theories, respectively, assert. In the latter, the unit of analysis is the rational and profit-maximizing behavior of the individual laborer vis-a-vis the prevailing wage structure. In the dualistic model the unit of analysis is the relative level of productivity, either of the single firms or of the different sectors of the economy. In the segmentation theory the unit of analysis is the objectively different interests of groups or classes in relation to the prevailing social relations of production, which under capitalism interact through the labor market mechanisms. Thus, the labor market is conceived of as the societal institution where conflicting class interests converge. The structure that the labor market assumes in a given historical moment is the product, the expression, of the ways in which certain class interests prevail over others.

Through the analysis of the different structures that have characterized labor markets over time, the segmentation theory contends that the process of segmentation of the labor force into

distinctly different and persistent groups or strata, that correspond with and reinforce other racial, sexual and cultural divisions pre-existing in society, is the historical result of the increasing division of the labor force into competing segments for employment security or a share of the wage bill, instead of the unification of the labor force around common interests as the achievement of full employment, control over the means of production, and appropriation of the total surplus value generated by their labor power.[40] This is the Marxist version of the segmentation theory, its differences with other versions of the same theory refer to the historical role of class struggle in the formation of the labor market structures. The structural-functionalist version of segmented markets is directly derived from the dualistic model, and proposes a division of the labor market into clearly identifiable segments, with stable characteristics, with few opportunities for labor mobility between segments, and each one corresponding to specific subcultures within society. The formation of this labor market segmentation is the product of the different productivity of technology utilized in the different sectors of economic activity, as also the dualistic theory postulates. Thus, while in the Marxist version of labor market segmentation, 'productivity' is rooted primarily in the characteristics of the social relations of production,[41] in the structural-functionalist version it is a technological relation.[42]

During the first decades of this century Capital obtained a greater degree of control over the process of production and thus enjoyed a greater power for the implementation of the necessary

strategies for the extraction and appropriation of surplus values. Capital's greater control over production was achieved by means of the dissolution of skilled-workers unions, which exerted considerable control over the actual process of production, which was financed by the capitalist class. Gaining control of production was thus an important means of gaining control over the value generated by labor. According to K. Stone, the breaking of the skilled-workers union was the first step toward the institutionalization of Capital's control over production. The second step was ensuring the motivation of labor to generate surplus value under a wage-contract and preventing the reorganization and reunification of labor. To achieve these objectives a thorough reorganization of the production process was necessary. As Stone puts it:

> All the methods used to solve this problem were aimed at altering workers' ways of thinking and feeling--which they did by making workers' individual 'objective' self-interests congruent with those of the employers and in conflict with workers' collective self-interests. The use of wage incentives and the new promotion policies had a double effect on this issue. First, they comprised a reward system, in which workers who played by the rule could receive concrete gains in terms of income and status. Second, they constituted a permanent job ladder so that over time this new reward system could become an accepted fact by new workers coming into the industry. New workers would not see the job ladders as a reward and incentive system at all, but rather as the natural way to organize work and one which offered them personal advancement. In fact, however, when the system was set up, it was neither obvious nor rational. The job ladders were created just when the skill requirements for jobs in the industry were diminishing as a result of the new technology, and jobs were becoming more and more equal in terms of the learning time and responsibility involved.[43]

Even though these strategies corresponded particularly to the processes of reorganization of work in the steel industry in the U.S.,

as documented by Stone, similar processes took place also in most large productive enterprises of advanced capitalist countries.[44]

With the objective of reinforcing their newly acquired control over production, capitalists sought to redivide and specialize the tasks of production so as to take knowledge and authority away from the skilled workers and to concentrate them in the hands of a small, efficient, and powerful management group. This process was essential in the separation of intellectual from manual labor, which meant the separation of the planning and managerial functions from the productive functions. This division of labor was not originated by the technical needs of production but by the political need to reinforce the separation between Capital and Labor and the control of the productive process by the former.

Thus, transferring to the managers the skills previously possessed by labor made labor lose a great deal of its bargaining power, and became more vulnerable both to the threatening (fear of dismissal) and to the cooptative strategies of management, the organization of internal labor markets being one of the most effective of the latter strategies. According to Edwards:

> . . . internal labor markets are distinguished from the more general labor processes or other day-by-day operations within the enterprise, since the former are specific, usually contrived mechanisms by which job vacancies are filled. For example, job bidding systems, regularized promotion procedures requiring periodic supervisors' evaluations, customs restricting job access to apprentices or assistants, and 'management development' programs, all constitute internal market mechanisms. The jobs filled through the operation of internal markets are restricted to the firm's existing workforce and thus, with regard to these jobs, internal markets determine the conditions on which the enterprise's workers can renegotiate the terms of their wage bargains.[45]

Internal labor markets also perform the important function of legitimizing the unequal and hierarchical divisions existing within the labor force. Since the patterns and criteria for internal promotion appear to be objective and neutral, they grant bureaucratic and technical rationality to the occupational hierarchies. Through bureaucratic control the exercise of power is institutionalized and made impersonal. "'Rule of law'--the firm's law--replaced 'rule by supervisor's command' both in the organization and direction of work tasks and in the exercise of the firm's power to enforce compliance."[46]

The assignation and specification of concrete responsibilities in production to each individual worker was one of the most effective strategies for obtaining a greater division of the labor force and for preventing the possibilities of reunification. In this way, productive tasks underwent a rapid division and fragmentation into limited, routinary tasks of low-skill requirements. This superdivision of productive labor was facilitated by the power of bureaucratic control which, through its emphasis on formal structures, made it possible to differentiate jobs more finely. "Each job appeared more unique and individualized by its particular position in the finely-graded hierarchical order, by the job criteria which specified work activities, and by distinct status, power and responsibilities, and so on. Elements of the social organization of the firm which differentiated between jobs were emphasized, while those which created commonalities diminished."[47] Thus, the development of hierarchy in the labor force was not a response to the increased complexity of jobs, but rather an organizational strategy designed to counter the increased homogeneity of jobs

and the ensuing possibilities for the growth of labor organizations.

The Marxist interpretation of the origins of the segmented occupational hierarchy is that in the basic contradictions and struggle between Capital and Labor in the production process, Capital's strategy of control and subordination of Labor assumes the form of a social division between intellectual and manual labor within the enterprise. This division reflects and reinforces the differential position of those two basic classes in relation to the means of material production and thus becomes the means through which the reproduction of the dominant social relations of production is facilitated.[48] In more concrete terms, the Marxist theory analyzes the differential roles in production and in social control of the occupational segments. The primary independent segment appears to be formed by those occupations in which the level of either production-related skills or of responsibility for large amounts of capital or of control over the labor force is high, and consequently of great productive and social control (organizational) importance. Capital's strategy regarding this labor force becomes then to increase the material benefits and organizational privileges of this type of job with the objective of making them highly attractive, and qualitatively different and separate from other occupational categories or jobs. In this manner, it is expected that the loyalty, cooperation and organizational commitment of this important segment of the labor force be obtained.[49] Similarly, primary subordinate jobs perform an important role of vigilance and control over the labor process. These tend to be intermediate jobs requiring subordination to authority, respect for the hierarchy and loyalty and dependability. However, these

jobs do not provide the worker with intrinsic satisfaction, so his motivation to work (to vigilate and control) must be derived from the external circumstances of the job, from its relative status and privilege in the occupational structure. Thus, the preferred method of capitalists for eliciting steady high levels of performance and ensuring organizational loyalty has been to form hierarchical and uneven occupational structures with a differential distribution of wages, and organizational power and prestige. As a result, primary subordinate jobs occupy an intermediate position in the occupational hierarchy between managerial-professional jobs and the low paid, menial jobs forming the secondary labor market.

Primary subordinate jobs form the lower ranks of internal labor markets, the different mobility patterns, wage levels and degree of responsibility among these jobs are determined by promotion criteria and other bureaucratic norms that sustain the appearance of equal opportunity and individual self-determination, while at the same time creating compliance, discipline, and extracting a regular high level of productivity from labor.[50]

Lastly, jobs in the secondary labor market require the minimum of either general or specific skills. These are the jobs with the lowest status, lowest wages, and least-secure working conditions. As Carter puts it: "These are the jobs anyone could do, but no one would do if they had a choice."[51] Since these jobs require very few specific skills, which could be learned in a very short period of training time, they are not considered to be crucial for production, are easily substitutable and replaced and are subject to job and wage competition

from the unemployed labor. Under these circumstances, labor discipline and productivity are enforced through the mechanisms of direct personal supervision and the threat of dismissal, instead of the mechanisms of cooperation and cooptation utilized at the primary independent and even at the primary subordinate segments.

According to Edwards, secondary labor market jobs tend to be characterized by 'simple hierarchy' rather than 'bureaucratic control' as in the primary sector.[52] The rule of simple hierarchy explains then the behavioral dimensions in these jobs. As described by Piore, personal relationships between worker and supervisor are based on the power of the latter to determine rewards as well as punishments, often in harsh, personalized and even arbitrary ways.[53] Employers frequently resort to firing as a mechanism to discipline workers, who will be easily replaced given the large size of the reserve army of the unemployed labor. Given these conditions of instability, no job ladders nor internal labor markets can develop in the secondary sector.

An important characteristic of segmented labor markets is the lack of mobility of the labor force between segments. This lack of mobility suggests a determinism in the occupational history of the individual worker from his/her option of entrance into any given labor market segment. Some of the factors explaining this lack of mobility are: the relationship between 'incidental learning' in the work place and the formation of behavioral and productive traits that tend to be specific to a given segment of the labor market and thus not transferrable to another segment;[54] the concentration of secondary workers in urban ghettos and the ensuing reinforcement of 'dysfunctional'

behavioral traits for access to the primary labor market segments; the actual practice of racial, cultural and sexual discrimination in the labor market; the high stability of jobs and low labor turnover in the primary segments; and the control of access to entry-level jobs in the latter by union regulations.

Lack of mobility after early occupational determinism is becoming an important topic of sociological research. A recent study by Birnbaum has shown the crucial effect of career origins on future income levels. For a sample of black and white workers, and for the overall sample utilized, he found that ". . . starting in the high and middle-skill level was consistently associated with increases in later levels of earnings. The potential magnitude of the return of the starting sector on later levels of earnings is as large as 50 per cent for white high-skill starters and 10 per cent for white medium-skill starters."[55]

These results are consistent with the segmentation theory's proposition that it is the characteristics of the jobs, which are in turn derived from the characteristics of the labor market segment to which it belongs; the determinant factor of wage levels, and not the human capital characteristics of the labor force. Initial job experience is a basic determinant of future earnings opportunities because career origins lay out a set of different learning opportunities which will yield different earnings streams over time, and to the extent that career origins take place in the privileged segments of the labor market the earnings stream will be higher.[56]

Given these earnings determinations, labor market segmentation

theory denies the marginal productivity-earnings identity posited by the orthodox theory. The structure of wages in the segmentation theory is explained by different factors that are 'exogenous' to the workers' human capital or other endogenous traits potentially related to labor productivity. Carnoy enumerates some of the most important exogenous factors: ". . . sexism, racism, custom, 'divide and conquer methods' of employers' production organization, monopoly power, the nature of the firm's markets for goods, bureaucracy, status considerations, maintenance of class structure in the face of 'meritocratic' rules, are all non-productivity, non human-capital factors affecting the wage structure, both between segments of the labor market and within segments."[57]

The labor market segmentation theory becomes then an important analytical tool for understanding social stratification as a process that takes place via occupational segmentation, which in turn is produced by early occupational determination and lack of mobility between labor market segments.

The implications of the segmentation theory on educational development are of great importance, first, because of the effect of occupational segmentation on the diversification of the educational structure, and secondly, because of the crucial role of the educational level of the labor force in the process of occupational allocation and social mobility. Thus, to the extent that the achievement of a relatively high level of formal education increases for the individual the comparative advantage in the labor market competition for the best employment opportunities in the economy, to that extent education

acquires a distributional value and becomes a necessary vehicle for occupational and social mobility, and receives a commensurate social valuation. This valuation, in turn, generates a constant increase in the aggregate social demand for more educational opportunities in general, and in particular for the highest educational levels which confer a greater possibility of access to the more privileged and desired positions within the occupational hierarchy. Over time, the average educational attainment level of the workforce is increased and there appears a large supply of educated labor competing for those privileged and few employment opportunities.

Since the rate of growth of these jobs, which belong for the most part to the dominant, capital-intensive, core sector of the economy, is insufficient to absorb the increasing supply of educated labor, two important social phenomena appear. The first is the increasingly important problem of educated unemployment, and the other is the overeducation of the employed labor force, or the underutilization of scarce human resources. Both problems are likely to increase over time as a result of the spiraling inflation of educational credentials required for employment. In this context there is a continuing devaluation of the labor market value of a given level of educational credentials and thus a higher educational level is constantly required for successful competition. As a corollary, the occupational possibilities for those with low levels of educational attainment become severely limited. In fact, uneducated labor can only aspire to obtain jobs in the secondary sector, or to participate in the low-income, low-productivity economic activities of the 'informal' sector of the

economy.

According to Poulantzas, the main role of the educational system is to reproduce the basic social division between intellectual and social labor, which is the concrete expression of the differential position of the bourgeoisie (the dominant class) with its associated and dependent class the new small bourgeoisie, and the working class (the exploited class), in relation to the means of production. This reproduction takes place by means of the essentially different socialization process of the education for the bourgeoisie and its associated class, and for the working class. The educational experience of the former 'qualifies' for intellectual labor and thus legitimizes its separation from manual labor, while the educational experience of the working class 'de-qualifies' for intellectual labor, thus assigning this class to its position as subordinated manual labor. In this manner, the educational system performs its role of social qualification and distribution between the spheres of intellectual and manual labor.[58]

Manual workers not only have been de-qualified from participation in the sphere of intellectual labor by virtue of their limited educational experience, but also their productive activity has been subjected to the process of capitalist rationalization, which implies the continuing simplification, routinization and segmentation of work, which thus becomes more 'de-qualified,' unskilled, unnecessary and easily substitutable. To a lesser extent, and assuming different forms, this process of capitalist rationalization is also effected in the sphere of intellectual labor. This is divided into a directive

segment (planning, management and conception activities), and a subordinate sector (activities of supervision, administration, control, and some technical functions) in which knowledge and expertise is increasingly divided and specialized (job or task-specific). Moreover, this process is reinforced by the increasing 'bureaucratization' of the occupational structure; that is, by the separation, specialization and hierarchization of functions.[59]

Within this context, and given the labor market value of educational credentials, particularly those qualifying for intellectual labor, the acquisition of the right type and level of educational credentials becomes a very important social and political objective for the rapidly emerging new small bourgeoisie in underdeveloped countries, and for the upwardly-mobile groups of the working class. The role of educational achievement in legitimating the social division between intellectual and manual labor, and its accompanying occupational structure, is derived from the theoretical possibility of individual social and occupational mobility through the increase in his/her educational attainment level, which is solely the responsibility of each worker. The failure to obtain the best possible employment in the hierarchical occupational structure is not generally seen as the outcome of an unequal, segmented and discriminating division of labor, but the failure of the individual either for not succeeding in school or for not obtaining the most appropriate level of education to insure successful labor market competition. In this respect it comes to mind the very common advice from parents to sons in Latin America: "Study now so that you do not complain later."

So far several theories on labor markets have been presented in this chapter; the Dualistic Theory, and Piore's and the Marxist versions of segmentation in the labor market. Their main conceptual differences have been briefly described. It is sufficient to point out that while for the dualistic theory, the differentials in productivity among the economic units and sectors, as well as the size and the quality (educational profile) of the supply of labor, are the determinant factors of the observed differences in wages and working conditions among the labor force, for Piore the division of the labor force into several segments and tiers is the result of technological and organizational factors forming the prevailing technical division of labor which interacts with the attitudinal and behavioral characteristics of the labor force in its allocation into the most 'appropriate' occupational segments. In the Marxist theory of segmentation the basic determinant is the contradiction and struggle between Capital and Labor, which at the level of production assumes the historical role of a social division between intellectual and manual labor, which in turn is expressed in a hierarchical and segmented occupational structure.

However, these are only general interpretations of the observed differences among the labor force. In order to demonstrate the existence of labor market segmentation it is necessary to prove that the observed differences in wages and other job-related conditions among the labor force are not due to differences in productivity between economic units or sectors nor to differences in the educational attainment level (or human capital development) of the labor force. The fact that between 40 and 60 per cent of the urban labor force in

underdeveloped countries works in the informal sector, and that this labor force is the poorest and least educated do not necessarily mean that there is an actual segmentation in the labor force. In the absence of employment opportunities in the modern, productive, formal sector, the least qualified and least mobile groups among the labor force have to find subsistence activities in the informal sector. According to the neoclassical theory, the low level of development of their human capital, and consequently their low marginal productivity, account for the low levels of income and job stability found among these groups. From the perspective of the dualistic theory of labor markets, it is the low technological component of productive activities in the informal sector that is the determining factor of this sector's low incomes and productivity. Therefore, with a greater distribution of technological inputs throughout the economy and with the greater development of the human capital of low-income groups, it is then possible to progressively generate a better distribution of income and a more egalitarian and balanced pattern of economic development. However, the labor market segmentation model holds a contrary view which implies that persons with equal human capital receive different incomes depending on the stratum in which the productive units employing them are located.[60] In order for the theory of labor market segmentation to be significantly different from other theories of labor markets, it is necessary to prove that the observed differences among the labor force are not essentially determined by their <u>personal</u> attributes (human capital), nor by the economic-technological characteristics (productivity factors) of the economic units or sectors, but by certain character-

istics of the internal organization of the labor process which are expressed in the occupational structure of each economic unit. To the extent that this occupational structure, and its corresponding wage and other job-related differences, it not determined by the previously mentioned personal and productivity factors, then its origins must be found in the organizational strategy of the managers to control the labor force and the productive process. Thus, productive units sharing similar characteristics such as size, productivity, degree of foreign or local ownership, degree of control over markets, etc., form labor markets peculiar to them in terms of their occupational structure, wage levels, working conditions and patterns of labor management.

The presentation of empirical evidence supporting the labor market segmentation theory will attempt to prove in the first place the existence of a general level of segmentation between the formal and the informal sector of employment (protected and unprotected labor markets) which form the general division of urban employment and, in the second place, the existence of a more specific form of segmentation between the primary and the secondary labor markets.

Empirical Evidence

Segmentation between the formal and the informal sectors of employment. In order to prove the existence of this type of segmentation it is necessary, in a first level of analysis, to estimate the overall income differences accruing to the labor force participating in each sector. On average, the level of income in the informal sector in Latin America

is situated between the average earnings in traditional rural activities, and that of the most modern sectors of the urban economy. In Santo Domingo, as shown in Table 19, incomes in the informal sector ranged from 25 to 34 per cent of total income, which means that incomes in the formal sector were about 2.5 times greater than those of the informal sector. In Asuncion, Paraguay, the average weekly income of people employed in the private formal sector tends to be about three times that of people working in the informal sector. In terms of personal income distribution, although the informal sector accounts for 46 to 55 per cent of total employment in the cities studied in Table 19, it only receives between 24 and 35 per cent of total personal incomes.

These data show large differences in the levels of remuneration of the labor force participating in the formal and the informal sectors, but does not discriminate the occupational characteristics of the labor force in both sectors. Table 20 shows the differences in monthly income of proprietors, employers, self-employed and domestics in the informal sector of Peru. As monthly incomes diminish, the percentage of the occupational categories of self-employed and domestics increases, and as monthly incomes rise the participation of all occupational categories in the informal sector diminishes. As a result, most of the occupations in the informal sector have low incomes. For instance, 59 per cent of those occupations earn incomes lower than U.S. $47 per month, in comparison to only 18 per cent of formal sector occupations falling under that income category. In the U.S. $116-$230 income bracket, only 8 per cent of informal sector jobs participate vs. 23 per

TABLE 19

EMPLOYMENT AND INCOME STRUCTURE IN THREE CITIES

Cities and Sectors[a]	Employment Structure (%)	Personal Income Structure (%)	Average Weekly Income
Asuncion[b]			
- Informal sector	54	31	1,622
non-domestic	41	28	1,991
domestic	13	3	461
- Formal sector	46	70	4,534
public	18	27	4,416
private	28	43	4,609
San Salvador[c]			
- Informal sector	46	25	39
non-domestic	30	22	53
domestic	16	3	12
- Formal sector	54	75	100
public	15	23	107
private	39	52	97
Santo Domingo[d]			
- Unprotected sector	55	34	23
non-domestic	50	32	24
domestic	5	2	10
- Protected sector	45	66	44
public	25	33	40
private	20	33	50

[a]The definition of domestic services and government employment is similar for all cases. The definition of the informal sector and private formal sector is the same for Asuncion and San Salvador. It includes non-professional self-employed workers, and persons employed (owner-managers, employees, workers and working family members) in enterprises employing less than 5 persons. The formal sector includes self-employed professionals and those employed in enterprises of 5 or more workers. In Santo Domingo the unprotected sector includes non-professionals self-employed, piece workers, salaried workers in enterprises with less than 10 workers and family workers. The protected sector includes the owner-managers, self-employed professionals and salaried employees in enterprises with more than 10 workers.

[b]Income given in guaranies, at 125 guaranies = 1 dollar.

[c]Income in colones, at 2.5 colones = 1 dollar.

[d]Income in pesos, at 1 peso = 1 dollar.

Source: R. Souza & V. Tokman, "Income Distribution, Poverty and Employment in Urban Areas," Paper presented at the Conference on Distribution, Poverty and Development, Bogota, U. de los Andes, 1977.

TABLE 20

URBAN LABOR FORCE, BY MONTHLY INCOME
(% of group)

	US$ 0-23	US$ 24-46	US$ 47-115	US$ 116-230	US$ 231+	Average
INFORMAL	32	27	29	8	4	50
Proprietors	10	9	47	22	12	112
Employees	26	31	33	6	4	53
Self-Employed[a]	40	24	25	8	4	41
Domestics	29	49	22	-	-	31
FORMAL	6	12	49	23	10	114
White-collar	7	7	33	31	33	166
Blue-collar	9	20	60	11	1	68
Government	2	4	45	34	16	140

[a]Excludes unpaid family workers.

Source: 1970 National Sample Survey, OTEMO, Ministry of Labor, Lima, Peru. Quoted by Mazundaro, "The Urban Informal Sector," IBRD Working Paper, 1975.

cent occupations in the formal sector, where 72 per cent of those earn between U.S. $47 and $230 per month.

Once the large differentials in labor remuneration between both sectors have been identified, it is necessary to demonstrate that there exists an actual segmentation process between them. The methodology utilized in the few available studies on this problematic in underdeveloped countries consists in the determination of whether these differentials are explained by the demographic or human capital characteristics of the labor force or by the organizational and technological characteristics of the jobs that belong to each sector of production.

A study conducted by PREALC (United Nations' Regional Employment Program for Latin America and the Caribbean) in several cities in Latin America, analyzed the income groups of persons employed in different economic sectors. Both the occupational and personal characteristics of the sample were controlled for by comparing the average incomes of employees with similar personal characteristics (age, sex, educational level) working in the private formal and informal sectors. The results of this study tend to confirm the labor market segmentation hypothesis, since significant income differences were found between employees working in both occupational sectors but with similar personal characteristics.[61] As Souza and Tokman report:

> . . . men in the informal, non domestic sector in the most active age, with four to six years of education, earned about 60 per cent as much as men in the private formal sector with the same characteristics. Likewise, men with four to six years of education employed as blue collar workers in industrial establishments in the informal sector obtain on average only about 70 per cent of the earnings of persons with the same education performing identical tasks in industrial establishments in the private formal sector.[62]

In Santo Domingo, persons of the same occupational category (blue or white collar workers), and the same sex and education, had income differentials ranging from 20 to 40 per cent according to their relative position in the formal or the informal sector. Similarly, for persons with equal education and occupying the same post in manufacturing or established commerce the differences observed were around 30 per cent. Furthermore, in order to determine quantitatively the effect of occupational characteristics (structural variables) on incomes, once the effect of personal characteristics have been controlled, a regression analysis was carried out in this study, which attempted to explain the residuals as a function of the following personal variables: age, sex, education, family position, and structural variables, branch of economic activity, occupational category, and size of establishment.

The results show that, in Santo Domingo, persons with identical personal characteristics earned 1.4 times more if they were employed in the formal than in the informal sector. Similar results were also obtained for the manufacturing sector in El Salvador. Another interesting result of this study should also be mentioned. The elimination of the influence of the structural variables significantly reduced the income differences attributed to education. In both countries studied, persons with 10 to 12 years of education received 2.3 and 4.6 times more income respectively than the income received by functional illiterates (less than three years of education); however, if the influence of the structural variables is eliminated the income differences are lowered to 1.4 and 2.1 respectively.[63]

Other studies recently conducted in several Latin American

countries reinforce the aforementioned results and confirm the existence of segmentation between the formal and the informal sectors of employment. For instance, a study conducted by Belo Horizonte, Brazil, found that men between 35 and 49 years of age with unfinished primary education received incomes in the informal sector that were 55 per cent of those they would have received if employed in the formal sector.[64]

Segmentation between the primary and the secondary labor markets. In countries characterized by a dependent pattern of industrial development, the segmentation of the labor market between the formal and the informal sectors is the most important and general level of segmentation since it divides the labor force between those with some level of job protection and stability, and with incomes higher than the legal minimum wage, and those that derive their subsistence from unstable and low-income economic activities of chronic underemployment. Moreover, this larger level of segmentation is the expression in the labor market of the wider and more pervasive pattern of unequal social and economic development generated by the control and domination of the dependent economy by international monopoly capital. However, there are other levels of segmentation within the organized, formal sector of employment, which is formed, in general terms, by the Center and Periphery sectors of production. The segmentation theory in developed countries describes two basic segments, the primary and the secondary, the primary being subdivided in primary independent and primary subordinate. These three levels of segmentation correspond to the formal

sector of employment, given the inexistence or low quantitative importance of the informal sector of employment in developed capitalist societies with a large welfare system.

Applying this segmentation model to underdeveloped dependent societies, it can be asserted in the first place that the segmentation between the primary and secondary sectors of employment correspond to the quantitative and qualitative differences existing between the Center and the Periphery economic sectors. These differences are expressed in technological, organizational and economic dimensions. Secondly, within the primary labor market, the job segments with a greater or lesser degree of autonomy or subordination correspond in general to the social division of labor between Capital and Labor, expressed in large productive units in terms of the intellectual, professional, managerial labor on the one hand, and technical, administrative, supervisory labor on the other hand. The latter is the type of labor required for the execution of manual labor, which, in turn, is the lowest occupational category of labor, and which forms the secondary labor market. Thus, the main differences between the independent and subordinate segments in the primary labor market are essential differences regarding the relative position of the jobs of those segments in the hierarchical structure of organizational power, and are reinforced through significant differences in remuneration, responsibility and status, and educational requirements for entrance.

Moreover, given the capital-intensity of production in the Center, the expansion of employment opportunities in the primary labor market is very limited. The few available positions are first filled,

through promotion rules, by the already employed labor force. Only in those rare cases when nobody in the firm appears to be qualified or trainable enough for the job available does the firm recur to the external labor market. All primary independent and most primary subordinate jobs are thus highly protected from external labor market competition, and regulated by internal labor markets. Consequently, these jobs become highly segmented, both between each other, given the differential position in the occupational hierarchy, and between the primary and the secondary labor market. This segmentation is produced and reinforced at the same time by large wage, organizational power and status differentials between segments, by organizational barriers to labor mobility between segments, by the power of unions in the distribution of the available jobs, and by different educational requirements necessary for job-entry in each segment.

In order to demonstrate the existence of labor market segmentation between the jobs belonging to the Center and the Periphery economic sectors; that is, between the primary and the secondary labor markets, it is necessary to perform an analysis similar to the aforementioned. A study conducted by Fields and Marulanda in the industrial sector of Colombia concludes that:

> Certain aspects of the industrial structure in Colombia are systematically associated with the wage structure. Higher wages are observed in those sectors characterized by higher value-added per worker, more foreign capital or investment, a higher percentage of large firms, greater capital-intensity and more white-collar workers. Each of these factors has an additional influence beyond that contributed by the other variables.[65]

The objective of this study was the understanding of the

interindustry structure of wages and salaries, and determining the differentiating characteristics of high wage and low wage industries, in a context of considerable diversity in wages, ranging from Col. $5.000 to $125.000 per year (a ratio of 1:25) according to the employment sector, with an average of $21.400 and with a standard deviation of $16.000 (in 1967 Colombian pesos and including wages and fringe benefits).

The structural variables used to explain intersectoral wage patterns are those that define the productive characteristics of the firms and that differentiate between core and periphery firms. These variables are:

- average productivity of workers in the firm
- capital-intensity of production methods
- size distribution of firms within the sector
- importance of foreign capital
- occupational composition of the labor force; white/blue collar workers

Table 21 shows the relative effect of each of these occupational (structural) variables on the average level of remuneration of the labor force. As hypothesized by the labor market segmentation theory, each of the occupational variables appears to be positively related to the average level of remuneration.

By means of a multiple regression model it was also possible to test whether each of the explanatory variables had an <u>independent</u> effect on the average level of remuneration. The results, shown in Table 22, strongly show that variables--productivity of workers, foreign capital and occupational composition of labor force--are highly

TABLE 21

AVERAGE REMUNERATION IN COLOMBIA BY VARIOUS SECTOR CHARACTERISTICS

Characteristic	Average Remuneration AVGREM	Number of Subsectors n
Value-Added per Worker (Col. $)(PROD)[a]		
<25,000	$10,500	2
25,000-50,000	28,700	12
> 50,000	30,000	14
Capital Intensity (HP/L)(CAPINT)[b]		
0-5	$18,300	13
>5	23,300	7
Percentage of Establishments with More than 50 Workers (SIZE)[c]		
<10%	$15,000	43
10-20%	20,600	10
>20%	25,800	8
Foreign Capital or Investment (FOREIGN)[c]		
<5%	$15,000	43
5-10%	19,000	6
>10%	26,900	12
Proportion White Collar (WHITCOL)[d]		
<25%	18,200	34
25-50%	22,700	27
75%	29,700	8

[a]Manufacturing, mining.

[b]Manufacturing only.

[c]Manufacturing, commerce, services.

[d]Manufacturing, commerce, services, mining.

Source: Fields and Marulanda, p. 20.

TABLE 22

MULTIPLE REGRESSION RESULTS WITHIN SECTORS OF THE COLOMBIAN ECONOMY, ALL FIRM CHARACTERISTICS INCLUDED

	Manufacturing	Commerce	Services	Mining
PROD	0.06 (4.93)			0.12 (5.89)
CAPINT	216.51 (3.00)			0.09 (.56)
SIZE	123.60 (2.66)	266.31 (1.39)	56.19 (.63)	
FOREIGN	139.70 (1.98)	270.75 (2.99)	350.29 (5.90)	
WHTCOL	24,279.82 (3.38)	33,557.26 (4.30)	18,165.93 (5.06)	54,395.15 (3.77)
CONSTANT	7,232.59	2,562.03	6,122.15	5,402.30
R^2	.95	.83	.83	.94
N (Number of Subsectors)	20	22	19	8

NOTE: t-statistics in parentheses.

Source: Fields and Marulanda, p. 26.

significant in their effect on the remuneration variable in all economic sectors. In the manufacturing sector, the variables, capital intensity and size, are also significantly related to remuneration, but not so in the mining, commerce and services sectors. Overall, the regression results are very strong. "The proportion of variance explained ranges from 83% in commerce and services, to 95% in manufacturing."[66]

The importance of these results is derived from their consistency with similar results of other studies conducted on intersectoral wage differentials in Colombia and other Latin American countries.[67] An important study by Altimir and Pinera, intended to explore and identify the main determinants of earned income inequalities as well as to assess the relative importance of each of them for nine Latin American countries.[68] The methodology utilized in this study consisted in the grouping of personal and employment variables, which presumably acted in an associated manner in the determination of income inequalities, in order to assess the influence of each group of variables on the total inequality. By means of the Theil decomposition analysis, it was possible to measure the level of association existing between the income inequalities and the dispersions registered by the variables investigated. Personal variables were those important characteristics belonging to or associated with the individuals and which do not depend on the employment performed by each individual at a given moment of time, nor on its geographical position. The variables sex, age, and education and experience fulfill these conditions and were therefore grouped as personal variables. Employment variables were those that

could be changed, on the short term, by personal decisions. These variables were: area, region, occupation, employment status, kind of economic activity, size of the firm, and union membership status.

The results of this type of analysis show that in urban areas the percentage of total inequality explained by these variables was very high (between 80 and 95%), thus corroborating the relevancy of the variables used in the decomposition analysis. The joint contribution of the personal variables to the explanation of earnings inequalities is roughly similar in magnitude to the joint contribution of the employment variables. For employees in large size firms the effect of employment variables on incomes is greater than the effect of personal variables, thus indicating the importance of the labor market segmentation phenomenon. As the authors report:

> If the labor market were unique and perfectly competitive, the average earnings of each group of recipients, homogeneous with respect to all personal variables, should not depend on the employment variables, except for what has been called equalizing differentials . . . Hence, Labor Market Segmentation is defined as the existence of wide differences across activities in the average earnings of groups of workers homogeneous with respect to their human capital endowments. The highly significant contribution of the employment variables, once the impact of the personal variables has been accounted for, suggest the existence of an important degree of segmentation in the labor market.[69]

Summary

The objective of this chapter has been to demonstrate in what ways the process of domination of the manufacturing sector of underdeveloped countries through the investment of monopoly capital (whether of foreign of national origin), and due to its greater economic,

technological and organizational advantages, has generated a fundamental heterogeneity in this productive sector, which becomes divided into a dominant, monopolistic Center (mostly of foreign capital), a subordinated Periphery of competitive enterprises, and a large sector of informal economic activities of low-wages and low-productivity. This division of the productive structure forms the material base for the largest level of segmentation of the labor force; segmentation between the formal and the informal sectors of employment; that is, between the protected, organized, institutionalized labor market of the firms of the Center and the Periphery, and the unprotected, unorganized and temporary labor market of the sector of informal economic activities. A second level of segmentation takes place between the labor market of the dominant, monopolistic Center and that of the subordinated Periphery. This is an inter-sectoral or inter-organizational segmentation of the labor market, that has its origins in the unequal distribution of economic, technological and organizational power between the economic units of the Center and the Periphery. However, there is still another type of segmentation, perhaps the most important one, and which is formed by the social division between intellectual and manual labor in the enterprise, and which is the expression of the position of ownership and control of the different social classes over the means of production.

These large divisions in which the labor force is organized have been interpreted differently by several theories of labor markets. For instance, the neoclassical theory assumes that these divisions are formed by the differential productivity, and therefore wage levels, of

workers with different levels of educational achievement. For the dualistic theory these divisions are the result of the superimposition of modern and advanced production techniques over a backward, or pre-capitalist, productive sector, thus generating large differentials in sectoral and inter-firm productivity and consequently in wage-levels. In a version of the segmentation theory Piore emphasizes organizational over productivity-related factors in the formation of a hierarchical and segmented occupational structure in which the distribution of the labor force is facilitated by a correspondence existing between certain class-based cultural traits and the attitudinal and behavioral expectations of employers for each occupational segment and category. Finally, from a Marxist perspective, both the inter-organizational (sectoral) and the intra-organizational segmentation (division between intellectual and manual labor in the firm), are part of Capital's strategy of dividing the labor force and achieving a greater degree of control over it and over the productive process, with the final objective of reinforcing and reproducing the dominant social relations of production.

The main educational implications of the labor market segmentation theory is that if workers with similar educational achievement levels receive significantly different wage-levels and job-related benefits (thus invalidating the assumptions of the human capital theory), what is then the role of education in production and in occupational allocation? If social mobility via higher income and social status associated with educational achievement, as posited by the human capital theory, is no longer a certainty for increasing numbers of educated workers, is the cause the failure of educational planning

methods in adequately matching the supply and the demand for labor? Or is it that there are some 'exogenous' factors, such as wage-controls or high wages in the public sector of employment, that intervene and distort the normal functioning of the labor market? Or perhaps the inflationary spiral of educational requirements for employment, and the ensuing devaluation of educational credentials, renders useless the strategies and goals of educational planning, by generating a rapidly growing, anarchic, and apparently uncontrollable demand for higher and higher levels of public and private credentialling opportunities.

These are just some of the possible questions on the social and economic role of education in a context of highly segmented and hierarchical labor markets, and on the influence of this labor market on the spiralling inflation of credentials, on the social demand for education and on the main direction and purpose of educational development. In the next chapter, the role of educational achievement, via its formal certification through educational credentials, in the process of occupational selection and distribution, will be analyzed in depth.

ENDNOTES

[1]Ch. Tugendhat, Las Empresas Multinacionales (Madrid: Alianza Editorial, 1973), p. 31.

[2]Cambre Mariño, "Monopolios Norteamericanos y Corporaciones Multinacionales," in UTAL, Las Corporaciones Transnacionales y el Desarrollo Dependiente en América Latina (Buenos Aires, 1975), p. 37.

[3]UTAL, Las Corporaciones . . ., p. 17.

[4]Theotonio Dos Santos, Importancia de la Segunda Guerra Mundial para la Economía Northeamericana (Chile: CESO, 1969).

[5]R. Vernon, Sovereignty at Bay: The Multinational Spread of U.S. Enterprises (London: Longman, 1971).

[6]UTAL, Las Corporaciones . . ., p. 2.

[7]O.I.T., Las Empresas Multinacionales y la Política Social, ed. Hachette (Buenos Aires, 1974), p. 12.

[8]R. Müller, "The Multinational Corporation and the Underdevelopment of the Third World," in Ch. Wilber, The Political Economy of Development and Underdevelopment (New York: Random House, 1973), p. 141.

[9]P. Salama, "Spécificités de L'internationalization du Capital en Amerique Latine," Revue "Tiers Monde," Tome XIX, # 74 (Avril-June 1978).

[10]R. Müller, p. 130.

[11]Constantine Vaitsos, "Patents Revisited: Their Function in Developing Countries," The Journal of Development Studies (1973), p. 12.

[12]Th. Dos Santos, "The Structure of Dependence," in The Political Economy of Development and Underdevelopment, ed. Ch. Wilber (New York: Random House), p. 115.

[13]R. Souza, "La Segmentación del Mercado de Trabajo en Economías Subdesarrolladas," Unpublished manuscript, PREALC, Chile, 1977, p. 62.

[14]Ibid., p. 63.

[15]C.E.P.A.L., La Industrialización Latinoamericana en los años Setenta (Chile: U.N., 1977), p. 23.

[16]Ibid.

[17]M. Piore, Internal Labor Markets and Manpower Analysis (D.C. Heath & Co., 1971).

[18]M. Carnoy, Education and Employment: A Critical Appraisal (Paris: UNESCO-IIEP, 1977), p. 34.

[19]R. Averitt, The Dual Economy (New York: Morton & Co., 1968).

[20]M. Piore and P. Doeringer, Internal Labor Markets and Manpower Analysis (D.C. Heath & Co., 1971).

[21]M. Piore, "Notes Toward a Theory of Labor Market Stratification," in Labor Market Segmentation, eds. Edwards, Reich & Gordon (D.C. Heath & Co., 1975).

[22]B. Harrison, Education, Training and the Urban Ghetto (Johns Hopkins Univ. Press, 1971).

[23]Quoted in R. Souza, "La Segmentación . . .," pp. 41-42.

[24]S. Rosenberg, "The Dual Labor Market: Its Existence and Consequences," Ph.D. dissertation, Univ. of California at Berkeley, 1975.

[25]Quoted in R. Edwards, "The Great Transformation Inside the Firm," Unpublished manuscript, Dept. of Economics, Univ. of Massachusetts, Amherst, 1978.

[26]Bluestone, Murphy & Stevenson, "Low Wages and the Working Poor" (Ann Arbor: Institute of Labor and Industrial Relations, Univ. of Michigan, 1973).

[27]R. Souza, "La Segmentación . . .," p. 37.

[28]D. Apter, The Politics of Modernization (Univ. of Chicago Press, 1965).

[29]E. Hagen, "The Theory of Economic Development," in Economic Development and Cultural Change (April, 1974). J.H. Boeke, Economics and Economic Policy in Dual Societies (New York, 1953).

[30]R.S. Eckhaus, "The Factors Proportion Problem in Underdeveloped Areas," quoted in Economic Development: Principles, Problems and Policies, ed. B. Higgins (New York: W.W. Norton & Co., 1959), pp. 325-333. M. Piore, "On the Technological Foundations of Economic Dualism," MIT Working Paper # 110, May 1973.

[31] L. Thurow, Poverty and Discrimination (Washington, D.C.: The Brookings Institution, 1969).

[32] M. Carnoy, Education and Employment, p. 34.

[33] M. Carter, "Contradiction and Correspondence: Analysis of the Relations of Schooling to Work," in The Limits of Educational Reform, ed. Carnoy & Levin (New York: McKay, 1976), pp. 24-52.

[34] M. Piore, "Notes Toward . . .," pp. 125-142.

[35] Ibid., p. 126.

[36] Ibid.

[37] Ibid., p. 127.

[38] Ibid., pp. 128-130.

[39] Ibid., pp. 132-134.

[40] M. Carter, "Contradiction and Correspondence."

[41] R. Edwards, "The Social Relations of Production in the Firm and Labor Market Structure," in Labor Market Segmentation, ed. Edwards, Reich & Gordon (D.C. Heath & Co., 1975).

[42] M. Piore, "On the Technological Foundations of Economic Dualism," MIT Working Paper # 110, May 1973.

[43] K. Stone, "The Origins of Job Structures in The Steel Industry," in Labor Market Segmentation, ed. Edwards, Reich & Gordon (D.C. Heath & Co., 1975), pp. 27-84.

[44] Panzieri, De Palma, Salvati, Beccalli, Lettieri, Gorz, "La División Capitalista del Trabajo," Cuadernos de Pasado y Presente # 37 (Córdoba, Argentina, 1972). H. Braverman, Labor and Monopoly Capital: The Degradation of Work in the 20th Century (New York: Monthly Review Press, 1974).

[45] R. Edwards, "The Social Relations of Production."

[47] Ibid., p. 9.

[47] Ibid., p. 10.

[48] N. Poulantzas, Las Clases Sociales en el Capitalismo Actual (México: Siglo XXI, 1978).

[49] M. Carter, "Contradiction and Correspondence," pp. 65-68.

[50]Ibid., p. 66.

[51]Ibid., p. 79.

[52]R. Edwards, The Great Transformation Inside the Firm (Basic Books, forthcoming, 1978).

[53]M. Piore, "Manpower Policy," in The State and the Poor, ed. S. Beer and R. Barringer (Winthrop Publishers, 1970).

[54]M. Piore, "Notes Toward . . .," pp. 130-131.

[55]H. Birnbaum, "The Economic Effects of Career Origins," in Labor Market Segmentation, ed. Edwards, Reich & Gordon (D.C. Heath & Co., 1975), p. 116.

[56]Ibid., p. 154.

[57]M. Carnoy, Education and Employment, p. 39.

[58]N. Poulantzas, Las Clases Sociales . . ., p. 225.

[59]Ibid., pp. 240-242.

[60]R. Souza, "La Segmentación . . .," p. 24.

[61]Souza & Tokman, "Income Distribution, Poverty and Employment in Urban Areas," PREALC, Paper presented at the Conference on Distribution, Poverty and Development, Universidad de los Andes, Bogota, 1977.

[62]Ibid., p. 10.

[63]Ibid., p. 20.

[64]T. Merrick, "Employment and Earnings on the Informal Sector of Brazil: The Case of Belo Horizonte," The Journal of Developing Areas 10(3) (April 1976).

[65]G. Fields and N. Marulanda, "Intersectoral Wage Structure in Colombia," Economic Growth Center, Yale University, Discussion Paper # 251, August, 1976, p. 24.

[66]Ibid., p. 23.

[67]Anibal Pinto, "Concentración del Progreso Técnico y sus Frutos en el Desarrollo Latinoamericano," El Trimestre Económico 32(125) (1965). B. Doeringer, "Low Pay, Labor Market Dualism and Industrial Relations Systems," Wage Determination, OECD, 1974. G. Psacharopoulos, "Labor Market Segmentation and Income Distribution: A Policy Oriented Classification," mimeo, 1976.

[68]O. Altimir and S. Piñera, Decomposition Analysis of the Inequality of Earnings in Latin American Countries (Chile: ECLA - World Bank Development Research Center, 1977).

[69]Ibid., p. 31.

CHAPTER III

LABOR MARKET SEGMENTATION AND CREDENTIALISM

General Theoretical Perspective

In the previous chapter it was described the process by which the international expansion of monopoly capital, by concentrating its investments in the manufacturing sector of underdeveloped countries, reproduced in the latter the characteristics of its monopolistic position in the advanced, industrialized countries. Consequently, through the investments of monopolistic firms it was produced a transfer of the dominant technological, economic and organizational characteristics of these firms to underdeveloped countries, thus generating a highly segmented and hierarchical productive structure in the latter. Typically, the main divisions characterizing that segmented productive structure are those that correspond to monopoly capital (whether of a national or international origin), and to the vast sector of informal economic activities. These divisions can be respectively categorized as the Central, dominant sector, the Periphery or subordinate sector, and the Informal sector of the economy. These are then the main divisions in the urban productive structure characterizing the process of reproduction and accumulation of monopoly capital in underdeveloped societies.

This process; that is, the reproduction of the dominant social relations of production, utilizes the strategy of dividing the labor

force, both socially and politically, through the segmentation of the productive activities along the general parameters of the prevailing societal division between intellectual and manual labor. In this manner, an intra-organizational segmentation of the labor force within each unit of production is generated between the activities related to direction, conception and administration (professional, managerial and scientific operations), and those that have to do with the execution and control of the actual process of production (supervisory and manual occupations).[1] This pattern of segmentation of the labor force responds to Capital's strategy in obtaining and securing the organizational loyalty, work motivation and efficient productive performance of the labor force engaged in those occupations of greater importance in production (conception, planning, direction and some technical occupations) and of greater organizational control over the productive process and the subordinate labor force. The control over the large mass of manual workers is effected in the first place through their social and political division, which is the result of their segmentation into occupational categories that are highly unequal in terms of the social conditions of existence accruing to each and that through organizational and educational barriers greatly restrict labor mobility between them; secondly, the control over the labor force is achieved through the mechanisms of direct personal supervision and threat of dismissal,[2] especially in the context of high rates of unemployment and underemployment throughout the economy. This strategy of intra-organizational segmentation is then reinforced by the macrosocial or inter-organizational segmentation of occupations resulting from the unequal

distribution of economic, technological and organizational power between the firms forming the different labor markets of the aforementioned sectors or divisions in the productive structure. In this manner, a two-level segmentation of the labor market emerges; first, between occupations within each productive unit, and secondly, within similar occupations according to their allocation in the different segments of the productive structure. The interaction of this double labor market segmentation is analyzed in this thesis as being the outcome of the strategy of reproduction of the dominant social relations of production; that is, those corresponding to the hegemony of monopoly capital production in underdeveloped societies.

In capitalist societies the occupational allocation of the labor force in the productive structure, through the labor market mechanisms, is the single most important determining factor of its degree of participation in the distribution of wealth and power, that is to say, in the creation of the objective material conditions that generate the possibilities of conflict or alliance and cooperation between different social groups and classes. For this reason it is important to understand the specific characteristics of functioning of the labor market in any given society, to be able then to better understand some of the fundamental factors of the prevailing social dynamics, and above all of the strategy of reproduction of the dominant social relations of production. In this thesis, the analysis of the role in the labor market of the labor force, expressed and measured through the formal accreditation of educational achievement, has been chosen as a focus of study given the recognized importance of educational achievement in

occupational selection, allocation and promotion (occupational achievement). Notwithstanding the importance of age, sex and ethnicity (ascriptive factors) in occupational achievement, especially in societies where the practice of sexism and racism is reinforced through a segmented and hierarchical occupational structure, the educational achievement of the labor force appears to be, in most societies from which empirical evidence is available, the single most important factor of occupational mobility, holding social origins constant. The socio-economic background of the student is then the most important factor determining the degree of educational achievement and its social and economic correlates: income, social status and power.[3]

In this manner, educational achievement can be conceptualized as an intervening variable between social origin and social destination, and thus as a crucial mechanism that facilitates the reproduction of the prevailing social structure. The available empirical evidence on the determinants of educational achievement clearly demonstrates that in most societies, whether rich or poor, capitalist or socialist, educational achievement is directly dependent on the social background of the students. In his important study on education and social mobility, Boudon concludes that the most essential form of inequality is the inequality of social opportunity, that is, the dependence of a son's social status upon his father's, even when it is accompanied by a generalized reduction of inequality in educational opportunity.[4] For the U.S., Bowles reports that children from the 90th percentile in the class distribution (as defined by income, occupation, and educational level of the parents) can be expected on the average to achieve over

four and a half more years of schooling than children from the 10th percentile. This pattern of inequality is further deepened by the fact that among high school graduates the chances of attending college is strongly dependent on the income level of the family.[5] Dobson found out that in Russia, in spite of the greater equalization of access to educational opportunities derived from the continuing expansion of secondary education, the equality of outcomes is strongly related to parents' educational level and social status.[6] In underdeveloped societies, the socio-economic determination of educational achievement is stronger and much more clearly identified given the highly uneven distribution of income and educational opportunities in these countries. A major international comparative study of the determinants of educational achievement in underdeveloped countries concludes that the socio-economic background of students is the most important determinant of academic achievements.[7] By means of illustration of the generalized relationship between those variables, suffice to mention that in a large-scale study recently conducted in the modern industrial sector of Mexico City, it was found that the type of occupation of the father (managerial, professional, non-manual employee, manual worker) was the major conditioning factor of the level of educational achievement of the son, which in turn determined the type of first employment obtained.[8]

However, independently of the social origin of the student, his/her relative level of educational achievement greatly increases the individual opportunities for social mobility due to the increasing importance of educational credentials in the labor market as means of

occupational selection and distribution. In the words of Blaug:

> . . . between any two groups of individuals of the same age and sex, the groups with more education of whatever kind will have higher average earnings from employment than the groups with less, even if the two groups are employed in the same occupational category in the same industry. . . . If we draw a graph of earnings on age for each of the levels of years of schooling completed, the successive "age-earnings" profiles . . . will lie neatly in ascending order without ever crossing each other.[9]

This close and positive relationship existing between the educational level of the labor force and its occupational achievement indicates then the decisive importance of education in the labor market. The main hypothesis to be analyzed in this chapter is that the process of reproduction of the social relations of production, through a social division between intellectual and manual labor which is expressed in a segmented and hierarchical occupational structure, utilizes formal educational credentials primarily as a symbolic value and as an assessment of the different degrees of ideological socialization and behavioral standardization required for effective performance in the occupational hierarchy, and secondarily as an indicator of the degree of development of productive skills and knowledge of the labor force. Consequently, the value of educational credentials for employers is measured in ideological and political terms; that is, in terms of the easy acquisition of the different "ideal" types of labor force required and of the social legitimization of occupational hierarchies (social qualification and distribution role of schooling). For those who are forced to sell their labor power in a segmented labor market, the value of education is a function of the expectations of socio-occupational mobility attributed to the achievement of that level and type of

educational certification that at any given moment in time provides comparative advantage in the labor market competition.

Diagram 1 helps to visualize the existing relationships between the productive structure; in this case, a pattern of dependent industrialization, and the occupational stratification process taking place along a hierarchical and segmented occupational structure, and the functions of education in the reproduction of the social structure; the Occupational Stratification function; the Ideological Domination function; and the Cultural Reproduction function.

Education as a Mechanism of Occupational Stratification

The role of education in the labor market, and consequently its role in the process of social reproduction, has been analyzed from different theoretical perspectives; the technical-function theory and the conflict or Neo-Weberian theory of educational stratification, and the Marxist theory.

The technical-function theory. In general terms, this theory is based on the conception of a high degree of fitness and correspondence between the changes in the productive structure generated by technological development and expressed in terms of changing educational requirements of the labor force, and the changes in the type and level of education offered by the educational system. The expansion and the increasing differentiation of which are thus generated by technologically determined changes in the occupational structure requiring newer and higher levels of skills from the labor force.[10]

DIAGRAM 1

RELATIONSHIPS BETWEEN THE PRODUCTIVE STRUCTURE, THE OCCUPATIONAL STRATIFICATION PROCESS AND THE EDUCATIONAL SYSTEM

Productive Structure		Occupational Stratification	Educational System
Hegemony of Monopoly Capital in Manufacturing Sector		(Social Division between intellectual and manual labor)	Social Reproduction Function.
Pattern of Dependent Industrialization	Heterogeneity in Productive Structure: (Uneven development)	Occupational Heterogeneity: Segmented and Hierarchical Occupational Segments (Segmented Labor Markets)	1- Occupational Selection and Distribution Role (Occupational stratification role of educational credentials)
	- Center	- Primary Independent } Intellectual Labor	2- Political and Cultural Socialization Role (Acceptance of social relations of production--Ideological Domination)
	- Periphery	- Primary Subordinate } Intellectual Labor	
		- Secondary (Manual Labor)	
	- Informal Sector	- Informal	3- Cultural Reproduction Role (Cultural transmission of social inequality)

In more descriptive terms, technological development continuously alters the occupational structure, generating a greater number of high-skill occupations and upgrading the skill requirements of existing occupations. Since formal education provides either the specific or general training needed for the new and higher educational requirements for occupational selection, the functionality of education increases both for the employers and for the labor force. For the former, to the extent that the education of the labor force is seen as increasing its productivity it assumes an important economic value and is remunerated accordingly. For the latter, educational achievement is positively associated with higher earnings and better opportunities in the labor market, as posited by the Human Capital theory. Consequently, the role of education is to contribute to economic development through the greater productivity of the labor force, and to efficiently distribute the latter according to its educational attainment level into the corresponding occupational positions. In this manner, the process of modernization of the productive structure is the determinant factor of the skill requirements of jobs, and consequently of educational requirements, which are acquired through schooling.

From this theoretical perspective the process of social stratification takes place through the objective, neutral and predetermined functioning of the labor market through which is realized the distribution of the labor force in the occupational structure according to the level of fitness and adequacy existing between the skills and knowledge certified by educational credentials and the educational requirements

of each occupational category.

The Neo-Weberian or conflict theory of educational stratification. An alternative theory posits social conflict as the determinant factor both of the occupational structure and of the role of education in that structure. In the words of Collins, one of the most clear exponents of this theory:

> It may be suggested that the "demands" of any occupational position are not fixed, but represent whatever behavior is settled upon in bargaining between the persons who fill the positions and those who attempt to control them. Individuals want jobs primarily for the rewards to themselves in material goods, power and prestige. The amount of productive skills they must demonstrate to hold their positions depends on how much clients, customers or employers can successfully demand on them, and this in turn depends on the balance of power between workers and their employers.[11]

From this perspective, it is not the educational attainment level of an individual in itself the determinant factor of occupational allocation, rather, education interacts with some inherited personal characteristics (age, sex, race) and some socially ascribed attributes (socio-economic status, membership in peculiar status groups), which have become the prime basis of selection in most organizations. Thus, belonging to different "status groups" or subcultures (association groups sharing common cultural patterns), which according to Weber differ significantly in life style, power position and cultural traits, is the first level of social division from which the more complex pattern of social stratification takes place. The importance of educational credentials in this context is that they provide a mark of membership in a particular status group, insure the individual's cultural homogeneity with that group, and in general, may facilitate

entrance into higher status groups.

The competition and struggle between these different status groups for advantage in relation to the scarce opportunities of power, wealth and prestige, takes place primarily within organizations by means of alliances and/or discriminating practices along the racial, sexual, socio-economic and cultural and educational distinctions between groups. Educational differences are in turn closely related to socio-economic and cultural differences, given the socio-economic determination of educational achievement and the cultural homogeneity resulting from common educational experiences, so that education becomes an important mechanism of social stratification via status group membership. Thus, educational requirements for access to positions in the occupational hierarchy, associated with a given status group, may reflect that group's interests in restricting access to those positions to members of other social groups. In this case, educational credentials, in fact, accredit membership in a particular group, not the level of technical competence or academic achievement of an individual.[12]

This "cultural accreditation" role of education reflects, in effect, the differential socialization process that takes place in schools. The main activity of schools is to teach particular status cultures both through the educational content and through the institutional mechanisms of schooling, in such a manner that social expectations, self-image, political consciousness, personality characteristics such as autonomy, initiative, creativity and dependability, and even the modes of self-presentation (style of dress, mannerisms, vocabulary and personal preferences) are defined and taught differently according

to the type of schooling corresponding to different status groups. In this light education can be seen as a status culture itself.

The evidence offered by this theory in support of its main propositions is formed in the first place by the research demonstrating the significant differences in the educational content and in the organization of the learning process existing between the educational institutions corresponding to diverse cultural and economic groups,[13] and secondly the well-established fact that educational attainment is utilized by employers as a means of ideological and cultural selection of the labor force. A large number of studies of employers' practices and values in different countries clearly indicate that the primordial basis for personnel selection is the congruence between the individual's behavioral and attitudinal traits and those considered by employers to be the most adequate for any given type of job or occupational category.[14] Thus, educational requirements for employment reflect primarily the employers' concern for acquiring a well-socialized, standardized, trainable and compliant labor force, and only secondarily reflect their concern for the technical skills or cognitive abilities of the labor force.

This ample empirical evidence is presented by the conflict theory as support for its contention that the principal function of schooling is its cultural socialization function. Through this function is that the hierarchy of status groups in society may legitimately reproduce itself, by means of educational barriers to mobility between occupational hierarchies that correspond to particular status groups. As Collins puts it:

> . . . education will be most important where the fit is greatest between the culture of the status groups emerging from schools, and the status groups doing the hiring; it will be least important where there is the greatest disparity between the culture of the school and of the employers.[15]

Even when the content of the schools is academically or vocationally oriented, the scope and forms of this orientation are functional to the work expectations and social mobility aspirations of particular status groups.

Finally, one of the most important educational consequences of the competition and conflict between different status groups forming the social structure is the emergence of a "contest-mobility" school system. The importance of education in that competition for wealth, power and prestige fosters a demand for large-scale educational opportunities, which over time lead to a general increase in the educational level of the population and to a greater competition between the most highly educated for the few privileged positions in the occupational hierarchy. Consequently, the competitive value of any given educational attainment level diminishes as higher educational requirements are imposed by employers and as higher levels of educational attainment are offered by individuals competing for positions in organizations. As a result of this interaction a spiralling process is formed by increasingly higher educational requirements for employment and higher educational attainment levels offered by the competing individuals and groups. For these reasons, further upgrading of educational requirements for employment are expected in the near future as newly emerging social groups (minority groups in the U.S., or lower-income groups)

successfully demand better and higher educational opportunities as an important part of their struggle for a greater share of wealth, power and social status.

The social conflict theory of educational stratification described so far assumes that the basic unit of society is the associational group sharing common interests and common cultural traits, referred to as "status groups," which differ along economic, political and cultural dimensions around which the inter-group struggle for advantage takes place. This theory is then clearly derived from Weber's conception of power relationships as the crucial variable determining the type and level of educational requirements, since these are the result of the struggle between superordinate groups trying to monopolize positions of privilege and subordinate groups trying to gain access to them.[16]

Also from a Weberian perspective, Bourdieu presents a more specific analysis of the role of education in the reproduction of social structures. Bourdieu's theory attempts to demonstrate the process by which the social structure formed along social classes, shapes and determines the educational sphere (curriculum, social organization of schooling, motivation and rewards for learning, interpersonal interactions, etc.), and how social inequality is thus reproduced through the interaction between class and education. Before describing the fundamental concepts of Bourdieu's theory it is important to note that the peculiar utilization of the concept of "class" by this author seems to represent the formation of social and cultural homogeneity and political cohesion among similar status groups vis-a-vis the competition of other

groups for a greater share of wealth, power and prestige in society. His concept of class thus differs from the classical Marxist concept of class which is based on the objective commonality of interests in relation to the production process of any given group of individuals. The basic concept of his theory is that class-based cultural differences, forming an unequal distribution of cultural capital among groups and classes, are retranslated into respectively different instruments of cultural transmission (pedagogical actions), thus reproducing and legitimating the initial social inequality. "The educational system reproduces all the more perfectly the structure of the distribution of cultural capital among classes (and sections of a class) in that the culture which it transmits is closer to the mode of inculcation to which it has recourse and is less removed from the mode of inculcation practiced in the family."[17]

The cultural transmission of social inequality is effected, according to Bourdieu, through the linkages between the macro-level patterns of social inequality and unequal distribution of cultural capital and the micro-level processes of pedagogy, evaluation and curriculum.[18] These linkages are determined by the "strategies of reproduction" of the middle- and upper-class groups in their effort to improve their position in the structure of class relations by safeguarding or increasing their cultural capital.[19]

Thus, for the intellectual elite the strategy of reproduction of their cultural capital as the basis for their social status consists in preventing the devaluation of their cultural capital, that might occur if academic requirements were closely aligned with the changing

skill needs of the labor market, by emphasizing the intrinsic social and cultural value of liberal arts education and the autonomy of higher educational institutions, and by opposing the vocationalization of instruction in those institutions. This strategy of reproduction is also expressed in the pedagogical and organizational dimensions of education through the valuation of elegance, fluidity and erudition of verbal and written expression, and through the creation of elite institutions of higher education. ". . . the hierarchy of the educational establishments and even within these establishments, the hierarchy of the sectors and of the fields of study arranged according to their prestige and to the educational value they impart to their public, correspond exactly to the hierarchy of the institutions according to the social structure of their public . . . on account of the fact that those classes or sections of a class which are richest in cultural capital become more and more overrepresented as there is an increase in the rarity and hence in the educational value and social yield of academic qualifications."[20]

For the entrepreneurial and business-oriented class that might have accumulated a large economic capital but only a moderate cultural capital, the strategy of reproduction consists in the reconversion of economic capital into academic credentials for the purpose of improving their chances of access to managerial and governmental positions and legitimating that access.

For the class less favored with either economic or cultural capital the educational diploma is more indispensable for increasing the chances of successful outcome in the stiff labor market competition

for the best employment opportunities. For this class, the educational system, by its distribution of cultural capital in a pattern not exactly corresponding to the distribution of economic capital and power (the educational system's "relative autonomy," as Bourdieu puts it), gives the appearance of being a meritocratic system through which those with intelligence and talent could be justly rewarded with a greater share of economic and political power. In the words of Bourdieu:

> The objective mechanisms which enable the ruling classes to keep the monopoly of the most prestigious educational establishments, while continually appearing at least to put the chance of possessing that monopoly into the hands of every generation, are concealed beneath the cloak of a perfectly democratic method of selection which takes into account only merit and talent, and these mechanisms are of a kind which converts to the virtues of the system the members of the dominated classes whom they eliminate in the same way as they convert those whom they elect, and which ensures that those who are "miraculously elected" may experience as "miraculous" and exceptional destiny which is the best testimony of academic democracy.[21]

Thus, for Bourdieu, the increased social demand for educational credentials represents the relative changes in economic and cultural capital between social classes, the value of cultural capital in the process of social reproduction, and the role of higher education in those changes. Consequently, ". . . the value of the diploma, outside the specifically academic market, depends on the economic and social value of the person who possesses it, inasmuch as the yield of academic capital (which is a converted part of cultural capital) depends upon the economic and social capital which can be put to its valorization."[22]

In other words, the possession of a diploma is not a sufficient guarantee in itself of access to the highest positions and certainly not of access to economic power. The social function of academic

credentials is essentially that of legitimating the cultural transmission of social inequality through an educational system which mediates the relationships between classes. The value of educational credentials remains largely within the sphere of the academic market, but ". . . the further one goes away from the jurisdiction of the school system the more the diploma loses its particular effectiveness as a guarantee of a specific qualification opening into a specific career according to formalized and homogeneous rules, and becomes a simple condition of authorization and a right of access which can be given full value only by the holders of large capital of social relationships (particularly in the liberal professions) and is, at this extreme limit, when all it does is legitimate heritage, but a kind of optional guarantee."[23]

Through the conversion of social hierarchies into academic hierarchies, the educational system makes the reproduction of social hierarchies appear to be based upon a natural hierarchy of talent and intelligence, thus fulfilling the legitimation function in a social order increasingly organized under the appearance of justice, retribution, democracy and egalitarianism, and excluding the forceful imposition of the interests of the dominant classes over the subordinate ones.

The Marxist perspective. In his analysis of the process of social stratification Weber emphasizes the relative autonomy of cultural expressions in the formation of group consciousness, and therefore their importance in their cohesion and social functioning as status

groups, forming the essential unit in the social organization. For Marx, the basic societal unit is class, not differentiated and competing groups. Class identity, that is, the commonality of interests in relation to the possession and utilization of the means of production, is the basic objective condition for the formation of commonalities in political or cultural expressions. Thus, the Marxist analysis of the process of social reproduction is based on the conception of capitalist society as being essentially divided into antagonistic classes whose formation and conflict are derived from their respective interests; that is, their relative degree of ownership and control over the means of material production; the social relations of production being then the expression of the class-based organization of production. The reproduction of the dominant social relations of production, through which it is developed the basic contradiction between the profit-seeking motives of capitalists and the human development needs of workers, becomes the general scenario of class conflicts and antagonisms.

Utilizing these basic Marxist analytical categories in order to study the structure of economic life in the U.S., and its relation to the educational sphere, Bowles and Gintis have proposed a theory of reproduction of the dominant social relations of production; that is, of advanced monopoly capitalism, in which the level of education of the labor force, or better, its accredited experience in schooling, performs an important role in the social and political division of the labor force and in the legitimation of the structures of social and economic inequalities.[24]

The resolution of the basic contradictions between Capital and Labor require from the former the division and fragmentation of the labor force and its submission into a highly authoritarian and unequal structure in the production process, with the objective of achieving a greater degree of control over that process and over the labor force. "The totalitarian structure of the capitalist enterprise is a mechanism used by employers to control the work force in the interests of profit and stability."[25] Thus, the labor force is divided and separated into occupational segments that are highly unequal in relation to remuneration levels, degree of job stability, responsibility and autonomy, and possibilities of promotion and advancement. In this manner, within each productive unit there are created the social differentiation and division of the labor force, which facilitate its control and domination by Capital and thus the reproduction of the dominant social relations of production. For this reason, the basic structure of inequality in society is the unequal and hierarchical nature of capitalist relations of production which are expressed and reinforced in the production process through the segmentation of the labor force.

Since this structure of inequality requires of a legitimating ideology of its unequal social and economic outcomes, Bowles and Gintis suggest that the "technocratic-meritocratic" ideology is highly effective in that regard, since, in the first place, the hierarchical division of labor in the enterprise is justified as necessary by purely technical requirements of production (technological determinism) and secondly, the occupational success or failure of any given individual

is solely the objective retribution to his/her personal merit and effort, thus individualizing the causes of the existing inequality. From this perspective, education performs an important ideological role by formally providing the opportunities for accreditation of educational achievement, which is supposedly the objective outcome of the individual's merit and effort. Consequently, since there is a close and direct relationship between educational and occupational achievement, the unequal social and economic outcomes of the distribution of the labor force in a segmented occupational structure, becomes legitimized as being the natural and necessary outcome of the unequal distribution of talent in the population or of the personal merit and effort of any given individual. In this manner, the sources of the unequal distribution of wealth, power and prestige in society become individualized and relativized. In addition, since the hierarchical and segmented division of labor within each productive unit is supposedly determined by the technological requirements of production, its legitimation is facilitated by the allocation of the positions with greater authority and organizational control to the relatively more educated labor force.

> . . . employers find it desirable to vest hierarchical authority in well-educated workers, not only because higher levels of schooling may enable an employee to better do the work at hand or because the more educated seem more fit by their demeanor to hold authority, but also simply because educational achievement--as symbolized by one sort of sheepskin or another--legitimates authority according to prevailing social values.[26]

The role of the educational system in this context is then that of reproducing and reinforcing the structures of inequality

generated in the social relations of production, by means of different socialization patterns by social class and through the class-linked inequality of academic success. This role is implemented through the apparent correspondences between the content and the social organization of schooling and the nature of the social relations in the production process. In the words of the authors:

> The educational system helps integrate youth into the economic system . . . through a structural correspondence between its social relations and those of production. The structure of social relations in education not only inures the student to the discipline of the work place, but develops the types of personal demeanor, modes of self-presentation, self-image, and social-class identifications which are crucial ingredients of job adequacy. Specifically, the social relationships of education and the relationships between administrators and teachers, teachers and students, students and students, and students and their work, replicate the hierarchical division of labor. Hierarchical relations are reflected in the vertical authority lines from administrators to students.[27]

The specific characteristics of this structural correspondence between schooling and work vary significantly according to the social class background of the students, in such a way that a different socialization process by class defines the role of schooling in the intergenerational transmission of inequality. Notwithstanding the important role of differential academic achievement in class reproduction, Bowles and Gintis argue that non-cognitive personality factors are more important than cognitive, academic factors in the allocation of individuals in the occupational and social structure. Attitudinal and behavioral traits are more important than knowledge and skills for the proper performance of productive tasks in the hierarchical occupational structure. Thus, through differential socialization by class the educational system facilitates the reproduction of the prevailing

social relations of production.[28] The role of educational credentials in this process is then to legitimize class differences through the apparently meritocratic system of allocation of individuals in the occupational structure according to their educational attainment level. Educational credentials legitimate the differential distribution of wages, power and responsibility in the workplace and the corresponding class differences in the larger society.

A more specific and practical role of educational credentials for employers is that according to their quality (type of educational institution attended) and their level (length of schooling), they can assess the differential cognitive and non-cognitive effects of the schooling experience of the job applicants in order to select those whose overall personal characteristics, thus judged, seem to best fit the productive and attitudinal requirements of the jobs available in the occupational structure.

Carter and Carnoy have proposed a more specific analysis of the principle of correspondence between schooling and work. These two researchers have complemented and expanded the theoretical vision of Bowles and Gintis through their concrete analysis of the occupational characteristics of the different labor market segments and the educational characteristics of the respective labor force.[29]

The essence of their analysis is the conception of the educational system as a basic institution mediating the contradictions derived from the antagonistic interests between Capital and Labor. On the one hand, Capital's interests reside in extracting the highest possible rate of surplus value from labor power; on the other hand Labor

seeks not only the best possible remuneration to the exercise of its labor power but most importantly, the establishment of egalitarian conditions of existence through the common ownership of the means of production. In the search for the greatest control over the productive process, and consequently over the value produced, Capital creates a social division of labor which reflects and reinforces the private property of the means of production and the derived social hierarchies created in the workplace. These hierarchies correspond in general terms to the processes of conception and direction, administration and supervision, and lastly, the execution of production, which in turn reflect the differences in power, responsibility and income existing between intellectual labor and the different types of manual labor.

These distinctions among the labor force appear not as strata organized along a continuum but as clearly defined occupational segments, with few possibilities of labor mobility between them and with significant differences regarding the degree of importance attributed to each occupation in each segment. This relative productive and organizational importance is then the source of the different degrees of responsibility, autonomy and creativity allowed in each occupation and to which correspond large differences in wages, status, job protection and internal organization of the job process.

According to Carter, any set of structures is said to be internally contradictory if it tends to produce by its own functioning conditions which hamper its own reproduction.[30] This seems to be the case with the hierarchical and segmented occupational structure which fosters the values of individual competitiveness and advancement

(egotism) against the values of cooperation, solidarity and teamwork deemed to be necessary for the efficient execution of production tasks. But contradictions generate their own solutions either by the disappearance of the conditions creating the contradictions in the first place or by the formation of mediating mechanisms. Schooling is conceived then as one of these mechanisms, which in order to effectively mediate the contradictions between the structure of the workplace and the values and behaviors of the labor force, assumes a relationship of correspondence between the former and the latter. "Correspondence is defined as a relation between two processes that mediate contradictions in the dominant process and thereby facilitate 'reproduction' of the structures and institutions of that process."[31]

Through the performance of this mediating role the forms and structure of schooling become determined. Thus, the schooling process replicates, imitates, in its content and institutional mechanisms, the most important dimensions of relations to peers and authority figures, type and scope of knowledge and attitudinal traits necessary for the future work life of the students. Furthermore, the educational system assumes different forms (vocational tracks, levels of schooling) corresponding to the different segments of the occupational structure. Thus, through differential socialization by class the educational system performs a role of forming, sorting, selecting and allocating the class-linked types of labor force into the labor market segments, which in turn reflect and reinforce a class-based division of labor.

More in particular, the correspondence of schooling processes to relations of production in the secondary labor market originates an

educational experience in which critical intellectual faculties are neglected; discipline and respect for authority and expertise are emphasized through vertical and authoritarian teacher-student relations; and which reinforces the modes of self-presentation, self-image and cognitive background of lower-income families; thus reproducing the cultural barriers to academic achievement and socio-occupational mobility. "The structural failure of the system to provide meaningful, remunerative work for a significant percentage of the population thus appears to the child through his/her schooling experience as a failure of ability or motivation."[32] In this manner, the educational experience imbues in the worker the notion that his situation of low-wages, job instability and alienating working conditions is only the result of his personal educational failure, and not of the prevailing societal conditions.

Workers in the primary independent labor market are required a high degree of autonomy, personal responsibility, cognitive development and internalization of the objectives and norms of the enterprise, the more so the higher the position his/her job occupies in the occupational hierarchy, along the general primary labor market distinction between independent and subordinate segments. Correspondingly, the educational system is organized along differential levels and quality of instruction. Primary independent workers have received in their schooling analytical skills and abilities for solving complex problems, for decision making, for assuming leadership and responsibility. Their creativity and self-motivation and internalization of rules has been developed through the system of academic rewards prevalent in the

institutions of higher education. Similarly, the educational experience in institutions of secondary or even higher technical and vocational education prepare workers in the primary subordinate market, for their intermediate, mediating role in the productive structure as supervisors, technicians and middle-level administrators, which require lower levels of skill, creativity, autonomy and responsibility.

In relation to the role of educational credentials these authors agree with Bourdieu, and Bowles and Gintis, that their role is eminently ideological and political due to their importance in the legitimation of the process of reproduction of social hierarchies. More in particular, the mediating role of education depends to a large extent on the efficacy of educational credentials as mechanisms for rationing access to the increasingly scarce high-status positions in the economy, through the representation of this pattern of job assignment as the objective and natural outcome of individual differences in ability and effort. However, since even the mediating mechanisms generate in turn contradictions, ". . . the emphasis on educational credentials as signs of superior ability leads to a massive diversification of effort into the attainment of those credentials, rather than into developing the knowledge and abilities they supposedly represent."[33]

Thus, while correspondence to existing productive structures is the dominant force shaping the content and internal structure of schooling, some of its outcomes may have become dysfunctional to its mediation role. The process of correspondence not only emerges from the contradictions that it attempts to mediate but also generate, in turn,

other forms of contradictions, the most important of which is the over-expansion of the highest levels of schooling produced by the spiraling increase in educational requirements for employment and in the educational level of the labor force, from which a continuing increase in the aggregate demand for the highest levels of schooling opportunities is generated.

In summary, the different theoretical perspectives herein described coincide in attributing a decisive role to educational credentials in the process of occupational selection and distribution, though they differ in the interpretation of how and why. For the technical-function theory the necessary degree of match between the educational level of the labor force and the educational requirements of the different occupations in the productive sector is realized through the labor market, which relies on the educational credentials as an objective indicator of the job-related knowledge, abilities and skills of the labor force, in order to effect its differential selection, distribution and remuneration in the occupational structure. The resulting socio-occupational stratification of the labor force is thus a function of the type and level of educational credentials possessed by the former, according to the expected differential contribution of education to labor productivity. For the social conflict theory the social value of educational credentials in the labor market is determined by the competition between different status groups for access to the scarce privileged positions in the economy in which wealth, power and social status are concentrated. Thus, the increasing utilization of educational credentials as mechanisms of occupational

selection and distribution (occupational stratification) leads to an increase in the aggregate social demand for credentialling opportunities and to an increase both in the total numbers of the educated supply of labor and in the educational attainment level of that supply. As a result of the ensuing spiralling inflation of educational credentials necessary for successful labor market competition, the social valuation of educational credentials, and consequently the social demand for those credentials increase continuously, creating thus the conditions for the next level of inflation of educational credentials. These are thus conceptualized as strategies of reproduction of the dominant groups in society through the role of education in the cultural transmission of social inequality (Bourdieu), or as the mark of membership in those status groups (Collins). In the conflict theory, power appears then as the crucial variable in the setting of educational requirements and in their role in the process of social reproduction.

From the Marxist perspective the main function of educational credentials is the ideological legitimation of the hierarchical and segmented division of labor which reflects and reinforces, at the level of each productive unit, the larger social division of labor between Capital and Labor. Educational credentials are then the meritocratic instruments for legitimation of the unequal occupational achievement of the labor force in a segmented occupational structure. As an integral part of the strategy of reproduction of the dominant social relations of production, the educational system, through its differential socialization pattern, attempts to shape the values and

behavioral patterns of the different groups and classes in society according to their relative position in relation to the social relations of production, hence the educational policies oriented toward achieving the greatest "degree of fit" between the structure and content of education and the cognitive and attitudinal requirements of the different segments of the occupational structure (the correspondence principle).

A critical appraisal. The different theories described so far provide opposing and even conflictive interpretations on the role of education in society in general, and in particular on the process of occupational stratification, since they start from substantially different assumptions on the structure of society and therefore on the functions of education. Moreover, these theories have been elaborated within social and economic contexts that are very different from those of underdeveloped countries, particularly those categorized in this study as of "industrialized underdevelopment."

The technical-function theory, for instance, can be clearly placed within the larger conceptual framework of the functionalist theory of society, according to which societies emerge and are maintained and develop through the continuing search for internal consensus, harmony and equilibrium. From this perspective, the main role of the different social spheres: education, economy, politics, is that of providing society with the necessary conditions for its internal equilibrium and harmonious growth. In relation to the educational sphere its functions are on the one hand the "socialization" of the youth into

the prevailing pattern of values and ideals,[35] and on the other hand to contribute to economic growth through the continuing training of the skilled human resources demanded by the rapid pace of technological innovations (technological functionalism).[36] In contrast, the neo-Weberian conflict theory sees the power relations and the conflict between competing "status groups" in society as the determinant forces shaping the educational system. Consequently, as Collins puts it: "The main activity of schools is to teach particular status cultures, both in and outside the classroom."[37] Imparting technical knowledge is not an important function of schooling since employers are much more concerned with the normative traits (attitudes and behavior) of the labor force than with their cognitive development or technical training.[38] In this respect, this theory resembles some of the critical analyses made from the Marxist perspective on the technical vs. the "social control" function of education. However, the essential conceptual differences between these theories is their unit of analysis about society; "the individual" for the functionalist theory, the "status group" for the conflict theory, and "the class" for the Marxist theory. Therefore, the social role of education is viewed as either the development of the Human Capital of each individual, or as the means for achieving the cultural homogeneity and cohesion of the different "status groups" in their competition for the societal distribution of wealth and power, or as the means of facilitating the reproduction of the dominant social relations of production through the technocratic-meritocratic legitimation of the structures of social inequality.

The critical appraisal of these theories must also be made in

relation to the specific social and economic conditions prevailing in underdeveloped dependent societies. To begin with, it seems clear that contrary to the assumptions of the Human Capital theory, the individual returns to schooling are not the result of the evaluation of the expected potential productivity of the educated worker, realized through the labor market mechanisms, but other exogenous factors among which it is prevalent the two-level segmentation of the labor market, first between the different occupational categories within the enterprise, and secondly between similar occupations depending on whether they belong to one or another of the segments of the productive structure, as it will be demonstrated in this chapter. If the more immediate source of occupational segmentation, and therefore of its correlates such as income distribution and political power, is the nature of the social division of labor in the enterprise and the unequal distribution of economic, technological and organizational power among the different productive units in the economy, then neither the educational profile of the labor force (Human Capital theory) nor the competition among status groups for higher levels of educational credentials (conflict theory) provide an adequate explanation of the role of education in occupational achievement.

In developed and underdeveloped countries alike, the labor process in most activities of the industrial and commercial, and increasingly even in the services sector, has become so fragmented, repetitive, routinary and specific[39] that the possible technical function of schooling tends to disappear and could be easily and efficiently replaced by short, specific on-the-job training requiring only basic

numerical, reasoning and communications skills.[40] As Berg and others have demonstrated, the overeducation of the labor force (measured in years of schooling) relative to the actual, objective educational requirements of most occupations seems to be increasing over time,[41] not only because of the inflationary spiral of educational credentials necessary for employment, as Collins has sufficiently described, but most importantly due to the actual degradation of the nature of work caused by the superdivision and superspecialization of the labor process. And this process corresponds, not to the purely technical needs of production (technological determinism) since production could be reorganized under different social forms, but to the intrinsic needs of Capital to increase, on the one hand, the productivity of labor through the continuing introduction of technical innovations and the increase in the rhythm and the intensity of the production process, and on the other hand, of controlling the labor force by reducing to the minimum its level of productive skills and knowledge necessary for work.[42]

It could be argued that in the context of underdevelopment, skilled or educated labor would receive high rates of return to investments in education, or in other words skilled labor would be a highly profitable commodity in the labor market, given its scarcity and the high demand for its services, and that consequently, the validity of the Human Capital theory would be higher in underdeveloped than in developed countries since in these, exogenous distortions in the normal functioning of labor markets have created an oversupply of educated labor.[43]

This argument seems to be logical and to have "prima facie"

validity since, in general, it is obvious that the process of social and economic development requires highly skilled and educated human resources. But the internal logic and apparent validity of this argument is not sufficient to support the validity either of the human capital theory nor of the technical function theory of educational development for the following reasons: given the general context of technological and scientific dependence there is not a sufficient demand for highly trained scientific and technical personnel in underdeveloped countries. The existing demand is mostly for middle-level technicians and managers that might be able to repair the imported technology and administer the execution of organizational decisions taken elsewhere. Besides, the demand for skilled manual labor has been efficiently satisfied, in most Latin American countries, by large, non-formal training centers linked to industrial needs, such as Colombia's SENA (National Training Services) and similar institutions in Brazil, Mexico, etc. Moreover, even in those cases where there is a limited demand for educated labor, its actual productivity is developed through on-the-job training programs that are quite specific to the firm and to its production process.[44]

For these reasons, the observed positive influence of educational achievement on income levels via occupational achievement, is not the consequence of the higher productivity of educated labor but of the utilization by employers of the level of educational attainment of the labor force as a supposedly meritocratic, therefore legitimate, mechanism for screening, sorting and selecting among the large supply of labor, those with the attitudinal and cognitive characteristics that

would be most desirable for the different segments of the occupational structure. And this determining role performed by employers of educational credentials assumes a greater importance in underdeveloped societies in which, given the characteristics of industrial concentration, the size of the formal labor market; in which there is a minimum legal protection of wages, job stability, and working conditions, and which corresponds in general terms to the primary and secondary labor markets; is very small. In Mexico, for instance, the large-size firms (250+ workers) in which the bureaucratic organization of the labor force is facilitated and which tend to be the most productive and profitable firms, represent only 1.7% of productive units of the industrial sector but contribute 54% of the total product of the sector and employ 42% of the labor force in the same sector.[45] However, although during the 1960-1970 decade the annual rate of growth of employment in these firms was 5.5%, it is expected for this decade an increase of at least 3.5 million in the urban labor force, which means that with the continuing increase in the educational attainment level of the population entering the labor force the competition between educated people for the few available jobs will increase, thus continuing the devaluation of educational credentials and increasing the number of the educated unemployed. In fact, it is estimated that 30% of those graduating from higher education institutions in 1982 will not become part of the active labor force.[46] The problem of educated unemployment appears then as one of the most important social problems of the years to come.

The Role of Education in Segmented Labor Markets

In the previous chapter the existence of labor market segmentation in underdeveloped societies had been demonstrated through the analysis of the occupational structure in several Latin American countries. In the first place, it had been shown the existence of a macro-social level of segmentation between the formal and the informal sectors of employment, and in the second place the characteristics of segmentation between the primary and the secondary labor markets and between the independent and subordinate segments of the primary labor market had been analyzed. Labor market segmentation implies that workers with the same educational characteristics and even in similar occupations receive significantly different remuneration levels and job-related benefits, according to their position in the occupational structure within the firm and to whether they work for the Center, the Periphery or the Informal sectors of the economy. This means that the income differences observed among the labor force are not due to their different educational attainment level, as the Human Capital theory proposes, nor to the productivity differences between economic sectors, as in the dualistic theory of labor markets, but in the first place to the productive and "social control" importance attributed by the employer to each occupational category within the social division of labor in the enterprise, and secondly to the differential economic, technological and organizational power of the firms of the three aforementioned productive sectors, which allow the dominant firms to pay higher wage levels and create better working conditions for the labor

force without reducing their high rates of profitability. Thus, the policies regarding the utilization and organization of human resources (technical division of labor) in any given enterprise are the expression of the productive and hierarchical importance attributed to each occupation in the enterprise. Thus, the primary independent labor market corresponds to professional and managerial jobs, mostly in the modern, dominant, monopolistic sector of the economy, in which administrative, supervisory and some technical jobs form the primary subordinate labor market. Similarly, simple, repetitive, menial, manual jobs form the secondary labor market that is found both in the Peripheral, competitive economic sector, and also in the dominant Center.[47]

The differences in wages, power, prestige, responsibility and autonomy found among the occupations forming the labor market segments are reinforced by means of organizational structures designed to protect the labor force of the privileged segments from wage and employment competition and to obtain a high degree of labor stability and loyalty to the enterprise. These organizational structures are seen from a Marxist perspective as strategies utilized by Capital to insure its control over the production process and the labor force through an apparently objective and technologically-determined division of labor which is organized and regulated by mechanisms of bureaucratic control. For these reasons organizational barriers to job entrance emerge, such as union-controlled recruitment processes or high educational requirements, whose objectives are to limit labor mobility between segments, to protect the labor force and to enlist its loyalty and high productive performance, which in turn is rewarded by means of the internal

selection and promotion patterns of internal labor markets.[48]

According to the above the role of educational credentials of the labor force in the processes of selection and promotion should very a great deal according to the different labor market segments. The reason being that the cognitive, ascriptive, and attitudinal characteristics of the labor force that employers want to obtain for the different occupational segments vary according to the differential importance and valuation of those segments for the employer.[49] Not only the *length* of schooling required of the labor force but also its *quality*, according to a hierarchy of educational institutions, and its *type* (level, speciality) vary according to the occupation or job and to the productive and organizational characteristics of the enterprise. This means that, ultimately, the educational requirements for the different occupations and segments form Capital's strategy to achieve the greater control over and compliance from the labor force. Also, the specific form of utilization of educational credentials by employers for the recruitment and allocation of the labor force among the occupational segments depends on factors such as the rate of expansion of employment opportunities in the different economic sectors, the pace of the process of industrial concentration, the size and the educational profile of the available labor force, and the degree of organization and political consciousness of the latter.

Consequently, given a hierarchical and segmented occupational structure resulting from the process of concentration of monopoly capital in the manufacturing sector of underdeveloped economies, Capital's strategy toward Labor in the dominant, monopolistic sector,

has been the utilization of educational credentials as mechanisms of selection/exclusion of the labor force for the different occupational segments. Due to the increase over time of the general educational level of the supply of labor, and the resulting increased competition for the privileged labor market segments, employers have revised upwards their educational requirements for employment, in the process diminishing the competitive advantage in the labor market of a given level of educational attainment, and thus devaluating the expected economic returns to educational achievement. As a consequence, an inflationary spiral, or an escalation of qualifications, is generated between the higher educational requirements for employment and the increase in the educational level of the supply of labor. In this context, and given the continuing increase in the supply of highly educated labor, the employers' strategy regarding the process of selection and recruitment for the primary independent labor market consists not only in the continuing increase of educational requirements for employment but also in the requirement of educational credentials from selected educational institutions that guarantee for employers the level of cognitive development of the labor force, and most importantly, its adequate socialization in the values and behavioral norms desired for each occupation. In this way, educational credentials must also reflect the social division between intellectual and manual labor in the labor market.

In relation to the primary subordinate labor market, the educational requirements for employment tend to be lower and less select and grant more importance to previous work experience than in the

primary independent segment. However, they are also subject to the same inflationary process, which also affects the secondary labor market, but in this, the educational level of the labor force closely interacts with its ascriptive characteristics (age, sex and ethnic background) and non-cognitive (behavioral and attitudinal traits) in the recruitment process.

Empirical evidence. Next will be presented a summary of the most relevant empirical evidence existing in Latin America on the differential utilization and valuation of educational credentials in segmented labor markets. Possibly, the most precise and systematic research attempt on this problematic is the research program of UNESCO's International Institute on Educational Planning (IIEP) on "Education, the Nature of Work and Educational Planning," from which forms part the study recently conducted by J. Hallak and F. Caillods, titled "Education, Work and Employment in Panama."

The general objectives of this research were to study the mode of utilization of human resources as a function of the characteristics of the enterprises, from an analysis of occupations according to the social relations between them, according to their relation to the productive process and according to the ascriptive, cognitive and non-cognitive characteristics of the labor force. The methodology utilized was the conduction of a survey-interview among the top-management and Directors of Personnel Departments of a representative sample of the sectors of modern economic activity in the two largest urban centers of Panama; Colón and Panama City. With the exclusion of the public

administration sector, the sample was formed by firms employing more than 50 employees in industry, commerce, transportation, banks, and more than 30 employees in the other services sector, including hotels and restaurants.

The content of the interview was structured around the following key areas of inquiry:

(a) How did the characteristics of the enterprises influence the mode of utilization of human resources? Is it possible to construct a typology of enterprises formed by their technical characteristics (sector of activity, type of technology, size) and their social characteristics (property status) and reflecting different systems of organization of work?

(b) What are the criteria utilized by employers for recruitment and promotion for different types of occupations? What is the role of education in relation to ascriptive (age, sex, race, health) and non-cognitive employment criteria? How does this role of education vary according to occupational categories (or segments) and to the type of enterprise, and what are the behaviors or qualities required from the labor force for different occupations?

(c) How does the adjustment take place between the desires and expectations of employers, expressed in terms of required profiles for different occupations, and the actual characteristics of the available supply of labor? How do these characteristics of employers and the labor force evolve according to the employment categories (or segments) and to the type of enterprise?

These key areas of inquiry were, in turn, derived from the

following hypotheses, whose validation was sought in this study:

(a) That for a given level of development of production there is not a standard distribution (repartition type) of employment by occupation. Instead, that distribution of employment depends at the same time on the technical characteristics of production, on the interaction between the supply and demand of the labor force with different levels of educational attainment, and finally, on the internal systems of organization of production.

(b) That there is not *one* but *several* labor markets, each one with its own functioning characteristics in terms of remuneration levels, employment stability and career possibilities.

(c) That within a highly stratified (segmented) labor market, employers do not only assess the level of knowledge and abilities of candidates for employment, but also their aptitudes and attitudes, so that they be consistent with the social position of the employee within the enterprise. These non-cognitive characteristics vary greatly according to the hierarchy of the occupation.

(d) That the role of schools goes beyond the mere inculcation of professional knowledge. Schools perform a crucial role in the development of non-cognitive characteristics which may or may not correspond to those sought for by the enterprises. Consequently, the relations between education and work cannot be reduced to the interaction between the supply and the demand of a given profile of the labor force, but must take into account the relations of correspondence and conflict between those two institutions of the social system.[51]

The most important findings of this study are:

1. In the first place, in spite of the large heterogeneity found in the modes of utilization and organization of the labor force among the enterprises studied, which in turn differ greatly in respect to their property status, size, type of production and technological characteristics, it is possible to conclude that within a given sector of production the property status (public, private, individually owned or by corporation, cooperative or other forms of association) is the single most important determining factor of the organizational structure of work (division of labor), followed by the type of production, the size of the enterprise and its technological characteristics. Thus, whatever the sector of activity, the size, or the technological characteristics, the multinational corporations have a greater percentage of high-level employees, supervisors and administrative personnel (taux d'encadrement) than national enterprises, the reason being the greater complexity of productive technologies, and organizational divisions, and a greater degree of control over the quality of production and over the labor force. The same relation appears between the headquarters and the subsidiaries of corporations and, with some exceptions, between the private and the public sector. In addition, the larger the size of the enterprise the larger the percentage of professional, administrative and supervisory personnel in the total labor force, indicating a more elaborate and complex form of organization of work, a better quality control of production, and of the behavior and performance of the lower-status workers.

2. Even though the hierarchy of occupations depends on the

nature of the individual characteristics of their specific functions, it also depends to a large extent on the modes of access to occupations, which are linked to the characteristics of the enterprise. The occupational hierarchy resulting from the recruitment interactions between employers and workers becomes an essential factor in the segmentation of the labor market. This segmentation is measured by the following parameters:

2.1. The parallelism between the educational profile of the labor force and the hierarchy of occupations. And the important contrasts in the recruitment criteria both from the point of view of the role of ascriptive and cognitive criteria and of the traits imputed to and demanded from each occupation.

2.2. The differences between the characteristics of workers of different occupations, and their conditions of recruitment and work.

2.3. Wage inequalities, measured by their ratios in relation to occupations/base salary, and by the parallelism between the evolutions of those ratios and the hierarchy of occupations.

The empirical evidence on the above is presented next:

2.1. The analysis of the criteria utilized by employers for external recruitment of the labor force indicates that in general education occupies the first place and professional experience the second, for the recruitment of directive, professional and high-level managerial personnel, corresponding to the primary independent labor

market segment in Carter & Carnoy's classification. For the administrative occupations at the intermediate level, for high-level secretaries and for some skilled workers (corresponding to the primary subordinate labor market segment), education occupies the second, the third and the fourth place respectively, in recruitment criteria. For the occupations forming the secondary labor market (unskilled, manual, menial jobs) education occupies the sixth place in recruitment criteria. For these workers at the lower ranks of the occupational hierarchy the most important recruitment criteria are ascriptive traits (age, sex, race, health) and non-cognitive characteristics such as law-obeisance, personal demeanor and sociability. In addition, it is interesting to note that those criteria vary according to the property status of the enterprises; thus multinational corporations privilege most the educational level and the work-related experience of the labor force.

Regarding internal promotions, the most important criteria are those that best guarantee to employers the loyalty, commitment and conformity of the labor force to the productive and behavioral standards required for each occupational category. For this reason, the evaluation of supervisors, and seniority, replace the police certificate as criteria for promotion of workers at the base of the hierarchy. In general, non-cognitive and ascriptive criteria are more important for this occupational segment, both for external and internal recruitment. In addition, it is important to mention that with the exception of those occupations in the lowest ranks of the hierarchy (non-qualified or skilled employees and workers), the prevailing mode of recruitment

was the internal market. In fact, for directive personnel, high-level staff, and administrative personnel in production (supervisors, etc.), the percentages of recruitment through the internal market were 60%, 46%, 84% and 24%, respectively. To which it may be added that for high level staff and administrative personnel the percentage of recruitment through "recommendations" were 31% and 24%, thus increasing the extent of "internal" recruitment for both occupations.[52]

These results are consistent with the expected high valuation by employers of the normative and attitudinal characteristics of the professional, directive and supervisory personnel, since their organizational loyalty and commitment are deemed to be crucial, according to the labor market segmentation theory, for effective control over the labor force and the production process.

The analysis of the data presented in Table 23 shows clearly that the most important traits required of the directive, professional and managerial personnel are: initiative, leadership ability, efficiency, devotion and commitment to his work. It is thus expected from high-level employees to "internalize" the values of the enterprise and to be highly efficient. As any given occupation ranks lower in the occupational hierarchy, the traits of "personal demeanor," "human relations," "personal aspirations" and "initiative" are emphasized, these traits require to a lesser degree the internalization of the norms and values of the enterprise and more respect for the rules and for the expertise of superiors, and also a high productive performance. Finally, the traits required for the workers of the secondary labor market are those of "good character," "discipline," "punctuality,"

TABLE 23

EXTERNAL AND INTERNAL RECRUITMENT: APTITUDES AND ATTITUDES

	Directive Personnel		High-level Staff		Supervision & Administrat. in Production		Low-level Employees in Administr.		Accountants		Secretaries		Skilled Labor		Unskilled Labor		Sales Personnel	
	E	I*	E	I	E	I	E	I	E	I	E	I	E	I	E	I	E	I
Punctuality	17	14	5	2	8	38	7	5	29	22	36	11	32	14	21	4	7	2
Discipline	17	10	6	3	3	32	7	5	26	20	29	8	35	14	22	6	8	0
Human Relations	18	18	6	3	10	33	6	4	21	11	29	13	29	10	11	5	11	3
Initiative	18	22	5	4	8	38	8	4	30	21	35	12	26	13	10	5	6	2
Efficiency	14	20	6	6	7	43	6	3	28	26	33	13	29	15	15	6	7	3
Devotion & Commitment	14	22	6	4	6	41	6	5	30	26	33	12	30	18	20	7	6	4
Personal Demeanor	17	14	3	3	8	17	6	1	28	10	37	8	26	5	13	2	9	3
Communication Skills	15	4	5	1	5	5	8	1	21	6	31	1	21	1	11	0	11	0
Good Character	18	4	2	4	7	6	6	2	25	7	31	2	26	3	18	2	9	0
Personal Aspirations	13	12	-	5	3	22	5	1	24	16	19	8	15	6	6	2	6	2
Leadership Ability	3	27	7	6	3	52	2	5	4	12	0	2	0	2	0	0	0	1

*E = external, I = internal.

Source: Hallak and Caillods, op. cit., p. 137, Table 39.

which imply the acceptance of authority, and the willingness to obey orders without difficulty.

It is important to note at this point that although the conceptual frame of reference of Hallak & Caillod's study is not based on the model of labor market segmentation into primary independent and subordinate and secondary labor markets, proposed by Carter & Carnoy among others, but on the segmentation of the different occupations along an occupational hierarchy formed by directive and professional personnel occupations; administrative, supervisory and technical; and qualified and nonqualified manual workers; plus another category of "peripheral" occupations such as secretaries and sales personnel; however, the level of correspondence and congruence between the findings of this study and those reported by the labor market segmentation studies is remarkable. This suggests, then, a high level of validity in the utilization of a segmentation approach in the study of the relationships between education and employment.

2.2. The differential utilization of educational credentials in the process of selection and allocation of the labor force in the occupational hierarchy can be seen through the analysis of Table 24, which shows the distribution of educational attainment by occupational categories. In addition to the close parallelism existing between educational attainment and ranking of occupations in the hierarchy it is important to note the large dispersion of educational attainment in each occupation, which implies that although education performs an important role in the allocation of the labor force in the occupational segments, this role is mediated by the specific recruitment and promo-

TABLE 24

OCCUPATIONAL HIERARCHY AND AVERAGE NUMBER OF YEARS OF EDUCATION OF THE LABOR FORCE

Average Length of Schooling	Occupational Hierarchy								
	Direction	High-level Staff	Administr. Personnel in Prod.	Employees	Account-ants	Secra-taries	Skilled Workers	Unskilled Workers	Sales
≤ 5	2	-	-	1	-	-	2	4	-
5 <≤ 7	1	-	6	1	-	1	13	20	-
7 <≤ 9	2	-	17	3	3	5	13	10	8
9 <≤ 11	1	-	7	-	1	2	8	3	1
11 <≤ 13	7	2	24	4	23	33	20	-	11
13 <≤ 15	16	2	12	4	34	20	5	-	1
> 15	28	9	9	1	6	2	-	-	-
Average for Sub-total	14.6	15.6	11.7	11.2	13.7	12.6	9.6	6.8	10.4

Source: Hallak and Caillods, op. cit., p. 116.

tion strategy utilized by each employer, which is in turn determined by the relative importance attributed to each occupation by the employer. This importance is defined in terms of the degree of autonomy or subordination that is desirable for each occupation according to its contribution to production and to its social position of control in the occupational hierarchy. Educational requirements for employment are thus only secondarily influenced by the increase in the educational level of the supply of labor, or by labor legislation, or by the power of collective negotiation of the workers.

For the directive and managerial-professional personnel the educational requirements for employment are consistently higher than for the other occupational categories, in which there is a close parallelism between the average length of schooling of the labor force and ranking in the occupational hierarchy. Both findings appear more clearly in multinational enterprises, in other large-size enterprises and in those with complex productive technologies.[53]

A very important finding for the objectives both of this study and of this thesis is that the differential educational requirements for employment in the occupational hierarchy show a statistically significant inflationary tendency over time. For all the occupations studied, even for the occupational categories reputedly not needing a solid educational background (unskilled jobs), employers have greatly increased their educational requirements during the period of 7 years studied. For the sales category, for instance, 79% of employers demanded the completion of secondary education in 1977 vs. 50% in 1970. Furthermore, as Table 25 indicates, this inflation of educational

TABLE 25

EDUCATIONAL LEVEL REQUIRED OF THE LABOR FORCE
(in 1970 and 1977)

Educational Level	Occupational Hierarchy																	
	Directive		High-level Staff		Super. & Admin. in Prod.		Low-level Employees in Admin.		Account-ants		Secre-taries		Skilled Labor		Unskilled Labor		Sales Personnel	
	70	77	70	77	70	77	70	77	70	77	70	77	70	77	70	77	70	77
2 Secondary	2	2	-	-	21	13	20	8	4	2	2	-	24	20	90	75	50	7
4 Secondary	-	-	-	-	10	7	-	-	2	2	2	2	17	16	3	14	-	14
Secondary Completed	35	25	33	25	38	36	40	25	39	26	45	42	36	33	6	8	50	74
7 Technical	-	-	-	-	2	3	-	-	4	-	2	-	4	3	-	-	-	-
8 Technical Completed	7	6	11	8	20	27	40	58	31	37	47	53	19	28	-	3	-	-
9 Higher Ed. Incomplete	5	4	-	-	3	7	-	8	7	14	2	3	-	-	-	-	-	-
11 Higher Ed. Completed	51	63	56	67	7	7	-	-	13	19	-	-	-	-	-	-	-	-

Source: Hallak and Caillods, op. cit., p. 120.

requirements had led to the appearance and expansion of the role of higher education in almost all the occupational categories.

Other studied conducted in Latin America strongly confirm the existence and the importance of the spiraling inflation of credentials. The previously mentioned study on the modern industrial sector of Mexico City[54] provides important data in this regard. The analysis of the occupational history of a sample of 2,400 workers indicates that in the modern, industrial sector of employment it is found a labor force with an educational attainment level that is much higher than in any other sector of employment. This trend is more important in the largest enterprises in the manufacturing sector. This indicates higher educational requirements for employment in this sector. In effect, the educational attainment level most commonly required for low-level, low-skill occupations has become six (6) years of primary education, with a tendency to increase even more since the attainment of several years of secondary education is rapidly becoming the minimum norm for workers in the largest enterprises in the modern sector of employment, and for employees the completion of secondary and/or several years of university-level education.

The increase over time of the educational requirements for all occupational categories, and consequently the exclusion from employment opportunities of people of relatively low levels of educational attainment, can be seen in the fact that 72% of women of 37 years of age or older, who entered the labor market a decade or more ago, have a much lower educational attainment level than younger women, 19 to 24 years of age. Regarding men, only 16% of the younger workers have the low

educational level of 48% of the older workers. Thus, for young workers the expectations of obtaining high positions are directly associated with the achievement of graduate and even post-graduate level education.

These data confirm the process of inflation of educational requirements for employment, especially in directive and professional occupations and in manual occupations, according to this study. Figure 1 allows us to visualize the changes in the levels of schooling required for different occupations over time. This inflationary process implies the need for a continuing increase of the intergenerational educational threshold necessary to insure intergenerational social mobility. In Argentina, for instance, in the manufacturing sector the percentage of the labor force with post-primary education increased from 19.3% in 1960 to 26.4% in 1970. Similarly, the rate of growth of the labor force with general secondary and university-level education during the same period was 4.1% and 5.4%, respectively. In the commercial sector the rate of growth of the labor force with higher education was 11.5%.[55]

The empirical evidence presented so far strongly support the validity of the thesis of "credentialism"; that employers tend to modify their educational requirements for employment independently of the objective educational demands of the occupations, and as a function of the relative productive and social control importance attributed to each occupation in the occupational hierarchy, as well as influenced by the increase over time of the educational achievement level of the supply of labor, thus generating the process of qualification escalation.

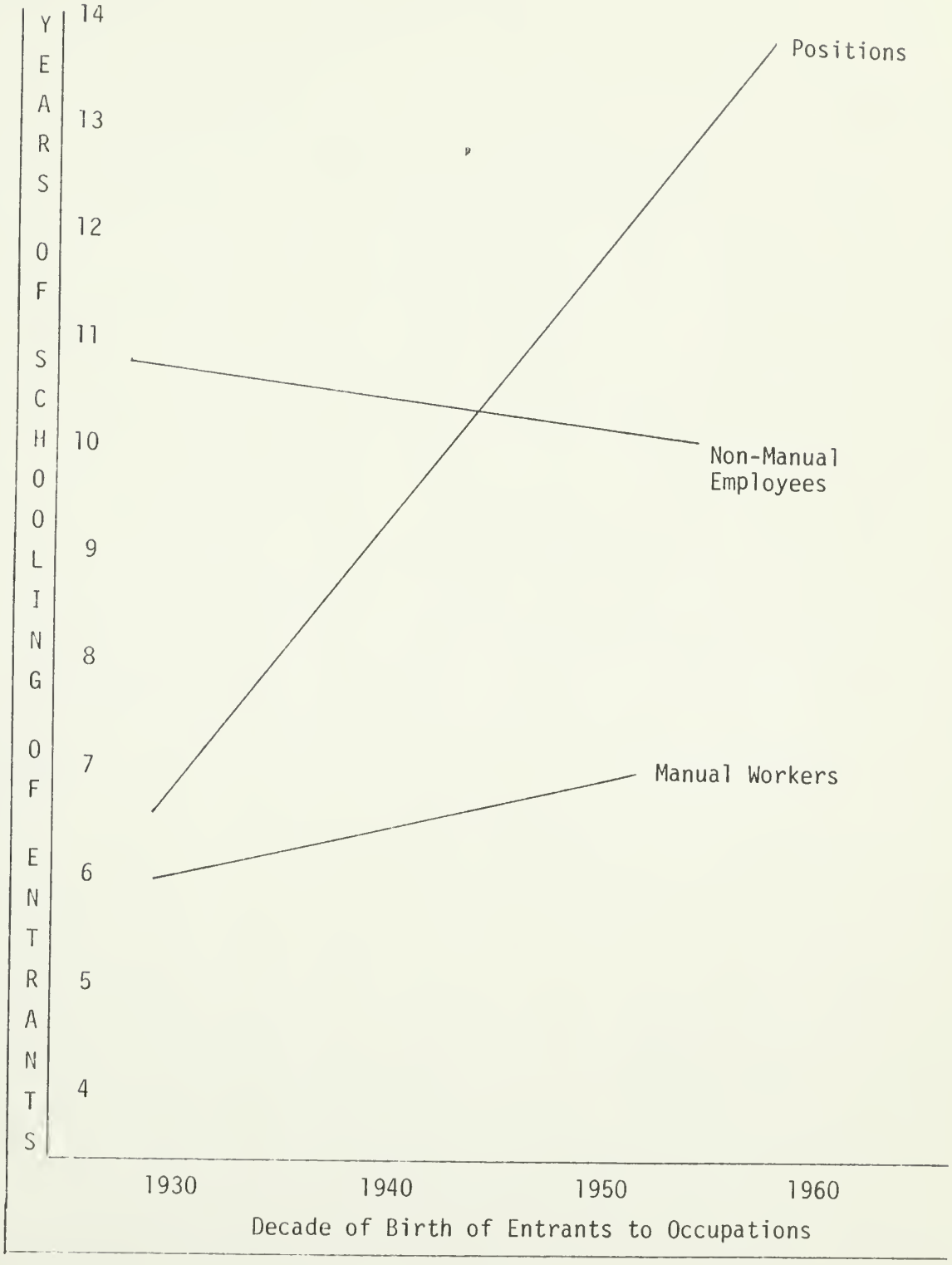


FIGURE 1

CHANGES IN THE AVERAGE SCHOOLING OF ENTRANTS TO GIVEN OCCUPATIONS, BY AGE OF ENTRANTS. (Source: C. Muñoz, et al., op. cit.)

2.3. In relation to wage differentials two important findings merit to be mentioned. In the first place, the occupations with a minimum wage vary according to the enterprise as a function of the different definition of the functions, responsibilities and importance attributed to each occupation in each enterprise. This differential importance is reflected in the position of the occupation in the occupational hierarchy from which the scale of remuneration of the labor force is derived. Secondly, the unequal distribution of wages follows the hierarchy of occupations. The large dispersion of wages around the average, which is larger for the occupations at the higher than at the lower ranks of the hierarchy, indicates the differential importance of each occupation in each enterprise. Table 26 shows the standard wage for each occupation expressed in terms of percentage over the base salary.

As general conclusions of this study, it seems clear that for employers, the educational attainment level of the labor force mainly represents a "normative" value; that is, the expectation that through the socialization process of schooling the labor force may have internalized the appropriate set of behaviors and attitudes for each segment of the occupational structure. In this sense, employers expect a "correspondence" relationship between the different attitudinal requirements of the occupational segments and the different levels of educational attainment of the labor force, which in turn indicates a differential socialization process. The educational characteristics (type and level of educational attainment) of the employers' demand for labor are then derived to a large extent from the non-cognitive,

TABLE 26

DISTRIBUTION OF SALARY RATIOS OF OCCUPATIONS IN RELATION TO BASE SALARY

	N	1st Quartile	Median	3rd Quartile	Average	σ
Directive Personnel	57	290%	470	595%	478	252
High-level Staff	13	245%	265	400%	330	154
Supervision & Administration in Production	74	160%	225	335%	271	179
Low-level Employees in Administration	14	160%	260	290%	284	154
Accountants	67	140%	195	270%	223	123
Secretaries	63	100%	115	175%	140	55
Skilled Labor	61	100%	125	185%	164	102
Unskilled Labor	37	100%	100	100%	113	57
Sales Personnel	21	100%	210	340%	254	149

Source: Hallak and Caillods, op. cit., p. 169, Table 54.

normative characteristics of the occupations hierarchically organized along the axis:

- Directive, managerial and high-level professional occupations
- Intermediate occupations; supervisory and administrative jobs
- Low-level manual occupations
- Peripheric occupations; secretaries, accountants and other readily available semi-skilled labor.

This hierarchy of occupations is in turn the organizational basis for the segmentation of the labor market, which is reinforced by the differential educational requirements for employment in the different segments.

To the extent to which the different socialization processes characteristic of an unequal, class-based educational structure correspond to the different cognitive and attitudinal requirements of the occupational segments, a relationship of "correspondence" characterizes the interaction between schooling and the world of work. The findings of this study clearly validate the existence of correspondence, in particular the close parallelism found between level of educational attainment of the labor force, the occupational hierarchy (categorized in occupational segments), the distribution of wages, and the expected cognitive and attitudinal traits for occupations, expressed through different recruitment and promotion criteria.[56]

Another important finding of this study in this respect is the mutually reinforcing pattern of spiraling inflation of educational requirements and higher educational credentials offered by the labor

force. The importance of this process of qualification escalation is that it allows us to perceive the educational system, not as an independent social institution responding to its own dynamics and objectives, but as mutually interacting with the productive structure in a pattern of correspondence. However, the concept of correspondence does not imply subordination and lack of autonomy of the educational system, its "relative independence" from the forces of the productive structure is the result of the complexity of social, cultural and political forces affecting the objectives and structure of schooling. Consequently, the relation between education and work can also be one of contradiction, either because the objectives of the former do not coincide with the latter's or due to temporal mismatch in the mechanisms of correspondence, as when as a response to the spiraling escalation of qualifications, the educational attainment level of the labor force increases rapidly, thus appearing the serious problems of unemployment and underemployment of the educated, with the ensuing problems of job dissatisfaction, lower productivity and labor indiscipline, which are contradictory to the objectives of Capital.

Hallak and Caillod's research on the relations between education and employment in Panama, herein described, seems to be the most thorough and complete available until now. Other studies on the same topic in Latin America can be considered to be complementary, validate some of its fundamental hypotheses and contribute to the understanding of the credentialling phenomenon through the analysis of the values and attitudes of employers toward educational certifications for employment.

A survey of a sample of Venezuelan managers conducted in 1974 by Bruno and Van Zeyl[57] attempted to find out their values regarding the role of education in the process of national economic and social development, in individual upward social mobility, and in the recruitment and promotion of the labor force. The sample was chosen equally from the public and the private sectors of employment and was formed by managerial personnel with an important role in the formulation of policies regarding personnel management (selection, promotion, control, remuneration of the labor force). The rationale for this sample was derived from the hypothesis that to the extent that the values of these managers toward education and certification have become reflected in personnel management policies, particularly in the educational requirements for employment, their influence on the expansion and strengthening of the credentialing ideology would lead to the further institutionalization and formalization of education into schooling and would thus present a formidable barrier to educational innovation. The results of this study are highly significant in relation to the aforementioned hypothesis. In effect, the managers in the sample attribute a great importance to the continuing expansion of the educational system as a necessary requirement for the social and economic development of the country. Most of them consider that there should be a close correlation between educational certification and occupational allocation, in such a way that to higher educational attainment levels of the labor force should correspond higher wages. Finally, they conceive of education as the most legitimate channel for upward social mobility.

Some of the more concrete findings of this study are very

interesting in that they allow us to understand the strength and extent of the credentialling ideology among that selected sample of managers. Particularly, in relation to the present educational level of the labor force and the role of the educational system in national development:

- 89% agreed (60% in total agreement) to the proposition that: "Higher levels of schooling should be demanded for most jobs."

- 77% agreed (39% in total agreement) that the educational requirements for most jobs should be continually increased.

- Conversely, only 9% agreed (3% in total agreement) that many individuals are overeducated for their jobs.

- and, 88% agreed (65% in total agreement) that the best strategy for increasing workers' productivity is providing more and better education. The slow development of the educational system is then viewed by 78% of the managers as one of the most important problems blocking the development of Venezuela. Consequently, only 23% of them think that the nation should not spend so many resources in such a large and expensive educational system, and only 10% are satisfied with its contribution to the solution of national needs.

These data allow us to infer a high degree of consensus regarding the need to continue the process of expansion of the educational system and of upgrading the educational requirements of the labor force, thus indicating a high degree of valuation and support for the credentialling function of schooling. Table 27 shows the percentual distribution of answers to a set of propositions on the role of educational certification in employment. Answers to items 1 and 2 show a remarkable valuation of educational achievement for personal success. In relation to the role of academic certification as primary requisite for employment (Item 3), 58% of respondents support that role, vs. 29% of

TABLE 27

ENDORSEMENT OF CREDENTIALIZATION

Items	Distribution of Responses (In Percent: N = 126)				
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1. If a young man wants to get ahead in the world he should obtain as much education as he possibly can.	79	15	3	2	1
2. If a young man wants to get ahead in the world, he should leave school early in life and get as much work experience as he possibly can.	2	1	6	12	79
3. People should be selected for positions in government and industry entirely on the basis of their educational qualifications.	24	34	13	16	13
4. When there are too many applicants for a given job educational attainment is a good criterion for selecting the right person.	41	37	14	6	2
5. Educational achievement is more respected than wealth.	51	29	13	3	4
6. No matter how much education you cannot be accepted into the elite social circles unless you have the proper family background.	2	18	16	19	44

TABLE 27 (continued)

Items	Distribution of Responses (In Percent: N = 126)				
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
7. The prestige of an occupation is dependent more than anything upon the amount of education required for it.	21	34	16	13	15
8. The prestige of an occupation is dependent primarily upon the income associated with it.	10	25	25	17	23
9. The more a person learns in school, the more he learns in his work.	33	35	17	10	5
10. In general, those who have more education deserve better paying jobs.	40	33	11	10	7
11. As a highly educated minority, university graduates have every right to expect jobs which are well paid.	37	37	10	7	9

Source: Bruno and Van Zeyl, op. cit.

disagreement. Answers to Items 9, 10 and 11 show a significant agreement with the notion that the higher the educational attainment level of an individual, higher wages and better jobs should accrue to him. The answers to the other items allow us to infer a high valuation of educational achievement as a legitimate source of occupational prestige and social mobility.

In relation to the future expansion of the educational system and to the ideal educational level of the labor force, the responses express a non-qualified support in favor of universal primary education (95%), this percentage is reduced to 77% and 28% for the respective expansion of secondary and higher education for the majority of the population. Ninety six per cent (96%) of respondents agree that most workers should have completed primary education, but only 47% desire the attainment of secondary education for workers. However, 82% consider that most office employees should have secondary education, and a relatively high percentage (73%) agree on the need for higher education for the same occupational category, although only 44% of those are in total agreement with that proposition.[58]

The importance of these data reside in their indicating how one of the most important social sources of the credentialling ideology is the highly positive set of values that employers have regarding the economic and personal development functions of schooling. The latter seems to be more emphasized, particularly in its effect on the formation of personality, in the improvement of character, in the inculcation of civic virtues, and in other non-cognitive, non-vocational effects of the educational experience. Consequently, the authors conclude that the

generalized support for the expansion of schooling and its certification role performs a much more important ideological than economic function in that the managers seem to value more the personality development consequences of having had a lengthy period of schooling than the technical competence or cognitive development that such schooling may have provided to the individual.

A more specific analysis (multivariate analysis) of the attitudes of employers toward the possible alternatives to educational credentials for employment, realized by Bruno and Fischer,[59] suggests that the perception of managers on the implicit merit of the schooling experience is closely related to non-cognitive attributes such as ambition, perseverence, and general "ability." These attributes are considered to be of great importance in an openly competitive socio-economic system in which personal success is channeled and legitimized through meritocratic mechanisms, regarding which the respondents express a great deal of support. From this it could also be inferred that employers do not accept acritically the merit per se of the schooling experience but its value depends on the extent to which schooling, and its credentials, become a measure, a guarantee to the employers of the personal attributes of the labor force, deemed desirable for each hierarchical level, or segment, of the occupational structure.

For this reason, educational credentials, to the extent that they become systematic meritocratic mechanisms, are considered by employers to be a fundamental criteria for recruitment and a guarantee of the occupational success of the employee, more especially in the

absence of reliable alternatives to credentialism or educational certifications for employment. In fact, the managers interviewed in this study indicated their preference for formal educational credentials for employment given the lack of systematization and standardization of alternative strategies such as previous work experience, psychological tests, performance tests, and others.

In this manner, the legitimacy of the ideology of "credentialism" is supported by the apparently meritocratic nature of the process of social mobility. The important implication of this ideology, for the possibilities of educational innovation, is that to the extent that the ideology and practice of meritocratic credentialism become predominant and receive support from influential social groups, the possibilities of implementation of educational alternatives to employment, as well as other curricular and organizational innovations, are greatly reduced.

In relation to the recruitment criteria for directive, managerial personnel the results of this analysis indicate a strong preference for formal educational certificates, although not independently of previous work experiences. Ascriptive criteria, as well as family and social background, do not seem to perform an important role in the process of selection of high-level staff, for which high levels of educational attainment, mostly university education, and former work experience are the most important criteria.

These results assume a greater importance when compared with the responses obtained to propositions regarding the role of educational achievement in the work-related expectations and satisfaction of the

labor force. In spite of their large support to the continuing expansion of the educational system and to the upgrading of the educational level of the labor force, 51% of managers believe that too much education increases the job-related expectations of the labor force, thus creating dissatisfaction and frustration at the workplace (24% were undecided in this respect and 26% in disagreement). But this attitude toward the "overeducation" of the labor force seems to apply more to subordinate than to independent, professional employees. In fact, one half of the managers believe that too much education of the subordinated labor force makes it very difficult to direct and supervise them.

From the above it can be inferred a differential attitude of employers regarding the role of educational certification in the employment process. While for high-level employees the recruitment criteria favor the highest levels of educational achievement and the quality of the corresponding credentials, for subordinate employees there is a maximum desirable level of education (secondary education) over which, the supervision and control of that labor force would become quite difficult. This maximum educational level also applies to the category of manual workers, for whom primary education is desirable but secondary education is a contested and debated issue among managers. Further specification of the differential valuation of educational credentials for the occupational categories is impossible given the methodological limitations of this study.

In short, in spite of the conceptual and methodological limitations of this study, such as the lack of differentiation of the sample of managers by the organizational and productive characteristics of the

enterprises, and the generality of the attitudinal items which did not discriminate between different labor market segments or even between different occupational categories, the results obtained are important from the perspective of providing a general measurement of the predominant values and attitudes of the Venezuelan managerial and directive group, regarding the value and the role of educational certification for employment. These values and attitudes are, in turn, crucial factors in the expansion and strengthening of the credentialing ideology, and of its main educational consequences such as the spiraling escalation of qualifications, the formalization and institutionalization of the realm of education into the limitations of formal schooling, and the related social and ideological obstacles to educational innovation.

In the modern sector of employment of the Dominican Republic a research project was undertaken in 1975, with the following objectives:[60]

- First, to differentiate between the minimum and maximum levels of schooling required for employment in a set of selected occupational categories.
- Second, to identify the role of training and experience in the selection of personnel, independently of its educational level.
- And third, to identify the role of formal education in the criteria for recruitment, selection and remuneration of the labor force.

In each of the 126 enterprises of the modern sector chosen for the sample, interviews were conducted with the directive personnel in charge of personnel management policies, as well as with the employees in charge of the actual process of selection. The industrial, services and governmental sectors of employment were proportionately represented

in the sample according to the respective contribution of each sector to GNP.

In relation to educational requirements for employment it was found that for the five categories of professional occupations studied (architects, engineers, agronomists, sociologists and lawyers), the employers indicated a graduate degree to be the "ideal" educational level, followed by an undergraduate degree (título universitario). For technical and office employees, the employers chose first the undergraduate degree and second the diploma of secondary education. Higher education was considered best for accountants. For skilled workers, with the notable exception of electricians, the educational requirements were much lower; primary education or 8 years of schooling. According to these results, there appears to be an occupational hierarchy defined by the educational attainment level necessary for access to the different occupations. This access is easier for workers with a higher educational level than for those who dropped out of school, in all occupational categories, and among those with similar minimum required educational levels competing for the same position, access is easier for those with a marginal advantage in years of experience. The minimum requirements in terms of schooling and experience are respectively higher for the three main occupational categories utilized in this study: professional, technicians and office employees, and manual workers.

The wage differentials for the minimum and ideal levels of education and experience are higher for the professional occupations and lower for manual workers, in such a way that the ensuing wage

hierarchy closely parallels the educational hierarchy. Wage-levels appear to be linked to specific occupations, and the close association between wages and education is derived from the role of education in educational achievement, not in productive performance.

In relation to promotion criteria it can be concluded that although education performs a crucial role in the chance of access to employment, its importance greatly diminishes as a criterion for internal promotion. Table 28 shows the distribution of promotion criteria utilized by employers for the different occupational categories. It can be seen that seniority, loyalty and initiative are much more important than education for promotion than for all occupational categories. Table 29 further indicates the almost negligible role of education as a criterion for wage increase.

The author concludes that the different levels of education required for the different occupations, and the personnel management practices by which the highest salaries are granted to the persons with the highest relative level of educational attainment in each occupational category, can only be attributed to "social conventions" (convencionalismos) held by the employers, whose origin can be found in the set of social values forming the ideology of credentialism. The practical utility of this ideology for employers resides in that it facilitates and legitimizes the utilization of education as a filter and a screening mechanism for selecting and allocating the labor force with the most desired attributes.

Another study conducted in Venezuela intended to assess the relative impact of the personal and educational characteristics of the

TABLE 28

EMPLOYERS' PREFERENCE OF PROMOTIONAL CRITERIA BY OCCUPATIONAL CATEGORY (Percentages)

Criteria	Professional	Office Employees	Manual Workers
Seniority	54	51	56
Loyalty-Honesty	60	70	60
Initiative	56	74	65
Education	26	14	24

Source: J. Lladó, op. cit.

TABLE 29

CRITERIA UTILIZED BY EMPLOYERS FOR WAGE INCREASES (Percentages)

Criteria	1st Choice	2nd Choice	3rd Choice
Seniority	22	10	12
Honesty	19	36	18
Initiative	35	24	20
Loyalty	2	10	13
Training	4	4	12
Experience	9	11	18
Education	0.4	2	4
Others	9.6	3	3

N = 125 Sum of Columns = 100

Source: J. Lladó, op. cit.

industrial labor force on the level of wages received.[61] By means of extensive occupational-history interviews with a selected group of male employees of three large industries in a Venezuelan city, the study sought to identify the differential impact on income of the following variables: family background, employment experience, formal schooling, non-formal education, and on-the-job training. For all workers in the occupational categories, employees and manual workers, a significant influence on monthly income was found from the variable formal schooling. The general conclusion of this study is that salary benefits were closely associated with formal schooling, more so for employees than for manual workers. The importance of this result from the perspective of the credentialling ideology is that this close association found between formal education and income, after controlling for other personal and educational variables, reinforces in the eyes of the labor force at large the economic importance of formal educational credentials for personal income and for preferential allocation in the occupational hierarchy, or segments. An important consequence of this "credentialling" ideology is that the increased demand for those formal educational opportunities that provide the most advantageous educational credentials for the labor market composition.

These high expectations on the personal economic value of possessing the right type and level of educational credentials leads to the underestimation by students and parents of certain formal educational levels such as vocational education, or of non-formal educational programs such as adult education or skill-training programs, since these are perceived as terminal, socially discriminatory, and providing

second-rate educational qualifications and thus limiting the individual's future possibilities for occupational and social mobility.

Two other studies conducted in Colombia ratify the aforementioned. The first was a follow-up of graduates of that country's large comprehensive secondary schools offering diversified education in industrial, commercial, agricultural and academic-oriented secondary education (Institutos Nacionales de Educación Media Diversificada; INEM). This modality of secondary education is generally regarded as terminal and of inferior quality to the general, academic, secondary education modality, and enjoys low social prestige, in spite of the great economic importance attributed to these institutions by the Colombian government, as a source of qualified workers and intermediate technicians for the diverse economic sectors, according to the policy of "vocationalization" of secondary education in order to insure its best degree of "fitness" and correspondence to the characteristics of the demand for labor.[62]

In effect, the attitudes of INEM's graduates regarding that institution indicate its perception as an "institution for the working class," and as the educational alternative for low-income families. In fact, 67% of graduates interviewed came from families of low-level employees and manual workers. For this type of families the education received at INEM does not insure the occupational success or the social mobility of their sons and therefore tend to look at this educational experience merely as a stepping-stone toward the desired general secondary and higher educational credential. Thus, to the extent that it is economically feasible the graduates of INEM strive toward the

attainment of higher education. In 1975, in the fourth largest city of Colombia, 49% of INEM graduates pursued university-level education.[63] This is a relatively high percentage for this population group, given its low-income levels. Besides, approximately half the graduates were found to be working in occupations not related to their previous training at INEM.

These data allow us then to understand the degree of social rejection of educational forms that are perceived as socially discriminating in relation to those granting the most advantageous educational credentials. For this reason, in spite of the government's policy to vocationalize secondary education through the creation of INEM in 1968, between that year and 1974, the modality of secondary education with the highest rate of growth was the general, academic Bachillerato (baccalaureate) with 105%, while the industrial education modality only grew at a rate of 60.2%. In this manner, the proportion of enrollments in industrial secondary education in relation to total secondary enrollments decreased from 4.4% in 1969 to 3.6% in 1974, while that of general secondary education increased from 69% to 75% during the same period.[64]

These results seem to be highly supportive of the credentialling ideology in that the level of educational attainment that workers "perceive" as being really important for occupational mobility is not the one that provides the supposedly necessary technical training but that of secondary general education, which in fact does not provide the skills, abilities and knowledge (cognitive traits) to the labor force that according to the human capital and the technical function theories

would best enable people for entrance into the labor market. The content of secondary education in most Latin American countries is characterized by its emphases on Humanities or career-oriented scientific contents, is not considered to provide a terminal education and is a preparation for University-level education. However, in spite of the objective fact that general secondary education is not education for the world of work, cognitively speaking, employers seem to value the attitudinal effects on the students of this type of educational experience. Besides, this preference may be facilitated by the increasing supply of an educated labor force in which many applicants may have completed secondary education.

The second study was also a follow-up of graduates of Colombia's largest and most important industrial apprenticeship program (Servicio Nacional de Aprendizaje; SENA).[65] One of the most important findings of this study is that the large proportion of SENA's recruits, "who continue academic secondary studies after finishing a SENA apprenticeship suggests that many may in fact not be satisfied with a skilled blue-collar occupation and may be using the economic leverage provided by their SENA training to move up and out of the blue-collar world."[66] The analysis of the educational aspirations of these students confirm it: 84.2% of SENA's graduates identify the attainment of secondary education as their main goal. Moreover, as Table 30 shows, almost 45% of them had completed at least three or more years, and 5% reported having some university-level studies. As the author reports:

> This is a substantive accomplishment for persons who had already completed an ostensibly terminal apprenticeship program that is given no credit within the formal educational

> system. It is clear that many SENA graduates do not see their education as terminal and still desire a more conventional secondary diploma. Completion of the SENA program facilitates further academic secondary study; SENA graduates can now more readily support themselves and study in secondary schools at night.[67]

Another study conducted in Cali among student-workers at SENA found a relatively high educational attainment level in this group. Over 70% had some years of secondary education, mostly in the general, academic modality. When questioned about their future educational expectations 95% indicated the intention of pursuing formal education at the secondary level, 20% of which expressing the desire to accomplish university-level education.[68]

The SENA program appears then to be a logical choice for students from lower socio-economic backgrounds who could not have financed their secondary education studies. But after completion of SENA training and upon obtaining reasonable employment many graduates pursue academic secondary educational credentials through a vast array of mostly private credentialling opportunities such as night schools, correspondence studies or "distance education," and even test-based validation of secondary education, which have become a highly profitable educational "business" in Colombia's largest urban sector. In fact, it could be argued that one of the most relevant indicators of the increasing social demand for educational credentials is the recent appearance and rapid expansion of all sorts of private educational enterprises granting the most varied types and levels of educational credentials to a rapidly growing and "captive" market, given the fact that most public educational investments center on the expansion of the

traditional types of secondary and university education, which are not readily available or accessible to a large proportion of the working population in search of credentials for occupational mobility.

These empirical data seem to provide ample support for Poulantzas's theoretical analysis of a clear-cut division of the educational system into a 'general culture' education qualifying for intellectual labor and another education 'de-qualifying' for intellectual labor by virtue of the exclusion of the student from the realm of contents, social rituals and cultural implications of intellectual labor. For Poulantzas there can only be two types of education in capitalist society: education for the working class, or 'de-qualifying' education for manual labor, and education for the new small bourgeoisie, or education 'qualifying' for intellectual labor. Thus, it seems logical that for those social groups and classes with social mobility aspirations or with the need for intergenerational reproduction there can only be one type of education that is desirable; the education that best separates them from manual labor through its qualification for intellectual labor.[69]

The Credentialling Ideology

> The possession by an individual of an University degree may or may not indicate his knowledge of Rome's history or of Trigonometry. But what is important about his diploma is that it allows him to achieve a social position which by virtue of its prestige or remuneration is much more desirable than those to which he would have access without it.
>
> Edward Sapir, Encyclopedia of Social Sciences.

The previous sentences illustrate the essence of the ideological-

educational phenomenon which has been referred to herein under the title of "Credentialism." This can be defined in operational terms as the process of social valuation of educational credentials as a necessary requirement for employment or as the assessment of an individual's job-relevant cognitive development and personality characteristics, by means of the type and level of educational credentials possessed. From a theoretical perspective, the nature and the social functions of this phenomenon have been analyzed differently by two major schools of thought; the functionalist theory, with its technical function theory of education version, and the structuralist theory, with its different Weberian and Marxist versions.

(a) For the functionalist theory, the role of guaranteeing the fitness and correspondence between the demand and supply in the labor market, attributed to educational credentials, is not reduced to this narrow technical role, since it needs to be not only efficient but also socially and politically acceptable, consequently it must take place under certain conditions that promise a socially egalitarian outcome. For this reason the credentialling phenomenon finds its support on the system of values and attitudes derived from the socio-political ideology of meritocracy, which explains and legitimizes social inequalities as a function of the different degrees of individual talent, merit and effort. The existence of unequal and hierarchical social structures (for instance, the segmented occupational structure), is perceived under the meritocratic ideology as the natural result of the differential endowment and distribution of talent in the population, and as the result of the effort and merit of individuals

with talent who have been capable of taking advantage of the available social opportunities offered by a competitive society.

Thus, to the extent that ascriptive factors (race, sex, origin) and social factors (wealth, cultural background), that affect the opportunities for individual social mobility, are replaced in a society by mechanisms of reward of individual merit and talent, that society not only will be nearer the ideal of competitive democracy but also will greatly benefit from being managed and directed by its most capable human resources. In this sense, the meritocratic ideal is derived from the liberal ideal of the free competitive market in which the highest economic and social rewards justly correspond to the best producers, or to the individuals that have demonstrated their greater talent and merit. In ideological terms, this conception of the just retribution of individual merits through the free market forces corresponds to the conception of the result of the educational process in terms of the Human Capital of the individual, and of its economic value in the market place.

The certification role of education performs then an ideological function in the liberal-capitalist society, by "individualizing" the occupational failure or success, since given a reasonable degree of distribution of educational opportunities, individual talent and merit become the determinant factors of academic achievement and of its related socio-occupational outcome. By making the individual ultimately responsible for his educational and occupational outcomes the prevailing social structure becomes valid and legitimate and necessary. Thus, the "functionality" of educational credentials is derived from

their role in the maintenance of integration of the social system.

In particular, the close parallelism observed between the occupational hierarchy, the distribution of wages and the educational profile of the labor force, is explained as the result of the uneven educational outcomes reflecting the pattern of distribution of talent and merit in the population. Moreover, since according to the Human Capital theory, there is a direct and positive relationship between level of educational attainment and level of wages earned, due to the higher economic productivity of better educated workers, the observed uneven distribution of wages and incomes is the fair reflection of the differential marginal productivity of workers with different levels of schooling; that is, of development of their human capital.

Thus, for the liberal-meritocratic ideology educational credentials perform the important social functions of guaranteeing and certifying the degree of fitness and correspondence between the characteristics of the individual worker and those of the occupational opportunities, in this manner contributing to economic development, and legitimating wage differentials among the labor force by means of the concept that attributes a direct relationship between educational level and marginal productivity. Consequently, in the absence of essential conflicts between antagonistic groups in society, as the functionalist theory holds, the social function of educational credentials is certainly a technical one and their value becomes then determined by the free interaction of the supply and demand for labor in society. Finally, this labor market interaction is the source of the process of escalation of qualifications due to the high labor market value of the

highest relative levels of educational credentials which have become indispensable for access to the best-paying positions in the private and public sectors of employment.

(b) But the nature and social functions of credentialism will be analyzed differently if society is conceived of as the historical result of the systematic interaction of social traits, patterns or conditions. For the structuralist theory society is an ordered relationship of social traits.[70] Thus, for Weber, social groups (status groups) form the most significant social traits, whose interaction is of competition for the scarce opportunities of acquiring wealth, power and prestige. In this competition, educational credentials become a mark of membership into peculiar status groups, and consequently become a mechanism of selection and exclusion, to the extent that peculiar types and levels of credentials become the means by which certain status groups reinforce and reproduce their privileges over time. For neo-Weberian researchers, such as Collins, the spiralling inflation of educational credentials is then the outcome of the process by which privileged status groups increase over time their educational requirements for membership in order to preserve or increase their share of wealth and power in the face of increasing competition from other social groups. In the same vein, the intergenerational reproduction of social inequality is described by Bourdieu as a process of intergenerational transmission of cultural capital, through differential socialization in the schools, and which is legitimized by the different levels of "quality" of credentials granted by the different educational institutions. Since to this hierarchy of credentials correspond

different occupational outcomes, in this way the cultural-educational transmission of social inequalities takes place. And this power of legitimation of social inequalities is effected through the impositions of meanings to the educational experience. In this, the existing power relationships, which are the basis for its meaning, are concealed by the imposition of pedagogical action, authority and work which are defined by the power relationships that are being concealed in the first place. In this manner, the educational experience, to the extent to which it is defined and dictated by the outcome of power relationships between classes, is in itself an experience in symbolic violence since through it the values and strategies of reproduction of the dominant classes are imposed and inculcated to the dominant classes.[71]

In the words of Bourdieu and Passeron:

> Thus, in a society in which the obtaining of social privileges depends more and more closely on the possession of academic credentials, the school does not only have the function of insuring discreet succession to a bourgeois state which can no longer be transmitted directly and openly. This privileged instrument of the bourgeois society which confers on the privileged the supreme privilege of not seeing themselves as privileged manages the more easily to convince the disinherited that they owe their scholastic and social destiny to their lack of gifts or merits, because in matters of culture absolute dispossession excludes awareness being dispossessed.[72]

(c) Also from Marxist perspective, based on a conception of society formed by antagonistic social classes, due to their different relation to the means of material production; the main function of educational credentials is the legitimization of the role of the educational system in the reproduction of the dominant social relations of

production (Bowles and Gintis), and the mediation of the social contradictions between Capital and Labor through the search for correspondence between the content, the structure and the outcome of the educational experience, and the quantitative and qualitative characteristics of the labor force demanded by the different segments of the occupational structure (Carter and Carnoy).

In his important work on the class structure of modern capitalism, Poulantzas has analyzed the role of educational credentials as that of reproducing and reinforcing at the level of each productive unit the basic social division between intellectual and manual labor.[73] The actual organization of the productive process does not exist either as an autonomous or as an intrinsic expression of the development of productive forces, but the specific forms of domination of the social relations of production over the labor process are those that determine its organizational forms. These are generally misnamed as a "technical division of labor" since they are only the subordinate expression of the social division of labor which is directly determined by the relations of production. At the level of production these relations take the form of an occupational hierarchy and structure, whose "agents" in fact represent different social classes, and which interact with each other under the general conditions of domination and subordination between Capital and Labor. This condition, which has been formed historically through the separation and dispossession of laborers from the means of production, is expressed in the capitalist enterprise by means of the social division between intellectual and manual labor, that is, between the activities of conception, planning and direction and those

of execution of production. In relation to this basic division of labor is that Poulantzas posits the fundamental ideological and political role of the new "petit bourgeoisie" (white-collar labor, or professionals, engineers, highly trained technicians, administrators, and in general all non-productive wage-laborers)[74] as agents of direction, vigilance and control over manual labor (productive wage-labor, skilled or unskilled). "This task of capitalist direction and vigilance is the direct reproduction, within the process of production itself, of the political relations between the capitalist class and the working class."[75]

This task is accompanied by an effective division between intellectual and manual labor, that is to say, by a monopoly of knowledge by some and the corresponding exclusion of most, by the development of science and technology to serve the needs of accumulation and reproduction of capital and not the needs of the workers (productive innovations that increase the rate of exploitation of labor, for instance), and by the development of managerial methods to increase the power of vigilance and control over the labor process. Within this context, and through the materialization of the dominant ideological representations in the production of intellectual labor itself, this becomes the mechanism of reproduction of the dominant social relations in the process of production. In this manner, the intellectual laborer becomes an "organic intellectual" of the bourgeoisie, or a functionary of the dominant ideology, as Gramsci has described it.[76] And the role of education is thus that of reproducing within its sphere the division of intellectual/manual labor, by means of its

differential socialization process. The formation of manual labor consists essentially in its exclusion from intellectual labor. The main role of the capitalist school is not the differential "qualification" of intellectual vs. manual labor, but the "de-qualification" of manual labor by only qualifying intellectual labor. The formation of intellectual labor consists essentially in the inculcation of a system of cultural symbolisms, social rituals, and "secrets" of knowledge, all of which are intrinsic to the concept of "general education," and which serve the main social purpose of separating and distinguishing intellectual from manual labor. On the other hand, the professional formation of workers, their "technical knowledge," are not taught--cannot be taught--in its essentials in the capitalist school. What is mainly taught to the working class is discipline, respect for authority, obeisance, and dependence on the knowledge and expertise of those whose role is that of intellectual labor.[77]

Thus, the capitalist school system cannot be considered to be formed by the progression along a homogeneous structure of different types and levels of education, but as formed by educational "modes" that are essentially different in their objectives, content and internal processes, according to the different classes in society. The new small bourgeoisie is accordingly schooled under educational forms shaped by the social objectives of intellectual labor. Consequently, it can be said that there is an educational mode that is essentially bourgeois and another for the working class. The capitalist school, being formed and reproduced in its content and structure as a function of the social division between intellectual and manual labor, reproduces

in turn this division (separation between schooling and production, linked to the separation and dispossession of workers from the means of production), and performs the important role of qualifying intellectual labor, a role that is particularly characteristic and totally specific in the case of the new small bourgeoisie.

For this reason, the distributional role of schooling among the existing social classes is much more important for this class than for the bourgeoisie or for the working class. In general, the members of these two fundamental classes are not socially distributed by schooling; the bourgeoisie is legitimized in its dominant position by its educational achievement but it does not require it for its reproduction. On the other hand, the working class is sorted, channelled, tracked into its subordinate social position by its socialization into manual labor through its particular type of schooling. But the new small bourgeoisie is a rapidly emerging and expanding class under modern capitalism and its social position is closely linked to its educational achievement via the labor market value of educational credentials. Thus, for this class the school system has rapidly become the dominant ideological state apparatus given its increasing role in the reproduction-distribution-qualification of the labor force, or in other words, in the separation between intellectual and manual labor in the hierarchical organization of production under capitalism. But for the working class as a whole, the educational system does not offer the possibilities of social mobility, for this class the dominant ideological apparatus continues to be the economic apparatus itself; the capitalist enterprise.[78]

From this perspective it appears then that the "credentialling ideology" has its social roots, in the first place, in the importance for the new small bourgeoisie of educational achievement (qualification, certification) for social and occupational distribution (division between intellectual and manual labor), and secondly, in the importance for the bourgeoisie class of legitimating the reproduction of that social division of labor in the enterprise. Consequently, the credentialling ideology is derived from the class structure, and the interactions between social classes, that are specific to modern capitalism.

A very important educational consequence of the credentialling ideology is that independently of whether or not one accepts the functionalist perspective on schooling, or the Weberian "conflict theory" of educational development, or the Marxist categories of analysis of the social reproduction function of schooling, the common conclusion reached is the realization that schooling has become a crucial societal institution that relies on its accreditation or certification processes for either the achievement of the technocratic-meritocratic ideal or for legitimating the existing social structures of inequality. Thus, in modern society schooling increasingly becomes the arena where political projects are implemented, the goal that represents the social mobility aspirations of certain groups and classes, the focus of social discontent and the source itself of social conflicts and contradictions. Hence the fundamental importance of better understanding the intrinsic rationality, or lack of it, of its accreditation process, the forms that it takes through time or as a response to different

societal and political conditions, its different social and political functions, and its educational consequences, since this process performs such a fundamental role in the educational experience and in the social sphere.

According to the theoretical propositions presented in this chapter on the credentialling ideology in general and in particular on the specific role of educational credentials in a hierarchical and segmented occupational structure of production of modern capitalism, and to the available empirical evidence presented herein in the context of underdeveloped, dependent economies, the following conclusions can be presented regarding the credentialling role of schooling in those societies.

Conclusions

1. The structural heterogeneity of the productive sector of underdeveloped countries is the consequence of the technological, economic and organizational hegemony of monopoly capital, which has concentrated its investments primarily in the manufacturing sector of these countries. Heterogeneity in this sector is characterized by its division in three major categories: the Center, the Periphery, and the Informal sub-sectors of economic activity. This productive heterogeneity emerges then as a consequence of the total amount, and the capital-intensity, of monopoly capital investments (whether of national or international origin) in underdeveloped societies.

2. This productive heterogeneity, formed by the unequal distribution of economic, technological and organizational power between the

different units of production, provides the conditions for the emergence of the inter-organizational segmentation of the labor market. That is to say, similar occupational categories, or workers or employees with similar educational attainment levels, receive largely different wage-levels and other job-related benefits according to whether they belong to the labor markets of the center, periphery or informal of the productive structure.

However, this type of labor market segmentation is only the macro-social (inter-firm) expression and reinforcement of the most essential form of segmentation of the labor market, which takes place at the level of each productive unit and which is, in turn, the specific expression and reinforcement of the basic division of labor in society between Capital and Labor. Thus, the large differences in wages and other working conditions found between the different occupational categories forming the hierarchical, unequal and segmented occupational structure in the capitalist enterprise, are an essential part of Capital's strategy of creating large social and political divisions among the labor force along the general parameters of the division between intellectual and manual labor. In this manner, the occupational structure becomes segmented into three main categories; the first corresponding to intellectual labor--planning, conception and management--and has been conceptualized as the primary independent labor market; the second, or primary subordinate labor market, is formed by the intermediate and mediating functions necessary between intellectual and manual labor, and is formed by some technical tasks and those activities of supervision and control over the labor process;

finally, the secondary labor market is formed by the menial, repetitive, rutinary manual activities of production. The main political function of this segmented and hierarchical occupational structure is the greater degree of control that it allows over the labor process and over the appropriation of surplus value, thus facilitating the reproduction of these relations of production. According to Poulantzas, the relations of domination and power within the enterprise are only the expression of the relations between classes, which increasingly assume the form of a pronounced "bureaucratization" and segmentation of the organization of labor in the enterprise and of a profound separation, even a social isolation, between those working in the realms of intellectual labor and those in manual labor.[79] Its economic function resides, on the one hand, in insuring the organizational loyalty and commitment of the skilled and educated labor force necessary for efficient production, and on the other hand in facilitating through a minute division and fragmentation of labor an intensification of the pace of production, thus increasing the productivity of labor.

3. It is then within this context that the role of the educational level of the labor force must be analyzed. From the perspective of the employers, the education of the labor force has both an economic and a normative or "social control" importance. However, the latter seems to have a greater importance since ultimately, the process of reproduction and accumulation of Capital can only take place through those relations of production in which Labor is subordinated to Capital. And this subordination requires not only the control over the labor

process, which is effected through the segmentation of the labor force, but also requires loyalty and commitment to the goals and norms of the capitalist enterprise from the most important segments of the labor force. For this reason, for directive and professional occupations the highest relative levels of educational achievement are required, since for employers these educational levels are associated not only with a given degree of development of productive skills and knowledge, but most importantly with the socialization into the system of values and personal motivation that is more congruent with and necessary for that type of occupational role. As demonstrated through the empirical evidence herein presented, these values and motivations tend to be those of loyalty, internalization of norms, responsibility and initiative.[80]

Following the same analytical reasoning, the educational requirements for intermediate administrative and supervisory occupations should provide to employers with a reasonable guarantee of socialization into the values of respect for the authority and expertise of their superiors, subordination, loyalty and dependability. Finally, for the manual labor force the most important recruitment criteria are not educational but ascriptive (racial, sexual and ethnic characteristics) and attitudinal (obeisance to authority, discipline, sociability, good social behavior), in order to guarantee the necessary compliance and subordination required of manual labor in fragmented, repetitive, simple and menial occupations. For this reason, employers have identified a minimum and a maximum level of educational attainment required for the secondary labor market workers, a minimum to guarantee train-

ability and adequate productive performance, and a maximum to prevent labor insatisfaction and unrest due to overeducation, which interact with the other ascriptive and attitudinal characteristics to secure the most easily controlled and subordinated labor force.

In relation to the economic importance of the education of the labor force it is important to point out, first, the most important contribution to production is made by a very small number of highly trained scientific and technical personnel that produce most of the innovations in productive or administrative processes; secondly, in dependent, underdeveloped societies most of these innovations are "transferred" from advanced developed countries, thus greatly reducing the need for highly educated labor; third, in many regions of the world, particularly in Latin America, it is a well-established fact that most graduates from secondary or higher education institutions have a generalist education which supposedly is not geared toward production needs, and furthermore, those with technical and scientific training are underutilized or work in other types of activities (administrative, for instance); fourth, most of the middle-level technical personnel, for whom there is an effective demand derived from the general situation of technological and scientific dependence, could be rapidly and efficiently trained on-the-job, given a previous education on basic numerical and communications skills and scientific foundations; fifth, for the manual labor force the increasing fragmentation and simplification of production tasks imply the reduction of the educational attainment level necessary for the efficient performance of those tasks: this is the "de-qualification" process that has

been described by Poulantzas as an important mechanism in the continuing domination of the working class through its relegation into an increasingly de-qualified manual labor; sixth, the actual productivity of labor is a complex function of technological innovations, organizational forms of production, capital-intensity of production, incentives and motivation, in which the formal educational level of the labor force is subordinated to the aforementioned variables; and finally, the concept of "educated" or "skilled" labor does not necessarily imply that schooling, or formal education, should be the only means of providing this type of labor. This means that the supposed association between the formal educational attainment level of the labor force and its actual productivity does not correspond to empirical evidence, and thus it forms part of established social conventions which reinforce the prevailing "credentialling" ideology (or ideology of certification).

The above arguments support then the hypothesis of the labor market segmentation theory according to which the educational charac teristics of the employers' demand for labor reflect primarily their interest in acquiring the labor force with those values and attitudes that best guarantee their adaptation to and acceptance of the behavioral norms of the enterprise in relation to the different occupational segments and the prevailing social relations of production; which entail a profound separation between intellectual and manual labor in the enterprise and which are reproduced by the different educational experiences (qualification) of the different social classes that interact in the enterprise, and only secondarily reflect the employers' expectations of productive performance. For this reason, and in the

absence of realiable alternatives, employers utilize educational credentials as indicators of the potential degree of socialization (qualification) of the labor force in the set of values and attitudes that is more congruent with each occupational segment, within the larger and more basic division between intellectual and manual labor. Thus, educational credentials become mechanisms for screening, sorting and selecting, and given the meritocratic ideology attached to educational achievement, they legitimize the allocation of the labor force into the hierarchical and segmented occupational structure, which in addition requires ascriptive, organizational and educational barriers to labor mobility between segments. Ascriptive barriers are the existing patterns of sexual, racial and ethnic discrimination in the labor market. Organizational barriers are formed by internal labor markets with either union or management-controlled job entry and promotion patterns. And educational barriers are the differential educational attainment levels required by employers in each enterprise and each productive sector, for entrance into the occupational hierarchy. All these barriers interact then with each other in the formation of segmented labor markets, which thus emerge as a result both of the structural heterogeneity of the productive sector and of the hierarchical division between intellectual and manual labor in each enterprise.

Other strategies of control over labor depend on the general situation of unemployment and underemployment in the economy, on the prevailing labor legislation, and on the degree of organization and power of the labor force. However, in conditions of high rates of

unemployment, characteristics of underdeveloped dependent societies, the organization of the labor force becomes difficult and the most common strategy of control and subordination of the manual labor force becomes the threat of dismissal, tight personal supervision, and employment and wage competition from the vast reserve of unemployed labor available. In addition, given the high rates of productivity and profitability of the enterprises in the monopolistic sector of the economy, they may choose to pay salaries higher than the average in the economy for all occupational categories, and provide the best working conditions, as a strategy designed to obtain the organizational loyalty, appreciation and commitment of the labor force, thus privileged, over that laboring in the other sectors of the economy.[81]

4. Such is the importance and functionality for employers of the previously described functions of educational credentials that on the one hand they have not developed reliable alternatives to the credentials-based employment process, and on the other hand their strategy in relation to the continuing increase of the educational level of the supply of labor has been the continuing upgrading of educational requirements for employment in all occupational categories, particularly in those corresponding to the sphere of intellectual labor (conception, planning, administration, vigilance and control). This inflation of educational requirements appears to be more predominant in the monopolistic sector of the economy, in its largest firms and in those of more complex and diversified productive process and employing a large labor force, since these are the firms with a higher percentage of intellectual over manual labor, with a greater

need for vigilance and control over the labor process, where most of the educated supply of labor seeks employment, and where educational achievement could most efficiently legitimize the large, hierarchical and segmented division of labor. Within this context, the jobs corresponding to the most privileged occupational segments (those corresponding to intellectual labor) will be subject to intense competition by those members of the new small bourgeoisie with the highest or the most desirable levels of educational attainment, which according to Poulantzas correspond to the class-based educational experience that qualifies for intellectual labor. Consequently, the continuing increase by employers of educational requirements for employment, especially in the most privileged occupational segments, which are those of the primary labor market as demonstrated through the empirical evidence herein presented, has greatly reinforced the distributional role of schooling in the occupational hierarchy (social qualification and distribution role).[82]

5. From the perspective of the employable labor force, but more particularly that belonging to the new small bourgeoisie, if the attainment of a relatively high level of education (or of a specific type of education) is seen as increasing the comparative advantage in the labor market competition for the best employment opportunities, the valuation of educational credentials will then increase proportionately to the perceived effectiveness of that role of schooling (social qualification and distribution role). To the extent that a social consensus is formed about the occupational mobility role of educational credentials, this consensus will be expressed through a rapid increase

in the aggregate social demand for educational credentials in general, and in particular for those providing the highest or the most desirable educational achievement levels; that is, those levels that best serve to separate intellectual from manual labor.

6. This social demand for qualification-granting educational opportunities assumes different forms according to the social and occupational mobility expectations of the different classes in society. Thus, the demand for high levels of educational achievement by the bourgeoisie is derived from its need for legitimacy-granting educational credentials for the reproduction of its dominant social position, but this class does not require this legitimation by credentials, only uses them insofar as the meritocratic ideology of credentialism is prevalent throughout society. For the rapidly expanding new small bourgeoisie the possibilities for intergenerational social mobility, which are directly dependent on the achievement of a position of relative privileged within the basic social division between intellectual and manual labor, are determined by the attainment of increasingly higher educational thresholds as a result of the continuing devaluation of educational credentials in the labor market. During the 1970s, the expansion of private and public educational opportunities, particularly at the secondary and higher levels, has been the result of the political and economic power of this upwardly-mobile social class seeking professional, managerial and directive positions in the occupational hierarchy, both in the private and public sectors of employment, and particularly in the latter given the increasing importance of the size and the role of government in society. For the working class the access

to the basic levels of schooling provides the minimum skills necessary for job competition in the secondary labor market or for subsistence in the informal sector of the economy, since the educational experience for this class largely corresponds to its position as manual and subordinated labor in the occupational structure.

7. But this social qualification and distribution role of schooling via educational credentials must also be analyzed from the perspective of the social and educational contradictions that it engenders, in order to fully comprehend the importance of this phenomenon in society.

According to the previously analyzed concept of contradiction by Carter,[83] any set of structures is said to be internally contradictory if it tends to produce by its own functioning conditions which hamper its own reproduction. The main role of educational credentials, as analyzed in this thesis, has been eminently ideological and political due to their importance in the legitimation of the process of reproduction of the dominant class relations in production; in particular the reproduction of the social division between intellectual and manual labor in the capitalist enterprise. This role depends to a large extent on the efficacy of educational credentials for rationing access (qualifying access) for the new small bourgeoisie, to the occupational segments corresponding to intellectual labor, while at the same time assigning the working class to its subordinate position as manual labor, by means of the representation of this process as the meritocratic and technocratic outcome of individual differences in talent and effort and productivity, and through the de-qualification

of manual labor by its exclusion from the educational experience that qualifies intellectual labor. Thus, the social perception of this social qualification and distribution role of educational achievement has led to a massive increase in the social demand (mostly formed by that of the rapidly growing new small bourgeoisie) for public and private "credentialling" opportunities, which over time has produced a rapid increase in the general educational attainment level of the population at large, and in the educational profile of the supply of intellectual labor in particular. Faced with this situation, employers have increased the educational requirements for employment, mostly in the sector of intellectual labor but also for manual occupations, and have thus generated the first contradiction, which is formed by the increasing difficulties to control the labor process, and to reproduce the division between intellectual and manual labor, due to the increase of labor unrest and dissatisfaction created by the higher social and job-related expectations of a better educated labor force. These expectations are expressed not only in terms of economic reinvindications but most importantly in the questioning of authoritarian and hierarchical social relations of production, in the demand for more participation in decision-making and for a less alienating organization of the labor process. This contradiction appears both in the spheres of intellectual and manual labor, and increasingly in the former given the continuing standardization and simplification of the tasks of intellectual labor and the ensuing division and specialization of knowledge, which are created by the capitalist process of "rationalization" of production at all levels. Thus, as Poulantzas puts it, this is the

process of internal "dequalification" and segmentation of intellectual labor itself in which is reproduced the division between intellectual and manual labor through the creation of a hierarchical division of intellectual labor between directive and subordinate functions.[84] This is the internal segmentation of intellectual labor that has been described by other authors as the division between the primary independent and the primary subordinate labor markets.

A second contradiction is formed by the increasing "demystification" of the meritocratic-technocratic role of education, due to the rapid increase in educational opportunities and in the supply of educated labor, which are accompanied by a massification of the educational experience and the ensuing realization of its actual academic and pedagogical limitations. Moreover, the rapid increase over time of the large numbers of unemployed or underemployed educated labor, has created on the one hand a substantial devaluation of credentials, and on the other hand the dissatisfaction and political opposition of the youth. Although the devaluation of educational credentials generates a demand for increasingly higher educational levels, most of this demand is for education as a "commodity," as a "credentialling" opportunity, not so much as a valuable formative experience in itself. Consequently, educational achievement more and more loses its ideological importance in the legitimation of the hierarchical and segmented occupational structure and is seen as an important strategy of reproduction of the dominant social relations of production. In addition, the rapid expansion of educational opportunities at all levels has blurred somewhat the differences between the type of education for

the working class (de-qualifying education) and the education qualifying for intellectual labor (education for the new small bourgeoisie), thus increasing for the working class the expectations of social and occupational mobility and creating labor unrest and dissatisfaction in the enterprise.

Finally, to close off this chapter, and in a general perspective, it can be said that educational credentials perform a crucial ideological and political role in the social reproduction of the mode of economic accumulation and reproduction of monopoly capital in underdeveloped societies. The reproduction of Capital requires the reproduction both of the class structure from which it emerges, and of the conditions of economic hegemony that produce its accumulation. Thus, to the extent that the ideology of credentiallism becomes efficient in the legitimization and concealment of the power relations creating the segmented and hierarchical occupational structure (social division between intellectual and manual labor), from which the distribution of wealth and power is derived in society; to that extent the reproduction of the class structure that originates the hegemony of monopoly capital will be politically facilitated. In this manner, the educational system, as it assumes a relationship of correspondence with the reproduction needs of the dominant social system, becomes an ideological instrument for the service of the dominant class.

Hence the importance of studying the educational and political consequences of the ideology of credentialism. In the educational sphere this ideology has important implications on the dimension of

"quality" of education due to the effect of the utilitarian individual value derived from the acquisition of educational credentials, within the context of a segmented and hierarchical occupational structure, on the motivation and interest of the students toward their educational experience. The educational content, that is, the definition and limitation of the sphere of what is to be learned, is also effected by the educational policies oriented toward the adequacy and correspondence between the demands of the labor market and the type of education to be offered. Besides, the spiralling inflation of educational credentials is at the same time the expression and the reinforcement of the large social demand for education, which to the extent that it is not predicted with accuracy, nor easily controlled, significantly affect the educational development policies prevailing at a given moment of time, and consequently renders useless the existing approaches and techniques of educational planning.

From a political perspective, the "functionality" of the credentialling ideology in the process of social reproduction in general, and more in particular, in the strategies of control of the labor force by capital, appears as an important barrier to the possibilities of significant curricular and/or organizational innovations, since in the pursuit of educational credentials the realm of knowledge tends to be defined as the content and process of schooling, thus limiting the realm of knowledge by the organizational and curricular limitations of schooling.

Furthermore, the role of educational credentials in the legitimation of the process of reproduction of the dominant social relations

is derived to a great extent from the meritocratic "individualization" of the success and failure, both educational and occupational, that represents the individual acquisition of the educational credential and the ensuing socio-economic advantages and privileges associated with it. Consequently, the certification of the individual academic performance is essentially a socially divisive process, and a competitive process rewarding "individual" achievement, and setting individuals and groups against each other in the struggle for the uneven distribution of wealth and power characteristics of capitalist societies. It is perhaps in the competitive, divisive and individualistic nature of the process of credentialling that can be found the fundamental reason for the lack of common consciousness and unity of the dominated social classes and groups. If this is so, then the credentialling process must be conceived of as a crucial component of the hidden curriculum of schooling and should thus be granted more importance by educators and educational researchers, political activists, and all those with a conception of a better society.

ENDNOTES

[1]N. Poulantzas, Las Clases Sociales en el Capitalismo Actual (Mexico: Siglo XXI., Editores, 1978), pp. 207-232.

[2]R. Edwards, "The Social Relations of Production in the Firm and Labor Market Structure," in Labor Market Segmentation, ed. Edwards, Reich and Gordon (D.C. Heath & Co., 1975).

[3]R. Boudon, "Education and Social Mobility: A Structural Model," in Power and Ideology in Education, ed. J. Karabel and A.H. Halsey (New York: Oxford Univ. Press., 1977).

[4]Ibid., p. 196.

[5]S. Bowles, "Unequal Education and the Reproduction of the Social Division of Labor," in Karabel and Halsey, eds., p. 141.

[6]R.B. Dobson, "Social Status and Inequality of Access to Higher Education in the U.S.S.R.," in Karabel and Halsey, eds., p. 269.

[7]J. Simmons, The Determinants of School Achievement: Educational Production Function Analysis (Washington, D.C.: IBRD, 1974).

[8]Carlos Munoz et al., Antecedentes Sociales, Educación y Empleo (Mexico: Centro de Estudios Educativos, A.C., 1977).

[9]M. Blaug, Education and the Employment Problem in Developing Countries (Geneva: I.L.O., 1973), p. 27.

[10]B. Clark, "Educating the Expert Society," in Chandler, 1962.

[11]R. Collins, "Functional and Conflict Theories of Educational Stratification," in Karabel and Halsey, p. 123.

[12]Ibid., p. 125.

[13]B. Bernstein, "Class and Pedagogies: Visible and Invisible," in Karabel and Halsey, pp. 511-539. P. Bourdieu, "Cultural Production and Social Reproduction," in Karabel and Halsey, pp. 487-510. H.S. Backer, "Schools and Systems of Stratification," in Education, Economy and Society, ed. A.H. Halsey, J. Floud and C.A. Anderson (New York: Free Press, 1961).

[14]R. Collins, "Educational Requirements for Employment: A Comparative Organizational Analysis Study," Unpublished manuscript, 1971.

1971. M.S. Gordon and M. Thal-Larsen, Employer Policies in a Changing Labor Market (Berkeley: Institute of Industrial Relations, U.C.L.A., 1969).

[15]R. Collins, "Functional and Conflict Theories," p. 128.

[16]J. Karabel and A.H. Halsey, "Educational Research: A Review and an Interpretation," in Karabel and Halsey, p. 37.

[17]P. Bourdieu, "Cultural Production," p. 493.

[18]D. Swartz, "Pierre Bourdieu: The Cultural Transmission of Social Inequality," Harvard Educational Review 47 (1977).

[19]P. Bourdieu et al.,"Les Strategies de Reconversion: Les Classes Sociales et le systeme d'enseignement," Social Science Information 12 (1973).

[20]P. Bourdieu, "Cultural Production," p. 494.

[21]Ibid., p. 497.

[22]Ibid., p. 506.

[23]Ibid., p. 507.

[24]S. Bowles and H. Gintis, Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life (Basic Books, 1976).

[25]Ibid., p. 54.

[26]Ibid., p. 82.

[27]Ibid., p. 131.

[28]S. Bowlés, "Schools and Inequality from Generation to Generation," Journal of Political Economy 80 (May-June 1977).

[29]M. Carter and M. Carnoy, Theories of Labor Markets and Worker Productivity (Palo Alto, Calif.: Center for Economic Studies, August 1974).

[30]M. Carter, "Contradiction and Correspondence: Analysis of the Relation of Schooling to Work," in The Limits of Educational Reform, ed. Levin and Carnoy (McKay, 1976), p. 59.

[31]Ibid., p. 76.

[32]Ibid., p. 64.

[33]Ibid., p. 56.

[34]Luiz B. Pereira, "Enterprises Multinationals et les Sous-développment Industrialisée," Revue Tiers Monde, Tome XIX, #74 (Avril-Juin 1978).

[35]T. Parsons, "The School Class as a Social System: Some of its Functions in American Society," Harvard Educational Review 29 (Fall 1959):297-318.

[36]B. Clark, "Educating the Expert Society," in Chandler, 1962.

[37]R. Collins, "Functional and Conflict Theories," p. 79.

[38]R. Collins, "Educational Requirements for Employment."

[39]H. Braverman, Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century (New York: Monthly Review Press, 1974).

[40]D. Jamison et al., The Effectiveness of Alternative Instructional Media: A Survey (Stanford, Calif.: Institute for Communication Research, March, 1973).

[41]Ivar Berg, Education and Jobs: The Great Training Robbery (Boston: Beacon Press). R. Freeman, The Overeducated American (Harvard U. Press, 1976).

[42]N. Poulantzas, Las Clases Sociales en el Capitalismo Actual.

[43]M. Blaug, Education and the Employment Problem in Developing Countries.

[44]M. Zymmelman, "Patterns of Educational Expenditures," World Bank Staff Working Paper #246 (Washington, November 1976).

[45]C. Munoz et al. "Educación y Mercados de Trabajo," Revista del Centro de Estudios Educativos, Vol. XIII, #2, 1978, p. 3.

[46]Ibid., p. 3.

[47]R. Souza, "La Segmentación del Mercado de Trabajo en Economías Subdesarrolladas," Unpublished Manuscript, PREALC, Chile, 1977, p. 62. O. Altimir and S. Piñera, Decomposition Analysis of the Inequality of Earnings in Latin American Countries (Chile: ECLA-World Development Research Center, 1977).

[48]Carter and Carnoy, Theories of Labor Markets and Worker Productivity.

[49]R. Edwards, "The Social Relations of Production in the Firm and Labor Market Structure," in Labor Market Segmentation, ed. Edwards, Reich and Gordon (D.C. Heath & Co.).

[50]J. Hallak and F. Caillods, Education, Travail et Emploi a Panama (Paris: UNESCO-IIEP, 1977).

[51]Ibid., p. 63.

[52]Ibid., p. 149.

[53]Ibid., pp. 115-119.

[54]C. Muñoz et al., Antecedentes Sociales.

[55]J.C. Tedesco, "Educación e Industrialización en Argentina," Proyecto Desarrollo y Educación en América Latina y el Caribe (Buenos Aires: UNESCO-CEPAL-PNUD, 1977).

[56]Hallak and Caillods, pp. 178-190.

[57]J. Bruno and C.J. Van Zeyl, "Innovación Educativa e Ideología Social en un sector de Venezuela," Revista del Centro de Estudios Educativos, Vol. V, #1, 1975, México, pp. 9-32.

[58]Ibid.

[59]J. Bruno and K. Fischer, "Análisis Multivariado de las Actitudes de un grupo de Empresarios frente a las Alternativas de Educación en Venezuela," Revista del Centro des Estudios Educativos, Vol. VI, #3, 1976, México, pp. 69-88.

[60]J.A. Llado, "La Educación y las Prácticas de Empleo de Empleadores Dominicanos," Revista del Centro de Estudios Educativos, Vol. VI, #3, 1976, México, pp. 11-34.

[61]Th. La Belle, "The Impact of Non Formal Education on Incomes in Industry: Ciudad Guayana, Venezuela," in Educational Alternatives in Latin America: Social Change and Social Stratification, ed. Th. La Belle (U.C.L.A., 1975), pp. 257-291.

[62]"Evaluación Externa del Sistema INEM," U. Pedagógica Nacional. Min. Ed. Proyecto Col. 72/031. Bobotá, 1976.

[63]Ibid., p. 93.

[64]DANE, Boletín Mensual de Estadística, #315 (Octubre 1977), p. 9.

[65]J. Puryear, "Recruitment to Industrial Apprenticeship Program in Colombia: The Case of SENA," in Educational, ed. La Belle, pp. 414-433.

[66]Ibid., p. 432.

[67]Ibid., p. 430.

[68]E. Tenti and W. Alexander, "Reflexiones sobre la Capacitación Obrera en Colombia," Mimeographed paper presented at the Annual Meeting of the International Comparative Education Association, March 1978, México.

[69]N. Poulantzas, Las Clases Sociales, pp. 236-242.

[70]Marion Levy, "Functional Analysis: Structural-Functional Analysis," in International Encyclopedia of Social Sciences (Free Press, 1968).

[71]P. Bourdieu and J.C. Passeron, Reproduction: In Society, Education and Culture (Sage Publications, 1977), pp. 3-6.

[72]Ibid., p. 210.

[73]N. Poulantzas, Las Clases Sociales, pp. 207-213.

[74]Ibid., pp. 179-194.

[75]Ibid., p. 211.

[76]A. Gramsci, "El Intelectual y la Organización de la Cultura," Ed. Nueva Era, México, 1976.

[77]N. Poulantzas, Las Clases Sociales, p. 247.

[78]Ibid., p. 251.

[79]Ibid., pp. 252-262.

[80]Hallak and Caillods, Education, Travail et Emploi a Panama, p. 136.

[81]N. Poulantzas, Las Clases Sociales.

[82]Hallak and Caillods, Education, Travail, p. 185.

[83]M. Carter, "Contradiction and Correspondence."

[84]N. Poulantzas, Las Clases Sociales, pp. 252-261.

CHAPTER IV

SOCIAL STRUCTURE, CREDENTIALISM AND EDUCATIONAL DEVELOPMENT: A STRATEGY FOR CHANGE

Chapter I of this thesis had dealt with the general problematic of the gigantic educational expansion that took place in underdeveloped countries beginning in the 1950s, and with some of its most important results and educational consequences.

At the end of almost three decades of rapid expansion of the educational systems its main objectives of social and economic development not only have not been achieved but some of the educational problems that were to be solved seem to have suffered a relative worsening over time. In spite of the fact that in general the educational opportunities at all levels have increased rapidly, as well as the respective school-age enrollment levels, not only large inequalities in access to educational opportunities persist (between men and women, between regions within a country, between ethnic and racial groups, between urban and rural areas and between income levels), but also the possibilities for social mobility have notably deteriorated at the middle and lower levels of educational attainment due to the observed fact that a large percentage of the new educational opportunities have concentrated at the higher levels of educational attainment. Consequently, in spite of the large increase in educational opportunities and of the greater participation of middle and

low income groups in schooling the inequalities of income and social mobility have increased.

But this phenomenon is not characteristic only of dependent underdeveloped societies. Boudon has demonstrated that in France and in the other liberal, industrialized countries belonging to the OECD (European Organization for Cooperation and Development), the unequivocal historical tendency of their educational systems is toward a constant reduction of educational inequality.[1] This tendency has also been demonstrated by Thurow for the U.S.[2] However, in these countries it is also observed that the concentration of income increases and the probabilities of social mobility become concentrated in those persons with the highest relative levels of educational achievement. Consequently, the increase in the rates of school-age enrollments, which is an indicator of educational inequality, was accompanied by an increase in economic and social inequality. The most important aspect of this analysis is that both Boudon and Thurow, among others, consider that there is not a correlation between those two variables but a cause-effect relationship, which is conceptualized by Boudon in the following manner: the social structure, defined by the distribution of the available social positions and their corresponding distribution of income and social status, is stable over time; that is, it is not changed rapidly by political and technological factors, however, the distribution of educational opportunities not only increases rapidly but tends to concentrate at the higher levels of educational achievement due to the observed fact that the higher the level of education the greater the growth of

school attendance from one period to another. Consequently, given that those individuals with the highest level of educational achievement tend to receive the 'best' (more prestigious, better paid, more powerful) social positions, these then tend to concentrate at the higher levels of educational attainment. In time, the structure of social opportunities associated with middle levels of educational achievement deteriorates considerably, those at this level have a lower probability of reaching the privileged positions in society. And at the lower levels of schooling offered in society the social opportunities deteriorate continuously over time, and the higher the relative level of schooling offered in society the greater the deterioration of the social mobility probabilities of the lower levels.[3]

Within this social context; in which the independence or autonomy of the economic and occupational structure from the changes in the educational stock of the population is quite obvious; the expansion of education has proved ineffective for reducing economic inequality, which had been one of the fundamental socio-political objectives that stimulated the large public expenditures in the expansion of the educational system in underdeveloped countries.

The aforementioned deterioration of the probabilities for social mobility associated with middle and lower relative levels of educational attainment generates as a social consequence a large increase in the aggregate demand for higher and higher levels of educational attainment, which implies that there is an increasing need to stay a longer period of time in schooling in order to be able to

accomplish social aspirations which also increase as a function of schooling. This is the phenomenon that Solari and others have described as the higher intergenerational 'threshold' necessary for intergenerational social mobility.[4]

Several international development organizations, as well as researchers belonging to diverse theoretical perspectives, have recognized these educational issues as some of the most important factors determining the general pattern of educational development and its limits for reform. The World Bank, for instance, in its important document of analysis of the worldwide educational problematic identified the inflationary spiral of credentials for employment as a priority problem of educational development, and proposed educational policies oriented toward the limitation and rationing of the access to the highest relative levels of schooling and toward the achievement of the best possible degree of fit between the product of the schools and the demands of the productive system by means of the increasing technification and vocationalization of the schools.[5] From the theoretical perspective, Collins has conceptualized the inflationary spiral of credentials as being determined by the competition between different and opposing 'status groups' in society for a greater share of wealth, power and prestige, which are distributed through formal organizations which utilize credentials as marks of group membership, as indicators of cultural homogeneity, and thus made educational credentials become an object of acquisition for achieving social mobility.[6] Through several studies attempting to validate the conflict theory of educational development, Collins has contributed with

abundant and meaningful empirical evidence toward the refutation of the technical-function theory of educational development and its correlate the Human Capital theory, which had had considerable influence in the formulation of the objectives of economic development expected of the educational expansion. Ronal Dore, in turn, develops the 'late development effect' theory, according to which the later in world's history a country's development drive starts, the more deeply entrenched and the more disastrous the consequences are of the tendency toward qualificationism, for schooling for qualification-earning, which in his words is: ". . . ritualistic, tedious, suffused with anxiety, boredom, destructive of curiosity and imagination: in short, antieducational."[7] For Dore, the consequences of using schools as the chief means of sifting in each generation those who get the prize jobs and those who don't, obliterates the school's ancient function of providing education, while at the same time labelling the majority of primary education students, often for life, as 'failures' or drop-outs, and arising high social aspirations among secondary and higher education students who present a relentless pressure for more and more education (qualification escalation), in spite of, or probably because of the growing numbers of graduates for whom no slots can be found either in the state bureaucracy or in the productive sector.[8]

For Louis Emmerij, the expansion of education has meant, first, 'more of the same' in the sense that the quantitative expansion has not been accompanied by significant changes in the content or nature of schooling, and secondly, that given the increased competition among the relatively better educated for the scarce coveted positions

available in the economy, many of those who do not obtain those positions take lower-ranking jobs, thus creating the problems of relative 'over education,' increasing underutilization and even waste of human resources, artificial inflation of educational requirements for entrance to employment opportunities, and the ensuing escalation of the social demand for higher and higher levels of educational credentials.[9]

The aforementioned authors are representatives of the growing consensus among educational researchers about the results of the large educational expansion of the past two decades in underdeveloped countries. These results have already been described in detail in Chapter I and at this point they will only be enumerated in general terms in order to facilitate the analysis of its causes.

To begin with, even though the educational opportunities have greatly increased during the past two decades, these have concentrated at the highest relative levels of schooling and have generated a greater educational inequality in relative terms. Thus, in Latin America, the annual rate of growth of the schooled population during the 1960s (6.1%) doubled that of the school-age population (3.1%);[10] however, during the same period higher education had the largest average rate of growth (10.9%), followed by secondary education with 10.7% and primary education with 5.2%.[11] As a result, at the secondary and higher levels the annual rate of growth more than trebled that of the respective school-age population. But on the other side of the spectrum high rates of total and functional illiteracy persist, as well as the scarcity of schools in the countryside and the high

rates of desertion that have been described in Chapter I. On one hand an excess of highly educated graduates is produced, gigantic institutions of higher education are created and many forms of secondary education rapidly multiply, but on the other hand the provision of basic educational opportunities for low-income groups in urban and rural areas alike continues to be insufficient, inadequate, and of very low quality. Besides, following Boudon's model, the rapid increase of the educated labor force competing for the few available coveted jobs generates a general devaluation of the role of educational attainment in occupational selection and distribution, thus deteriorating the social mobility probabilities for those with middle or lower levels of schooling. Consequently, after more than two decades of rapid educational expansion the social gap between the 'schooled' and the 'non-schooled' population has widened considerably, thus defeating the social objectives that gave meaning to that educational expansion in the first place.

The best known and systematized interpretations of this phenomenon are formed by the technical-function and the conflict theories of educational development,[12] which have already been analyzed in Chapter III. Other interpretations are Boudon's comprehensive theory of the role of education in the process of social mobility, and Bourdieu's analysis of the 'educational strategies' of reproduction of the dominant classes in society.[13] Finally, Dore in his book The Diploma Disease,[14] attempts to formulate a theory of educational development in any given country as a function of the time of initiation of its industrialization and modernization process.

However, these different theories of educational development are based on conceptions of society in which the unit of analysis is either the individual in search of his own personal benefit, or 'status groups' competing for the opportunities of wealth, power and prestige, competition that greatly determines the general pattern and possibilities of educational development through the utilization of educational credentials as mechanisms of occupational selection and distribution in the labor market. An alternative theory of educational development is provided by the Marxist thought, according to which the prevailing pattern of educational development in any given society is the historical result of the continuing social and political struggle between the two fundamental classes in society formed by those who own the means of production and those who only own their labor power and have to sell it in the labor market for a living wage. This basic social division is expressed and reproduced within each productive unit by means of a general division between intellectual and manual labor, which determines the technical division of labor and the occupational structure. That is to say, the historical process of political struggle between Capital and Labor in society has been expressed through Capital's strategy of achieving a greater degree of control over the labor process by means of the division, hierarchization, and segmentation of the labor force and also through the continuing simplification and segmentation of productive activities. In this manner, the labor force becomes 'de-skilled,' 'de-qualified,' and divided, and thus subordinated to the interests of Capital.[14] As Poulantzas puts it:

> . . . this division between intellectual and manual labor not only is not limited to a technical division of labor but in fact constitutes, in every mode of production divided in classes, the concentrated expression of the linkages between the political and ideological relations . . . in their articulations with the relations of production; that is to say, such as they exist and reproduce themselves within the process of production itself, and farther, in the totality of the social formation.[15]

Consequently, the prevailing occupational structure is not determined by socially neutral technical requirements of production but by the organizational strategy of Capital of achieving a greater social control over production. More in particular, this strategy implies a separation, a segmentation, between the activities of conception and administration of production and those of administration, vigilance and control of production, and of the former from those activities of direct execution of production (manual labor). This separation or segmentation is implemented through an occupational structure whose characteristics reflect, in the first place, the three large aforementioned divisions, and secondly, create the social and political conditions necessary for its reproduction, from which, in turn, depends the reproduction of the dominant social relations of production. Thus, the capitalist occupational structure is divided into occupational segments that reflect and reinforce the basic divisions between intellectual and manual labor. These segments have been categorized by some authors as the primary independent, the primary subordinated and the secondary, which respectively form labor markets segmented from each other by organizational, educational and ascriptive barriers.[16]

It is then from this conception of society and within this general context that in this thesis it is attempted to analyze the

role of education, and more in particular its certification function through credentials. The final objective being the understanding of the causes of the failure of the educational expansion in order to be able to formulate a viable change strategy.

According to Poulantzas, in capitalist society its basic social division between intellectual and manual labor can only originate two types of education: that which 'qualifies' for intellectual labor and that which by virtue of its exclusion from the aforementioned type of education assigns its participants to subordinated and menial manual labor. "The main function of the capitalist school is not to differentially qualify both intellectual and manual labor . . . but to a greater extent to 'de-qualify' manual labor . . . by only 'qualifying' intellectual labor."[17] This 'qualification' of intellectual labor takes place through the inculcation of social and cultural values, 'secrets' of knowledge, modes of self-presentation and social rituals, that form the essential component of the educational experience of 'general,' academic-oriented education, and which qualitatively differentiate it from the terminal, work-oriented educational forms such as technical and vocational instruction, which thus become educational forms for the working class. Consequently, the supply of education in capitalist societies is not homogeneous but qualitatively different, between a type of education for intellectual labor and another for manual labor, or education for the working class and education for the class associated with and subordinate to the dominant class; the new small bourgeoisie, according to Poulantzas's analysis of the class structure. This class is the most rapidly growing class

under conditions of monopoly capitalism and is formed by the general occupational category of white-collar workers; professionals, high-level technicians, employees of the commercial, official and services sectors, and in general all the office employees of the tertiary sector of the economy.[18] This is the class that performs a wide range of intermediary activities between Capital and Labor in the productive process. While some of its members are directly related to, and associated with, Capital through their professional performance in the conception and direction of production, others perform the important functions of 'vigilance and control' (administrative and supervisory activities) over the manual labor force and its execution of production. Thus, in the capitalist enterprise; which in itself is only the articulation of the relations of production, of political relations and of ideological relations, within a unit of appropriation of nature and of exploitation of labor power; this function of vigilance and control, as well as the other forms of cooperation with Capital's interests, is the direct reproduction within the process of production itself of the political relations between the capitalist class and the working class.[19] Thus, the new small bourgeoisie performs a role of mediation in the basic conflicts between Capital and Labor in the sphere of production, this mediation takes place in the realm of intellectual labor, separated, segmented from manual labor and is legitimized to the extent to which it is articulated with the monopoly and control over knowledge, which is expressed in terms of the different types and levels of educational credentials.

This monopoly of knowledge by those that work in the sphere of

intellectual labor confers a 'technical legitimation' to their social separation from those that work in the subordinated sphere of manual labor, and to the domination of the former over the latter, especially in the context of the continuing simplification and fragmentation (de-qualification) of manual labor. Thus, the political function of educational credentials is to legitimize, through the monopoly over the knowledge that they imply, the social division between intellectual and manual labor and the political relations of domination of Capital over Labor that are reproduced through this division.

But this division is also reproduced within each of the spheres of intellectual and manual labor: in the latter it assumes the form of an organization of the labor process according to a gradation of 'qualifications' of the labor force, from qualified workers to skilled workers to unskilled workers to menial labor, gradation which accomplishes similar functions of vigilance and control as those of the larger division between intellectual and manual labor. Within the sphere of intellectual labor this division is also reproduced by means of the appearance of directive activities and subordinated activities (or primary independent and primary subordinated labor markets) whose differentiation and segmentation is founded on the degree of monopoly over knowledge (technical legitimacy granted by educational achievement) and the relative nearness to the process of decision making. Besides, the subordinated segment of the sphere of intellectual labor is continuously 'de-qualified' in relation to the directive segment, by being subjected to the process of capitalist rationalization of the labor process which implies fragmentation of

knowledge and simplification of activities.

This segmentation of intellectual labor is expressed through separate labor markets differentiated by wage-levels and degrees of organizational power, responsibility and autonomy. This segmentation is also the source of different fractions of the new small bourgeoisie for whom educational achievement becomes the most important, or probably the only mechanism for social and occupational mobility. The immense importance of educational achievement for this class as a whole resides then, in the first place, in the separation from manual labor that the attainment of the qualification for intellectual labor implies, and secondly, in the probabilities of social mobility in the directive and subordinated segments of intellectual labor that certain types and levels of educational achievement offer. This means that for the new small bourgeoisie the educational experience, particularly its certification process, becomes the most important mechanism of social qualification and distribution, while it is not so important for the bourgeoisie (the owners of Capital) or for the working class, since 'strictu sensu' these two fundamental social classes are not socially distributed by their educational experience, rather respectively legitimized and assigned to their social positions of dominance and subordination. But for the rapidly growing new small bourgeoisie the educational system becomes the dominant ideological apparatus of the capitalist state,[20] since through access to knowledge, 'instruction,' and 'culture' is that its aspirations of social and occupational mobility are achieved, and that defines its political relations with the bourgeoisie and with the working class.

This general social context formed by the class structure provides then the background for the analysis of the causes of the distortions and failures of the gigantic educational expansion of the past two decades in underdeveloped countries.

Given an occupational structure, highly differentiated and segmented in terms of the distribution of income, social status and power, and given the importance of educational credentials in the qualification and distribution of the labor force in the different occupational segments, the expansion of educational opportunities tends to concentrate in the highest relative levels of schooling, since the social class with the highest aspirations of social mobility, the new small bourgeoisie, is also the social class with sufficient political power to determine in its favor the general pattern of expansion of public educational opportunities and with the necessary economic power to generate its own private educational sector, and consequently is also the class in which the higher relative levels of educational attainment are concentrated. As Boudon has demonstrated, the higher the level of education the greater the growth in school attendance from one period to another,[21] due not only to the greater valuation of the cultural and educational merits of schooling but most importantly to the increasing devaluation of educational credentials in the labor market competition for access to the privileged occupational segments. Devaluation which is a function of the rapid increase of the educated labor supply competing for a limited number of socially desirable employment opportunities.

Within the context of underdeveloped economies whose industri-

alization process has been substantially determined by relations of economic and technological dependence from monopoly capital, the social demand for progressively higher levels of schooling, presented mainly by the new small bourgeoisie, assumes forms that are probably more extreme than in highly industrialized, developed countries since the former, as analyzed in Chapter II, are characterized by a profound structural heterogeneity and segmentation between the different productive sectors, and more in particular in the manufacturing sector between the monopolistic Center, the competitive Periphery and the large sector of informal economic activities and unprotected labor markets. These divisions in the manufacturing sector are deeply differentiated and segmented from each other in terms of wages, job stability, internal labor markets and other working conditions for the labor force, which form labor markets also segmented from each other by virtue of organizational, educational and ascriptive barriers, and which reflect the uneven distribution of economic, technological and organizational power of the productive units belonging to each of the aforementioned divisions in the manufacturing sector.

Thus, in this context of highly segmented and differentiated labor markets, the job competition between the members and fractions of the new small bourgeoisie is not circumscribed to those corresponding to the directive/subordinated divisions of the sphere of intellectual labor in the capitalist enterprise (intra-organizational segmentation) but also includes the competition for jobs belonging either to the monopolistic Center or the competitive Periphery (inter-organizational segmentation). Consequently, for this class and for the

upwardly-mobile groups of the working class the valuation of educational achievement and of the corresponding educational credentials tends to become a dominant value whose strength is a function of the perceived role of educational credentials in providing a comparative advantage in the labor market competition for the scarce positions available.

This position of the new small bourgeoisie in relation to the intra-organizational segmentation (social division between intellectual and manual labor within the enterprise) and the inter-organizational segmentation (segmented labor markets corresponding to the Center, Periphery and the informal sectors), forms the material base that originates its high valuation of educational achievement, but not so much in itself as a personal growth experience but as an opportunity for formal accreditation for the labor market, which is an institutional form of 'social qualification,' in the words of Poulantzas. This high valuation of formal educational accreditation is the basic source of the 'credentialling' ideology which is reinforced inasmuch as in the employers' side educational credentials are utilized as criteria for sorting, screening and distributing the labor force in the different occupational segments. The credentialling ideology had already been defined in Chapter III as the generalized social valuation of educational credentials as 'objective' indicators of the development of cognitive abilities, productive skills and even other non-cognitive traits, so that it seems rational, meritocratic and efficient to extensively utilize educational credentials for employment in the different occupational segments, thus guaranteeing an expected level of

productive and behavioral performance and rewarding the merit of educational achievement. These technocratic and meritocratic values associated with the credentialling ideology are functional for the interests of social mobility of the new small bourgeoisie, and for the interests of the bourgeoisie, of reproduction of the social relations of production.

The relatively privileged social position of the new small bourgeoisie in the sphere of intellectual labor in relation to the working class subordinated into manual labor is legitimized by the supposed greater contribution of the former to production by virtue of its higher relative level of educational achievement. This same notion also provides a technocratic 'rationale' for the hierarchical and segmented division of labor within the sphere of intellectual labor itself. Besides, to the extent that educational achievement, and its correlates of social and occupational mobility, are perceived throughout society as the outcome of the individual's merit and effort, the occupational success or failure becomes individualized and thus the dominant class structure remains hidden or legitimized in the consciousness of the population. Paraphrasing Bourdieu; in a society in which social privileges are granted to those which high and selected levels of educational credentials, the school performs the important function of legitimizing the reproduction of the dominant social relations while at the same time convincing the dominated classes that their educational and social failures are due to their lack of talent and merit.[22]

So far, it has been analyzed the role of the class structure,

in those underdeveloped capitalist societies that have undergone a process of dependent industrialization, on the determination of the general pattern of educational development. This class structure, which is the reflection and the reinforcement of the dominant relations of production, is the crucial factor determining in any given period the possibilities and the limits of educational reform.

During the 1960s, as an ideological expression of the dominant pattern of economic development in underdeveloped countries (dependent industrialization), several educational policies were elaborated with the objective of achieving the best degree of fit, or correspondence, between the demands of the productive system and the product of the schools (quantity and quality of the labor force), supposedly as the best strategy for achieving the greater contribution of the educational sector to economic development.[23] Accordingly, several educational planning strategies were derived from that expected contribution of education to economic development, which to a great extent reinforced the vested interests of the dominant class structure on the preferential expansion of the higher relative levels of schooling. Among the most important educational planning strategies of this period are the following:

(a) Forecasting of manpower requirements for the different economic sectors as a basis for setting enrollment rates and allocation of resources for the different educational levels, and

(b) Estimates of the social and private rates of return to investments in different educational levels as a basis for educational policy decisions regarding investment priorities.

Within the context of either a rapid industrialization taking

place, or of a strong political commitment to create the most favorable conditions for industrialization, in most underdeveloped countries during the 1960s, the most important role of manpower forecasting became that of translating into educational equivalents the expected manpower requirements of all the sectors of economic activity, particularly those of the dominant, leading sectors of the industrialization process; which as demonstrated in Chapter II, correspond to the monopolistic, technologically-advanced Center formed mostly by international monopoly capital investments. Consequently, the translation of manpower requirements of this monopolistic sector into educational equivalents led to the priority expansion of secondary and higher education levels since the enterprises of the Center presented a demand for professional, technical and skilled labor and required higher educational attainment levels for employment than the other economic sectors. Through this planning process the pattern of educational development that favored the expansion of the higher relative levels of schooling at the expense of the provision of the basic levels of education to the majority of the population was reinforced.

The end result has been the reinforcement of the role of educational credentials in the labor market and thus of the credentialling ideology, which becomes a fundamental barrier to educational innovation, since both the ideological support from the owners of Capital to the concept of free individual competition in the labor market, whose results are justly rewarded through meritocratic mechanisms such as educational credentials, and the expectation of labor market rewards to individual educational achievement held by those who

sell their labor power in the labor market (particularly, those members of the new small bourgeoisie with the highest expectations of social mobility), tend to reinforce the supposedly neutral and objective process of educational certification (credentialling) and its correlates of institutionalization and formalization of the learning process into the structures of schooling.

To the extent that the realm of knowledge becomes defined and limited by the organizational and curricular limitations of the schooling process, the possibilities of conceptualization and implementation of educational alternatives are greatly reduced. Thus, while the social demand for education is actually the aggregation of the individual's demand for credentialling opportunities, and while the bulk of public educational expenditures is intended to expand or improve educational opportunities within the limited and restricted paradigm of credentialling schooling, the true nature of education suffers essential distortions. That is to say, the truly necessary education both for personal development and for economic development: health and nutrition education, ecological education, agricultural education, and even scientific education, becomes either a marginal educational activity, or the monopoly of a few experts, or is reduced to second-rate 'Adult Education' programs. On the contrary, the emphasis is placed on the expansion of the level and type of education whose credentials are functional for employment in the modern, monopolistic sector of the economy and for social qualification and distribution into intellectual labor, since this is the educational conception that is more congruent with the needs of reproduction of the dominant social and economic

relations.

Or in the words of Dore:

> From the perspective of employers and professional bodies, the utilization of educational aptitudes for job allocation and the gradual increase in educational requirements would seem to be rational. But the consequences for education could not be more deplorable and are; each day there are more people who remain in school longer after their appetite for knowledge has been satisfied, with the only goal of being able to qualify for positions for which, intellectually, they have been for a long time perfectly capable of performing; a characteristic more accentuated by the fact that the motivation for learning is to obtain a 'piece of paper'; the subsequent ritualization of the schooling process by which examinations decide who are those who will obtain the diplomas and foster more and more memorization for immediate use . . . Presently, schools are more and more simply places where one 'takes courses' to obtain the certificates that get the jobs. In sum, the schooling process . . . has become increasingly dominated by the business of certification at the expense of the business of education.[24]

This ritualized process of certification elicits a utilitarian, self-regarding and qualification-seeking motivation for learning, and even a similar perception of the value of the educational experience itself. As Dore puts it:

> In the process of qualification . . . the pupil is concerned not with mastery, but with being certified as having mastered. The knowledge that he gains, he gains not for his own sake and not for constant use in a real-life situation--but for a once-and-for-all purpose of reproducing it in an examination. And the learning and reproducing is all just a means to an end--the end of getting a certificate which is a passport to a coveted job, a status, an income. If education is learning to <u>do</u> a job, qualification is a matter of learning in order to <u>get</u> a job.[25]

Even in socialist societies, particularly in those centrally and bureaucratically organized, to the extent in which the possession of certain types and levels of educational credentials becomes perceived by the general population as being closely associated with the access to certain social privileges and prerogatives, or with certain

groups enjoying elite status, it is also possible that a largely utilitarian and self-seeking social demand for credentialling opportunities emerges, with similar consequences on the structure and the 'quality' of the educational experience. As the previously described mentioned research by Dobson has shown, educational credentials perform in the Soviet Union the important political function of legitimizing the privileged reproduction of the professional and technocratic elite, in spite of the provision of more equal educational opportunities for all social groups.[26] This function of credentials is of crucial importance ". . . in a regime that has formally abolished the inheritance of wealth and power, and that has eliminated almost all forms of private entrepreneurship, since talent cannot count on either birth or capital to show and impose itself; it requires a diploma."[27] Also as Carnoy and Werthein have pointed out in their analysis of the correspondence between socialist ideology in Cuba and the transformations of the educational system, a possible contradiction to the egalitarian ideology that led to the achievement of universal primary education, to the integration of manual and intellectual labor, and to other important educational innovations, is posed by the present emphasis on the formation of highly trained manpower needed for the industrialization plans. This need has apparently led to an increasing educational selectivity, and even elitism, for more desired and higher status occupations, thus creating the conditions for the emergence of an elite technocratic group, that is selectively created through the functioning of the educational system and through which might reproduce itself from generation to generation. In this context, educa-

tional credentials, certifying educational achievement of the individual, serve to legitimize the meritocratic selectivity of this elite social group.[28]

In class-based societies, the groups and classes that derive more privilege from the credentialling process and the meritocratic ideology become the most important source of political opposition to those educational innovations seeking to reduce the monopoly of schools over education and credentials, or to eliminate them altogether as a source of social and occupational privilege. In this respect it is very illustrative the opposition of Ecuadorian university students in 1976 to the educational plan of widening the access to university-level instruction to lower-income groups through the creation of 'distance education' and self-instructional programs, and through the mechanism of academic validation of knowledge acquired through experience.[29] This opposition to educational innovation is based on the role of selective higher education as a coveted source of social privileges and the possible competition for those privileges presented by other social groups or classes whose out-of-school or informal educational achievements have been accredited, certified, for labor market competition, thus devaluating the formal educational credentials granted by secondary and higher educational institutions. Such is the social qualification and distribution value of these types and levels of educational achievement for the new small bourgeoisie that it has led to the rapid and gigantic expansion of public and private university-level enrollments in underdeveloped countries, a process that until now continues unabated creating multiple institutions

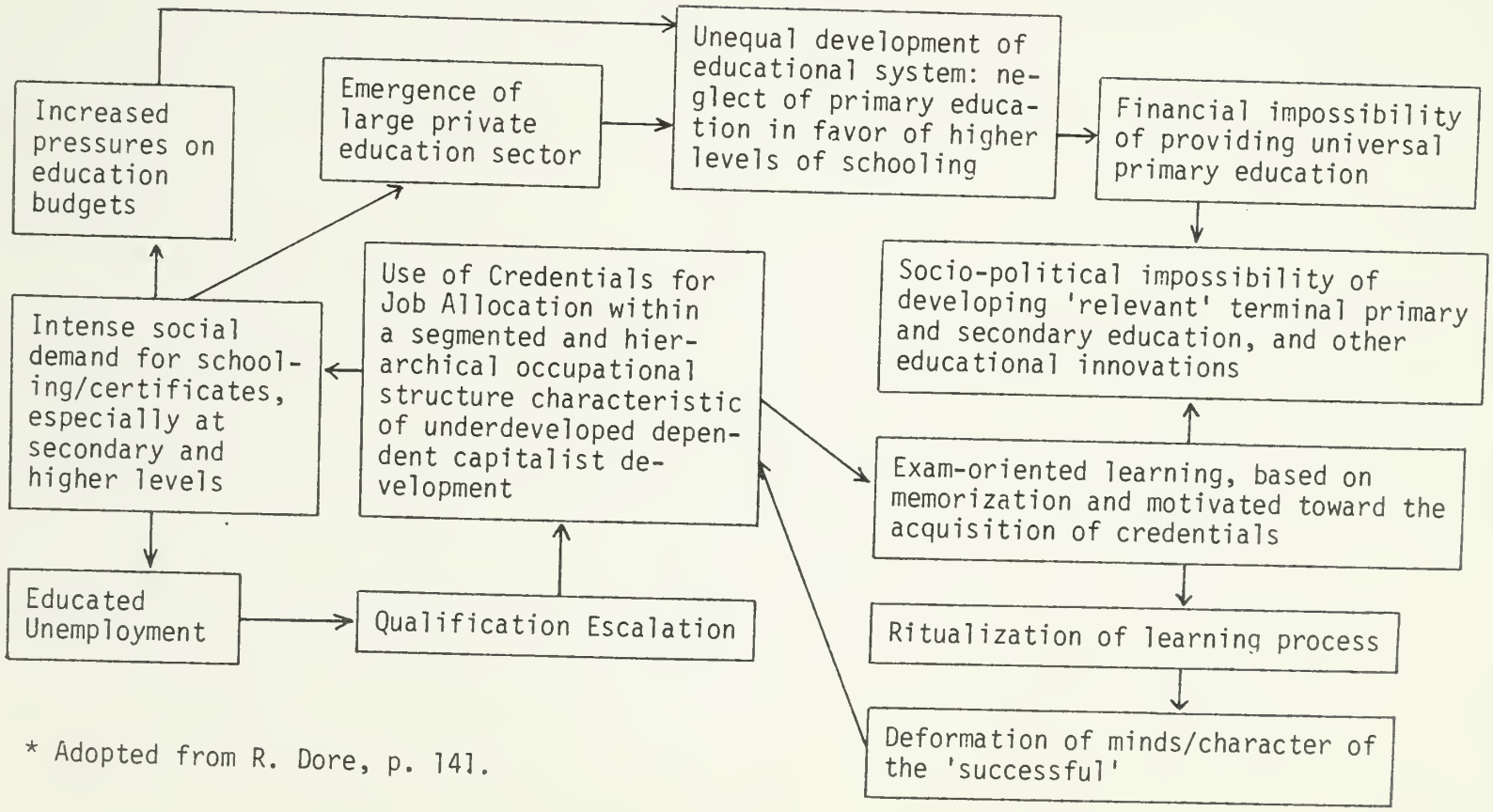
of higher education, many of large size, at the expense of the possibilities of development of other levels of schooling, particularly primary and basic education both in urban and rural areas. The high per capita cost of traditional university-level instruction in underdeveloped countries, already described in Chapter I, are not justified by its expected contribution to economic development since higher education's function of scientific and technical development is relegated to a secondary role, not only due to the structural situation of dependence and inferiority in relation to the international division of scientific and technological research and development, but also because the supposedly 'democratization' of universities, in Latin America in particular, is just a euphemism that conceals the 'massification' of instruction, by which the administrative priority becomes the search for physical and human resources to satisfy the demands of an increasingly higher influx of new students, and the academic priority becomes how to increase the student-teacher ratio so as to satisfy the minimum teaching functions of the university, therefore also largely invalidating its contribution to cultural and intellectual development.

As a summary of this analysis, the following diagram presents the consequences of the credentialling process within the context of a hierarchical and segmented occupational structure on the general pattern and the quality of educational development in underdeveloped countries.

In this context, the possibilities of de-institutionalizing the schooling process, of de-schooling learning, of making education

DIAGRAM 2*

EDUCATIONAL CONSEQUENCES OF CREDENTIALISM



* Adopted from R. Dore, p. 141.

available to everybody, at all ages; which implies breaking down the monopoly of schooling over the realm of knowledge, of abolishing the class-based appropriation and limitation of knowledge that is socially sanctioned by the certification process; face formidable barriers derived from the vested class-based interests of social mobility associated with the attainment of high and selected levels of formal accreditation which is granted by a highly unequal and segmented educational system. Thus, the 'demystification' of the credentialling function of schools is a first step toward breaking down their monopoly over the realm of knowledge, and thus create the conditions for the elimination of the social qualification and distribution role of credentials. The relation between education and work could take place through several alternatives to the utilization of educational credentials as requirements for employment, such as the validation of knowledge and abilities learned through experience or through non-formal educational programs, and most importantly through the implementation of the concepts of permanent education or the organization of learning as an integrated and progressive continuum throughout life.[30] In this manner, the value of the educational experience both for the individual and for the social body would not be determined by its functional relation to the characteristics of the class-based productive and occupational structure but by a more comprehensive conception of common and equal education for everybody; oriented toward the formation of critical abilities, of research abilities, toward the learning of the basic principles of science and its diverse disciplines, and toward the development of self-awareness and social responsibility.

It seems appropriate at this point to quote extensively from the final recommendations of the Faure Commission, which has been considered by some to form an agenda for educational reform in the 1970s:

> To consider education, and to bring others to consider it, as one of the major components in the political and socio-economic edifice; to list the range of specific alternative strategies; gradually to bridge the gap dividing primary, secondary and post-secondary education; to make formal schooling not the end but the decisive prelude to educational action considered as a whole; to go beyond the idea of 'school' as a restrictive institution, confining and limiting education in time (that of school age) and space (that of school buildings and establishments); to change 'closed' educational systems into 'open' systems: to invent shortcuts through educational channels and put them into practice.
>
> To combine intellectual training, the acquisition of knowledge, development of an independent state of mind, creativity and sociability so that they become the harmoniously concordant elements in every educational programme.
>
> To give primary importance in every educational process to the assimilation of 'mechanisms' or capacities for acquiring knowledge; to encourage the interdisciplinary approach at all levels; to individualize and personalize education to the utmost; to prepare people's minds for self-education. . . .[31]

It is important then to make a clear distinction between the utopian proposals of educational development, the reformist proposals, and the non-reformist reforms, with the objective of understanding the goals, implications and limitations of the educational reform proposal oriented toward the demystification and the elimination of the credentialling function of schooling.

According to Gorz, a non-reformist reform ". . . is one which is conceived not in terms of what is possible within the framework of a given system and administration, but in view of what should be made possible in terms of human needs and demands . . . it bases the

possibility of attaining its objectives on the implementation of fundamental political and economic changes, which could take place either suddenly or gradually."[32] On the other hand, "A reformist reform is one which subordinates its objectives to the criteria of rationality and practicability of a given system and policy."[33] This is the type of reform that is functional to the dominant system, through mediating between social conflicts, by improving the efficacy of the system or by legitimating its institutions. Finally, the utopian reforms are those that project future scenarios without starting from the critical analysis of the structural conditions that are creating the present, and therefore they remain at the level of idealism and impracticality.

Every non-reformist proposal of educational development must then be based on the understanding of the prevailing social structures that shape the educational present. In this respect, this thesis has analyzed the existing relationship between the effects on the occupational structure of the pattern of dependent industrialization and the dominant class structure, in order to better understand the role of education in general, and of its certification process in particular, in the reproduction of the class structure. Thus, it has been analyzed the important ideological and political role of educational credentials in providing the differential social qualification and distribution necessary for the 'legitimate' social division between intellectual and manual labor, according to technocratic and meritocratic values. From this analysis it appears clearly that the educational sphere is not independent nor autonomous in its content, objectives, organization

and methodology, but subordinated to the interests of reproduction of the dominant class structure, which are expressed, first through those decisions regarding how much society produces, what it produces, how it produces (social organization of the labor process), and for whom it produces, and secondly through those state policies and institutions whose function is that of creating the appropriate social and political conditions for its reproduction.

Hence the political importance of action over those ideological and political mechanism that within the school system; as an institution controlled and shaped by the state or as one of its ideological apparatus; create the conditions for the reproduction of the dominant social relations of production. That mechanism that has been chosen in this thesis as the subject of analysis is the mechanism of social qualification, and consequently of social division, that takes place through the process of certification (credentialling) of the class-determined outcome of the educational experience.

The objectives of a non-reformist reform on the credentialling process are: first, the 'demystification' of that process; that is to say, the identification if its ideological and political origins and implications, in order to create consciousness about it in society at large and most importantly in the dominated classes; secondly, the gradual reduction until its elimination of the existing pattern of educational certification. This final goal being the elimination of the ideological and political function of credentialling as a legitimized means of social division.

The strategy for the achievement of these objectives is formed

by two complementary actions: (1) by means of the experimentation with and implementation of diverse forms of non-conventional (non-schooled) learning, such as learning through apprenticeships and self-direction, and diverse modalities of continuing and recurrent education for all ages and all social classes; the monopoly of schooling over knowledge, sanctioned by its certification process, will be gradually reduced and eliminated. If the supply of labor whose educational achievement has been accredited through different mechanisms and criteria increases rapidly, the result will be a generalized devaluation of formal educational credentials in the labor market, and the ideological effect will be the reduction of the monopoly of schools over the 'secrets' of knowledge and the subsequent demystification of educational credentials. Thus, their function of legitimation of the segmented social division between intellectual and manual labor will become increasingly difficult.

In order to facilitate this process and to build it up on solid bases, it is necessary to implement, even on a limited and experimental scale, an organizational and instructional model of permanent education, in which different strategies could be tested and adopted to local conditions, and which would serve as a paradigm for its further expansion.

If the model of education through bureaucratic organization into schools corresponds to the need of the dominant classes of organizing and controlling the process of ideological socialization, and of reproducing and reinforcing their position of dominance and privilege through the apparently legitimate process of certification of

individual educational achievement, then the end objective of a political movement attempting to radically alter those relations of domination would be nothing less than doing away both with the very conception of schools as institutions 'separate' from the class structure, and with the process of schooling itself insofar as it serves the aforementioned political functions for the dominant classes.

(2) Simultaneously, through appropriate labor legislation and of the organized demands of the labor unions of the productive sector, the role of educational credentials in the process of selection, distribution and promotion of the labor force will be gradually reduced, so that the social organization of production be no longer segmented and legitimized by employers by means of the educational attainment level of the labor force, nor that its educational experience be any more qualitatively segmented between an education qualifying for intellectual labor and another assigning, channeling, to manual labor, division justified by the supposedly technical function of education. In this manner, the goal is to 'homogenize' the social and physical conditions of work and thus the political consciousness of the labor force vis-a-vis the strategies of division and domination of Capital. This process implies a raising of consciousness on the part of the working class on the ideologico-political nature of the prevailing division of labor and the role of educational credentials in it, so that the segmented and hierarchical division of labor becomes demystified along with its associated educational requirements. This greater consciousness will lead to a greater degree of control by workers over the social organization of their labor, to their greater homogenization,

and thus to a greater political unity of this class. Another consequence will be the elaboration of the educational 'project' of the working class; including its own vision of education, its functions and strategies, with which it is possible to combat on an ideological and practical level the prevailing bourgeoisie conception of education.

As a necessary condition to the above, the entrance to work, after a minimum period of homogeneous education for everybody, could be mediated through several alternatives to the credentials-based employment process, such as apprenticeships or work-study arrangements or schemes or continuing or recurrent education. The main objective being, first, the elimination of the role of educational credentials in the employment process, and secondly, the adaptation of the educational experience, under the general concept of permanent education, for the purpose of integrating intellectual and manual labor, and theory and praxis.

A similar organizational and curricular framework could also be available for all the population and for all ages, for the pursuit of the more advanced spheres of knowledge, which in the age-graded and sequential organization of education into schooling, has been conveniently called 'higher education.' As it exists today, as the limited, elitist, expensive and inefficient credentialling institution known as university, which by virtue of its own structure and objectives monopolizes the higher-level scientific and cultural contents, thus restricting their access to a privileged few; it must disappear. These contents could be efficiently distributed and made available to everybody with existing instructional and communications technologies

and infrastructure, thus in effect achieving the universalization of the higher levels of knowledge, by making education available at home, in the work-place, in special learning resource centers, in the facilities of former universities, and wherever necessary, according to the basic principles of an integrated education throughout life. In this respect, important pioneering experiences are those taking place through the Open University in England, the University Without Walls in the United States, "La Universidad a Distancia" in several Latin American countries, and most importantly, in the efforts toward the universalization of higher education in Cuba.

Within the context of these educational changes, some of the research and development functions of the present university system would be divided and absorbed by other organizational alternatives such as specialized research centers closely tied to the different unit or sectors of production, or to organizations with specific social and cultural objectives. Being a member of any of these research centers or organizations would not then be determined by the length of formal schooling nor by any type of credentials, but by the objective and measurable demonstration of an individual's abilities and proficiencies in any given branch of knowledge through his/her concrete achievements and contributions.

This general educational paradigm herein briefly described would greatly contribute toward the creation of an educational system operationally free of its credentialling role, and thus conceptually free of the educational inequalities and distortions created by the role of educational credentials in the reproduction of the dominant

social relations. However, although education can have a significant contribution toward the formation of a new society, not only through the formation of the social values of the new generations but also through the creation of conditions that reinforce the political power of certain social groups and classes over others, these changes in the educational sphere must be ultimately accompanied and reinforced by radical changes in the structural conditions of the prevailing society in order for the educational changes to keep their validity and social efficacy in the long run.

Thus, although the educational model herein envisioned would contribute to the breakdown of the relationship of correspondence between education and the needs of the class-based, segmented and hierarchical occupational structure, ultimately, radical changes in the social relations of production, creating this structure in the first place, would have to take place in order for this educational alternative to maintain its relevance.

It is precisely for this reason that two complementary strategies of educational change have been proposed herein, one in the educational dimension and another in the world of work: Labor's strategy of gaining a greater degree of control over the social organization of production, via the elimination of the socially divisive process of selection and distribution of the labor force according to educational requirements of the occupational segments, not only strengthens its political power vis-a-vis Capital's but it is also a necessary condition for the aforementioned 'de-credentialling' process to be achieved. In fact, this process could not possibly take place if at the workplace

and in the labor market educational credentials would continue to perform their function of social qualification and division.

Finally, in closing off this thesis it seems worth it to paraphrase at length from The Theses on the School by a group of Italian educators: schools cannot be reformed unless the function for which they were created is abolished. This would require a radical reorganization of two functions, 'education' and 'transmission of knowledge,' which are necessary for every society and which hitherto have been fulfilled by schools. In relation to education, mostly defined in terms of 'socialization' and the level of cognitive development that coincides with elementary schooling, this process could clearly be ensured by the community as an undifferentiated body rather than by schools in a separate place for learning. If education is in fact an act of 'socialization' then there is no logic in delegating this power to some 'experts' (teachers, administrators). This delegation implies that the socialization of the child is conceived of as an artificial process, as separate from his real experience, as a fragmentation of existence. Likewise, the transmission of knowledge by means of fragmented and arbitrary notions (a little ancient history, some 'science,' and a little poetry) must also be reconsidered since these notions do not correspond either to the experience of the community nor to a real level of consciousness. But the atomized and mass-produced whole that constitutes today's social body cannot become an educational community, only a recomposed and therefore 'political' community can become that.[34]

ENDNOTES

[1]R. Boudon, Education, Opportunity and Social Inequality (New York: John Wiley & Sons, 1974).

[2]L. Thurow, "Education and Economic Equality," The Public Interest (Summer 1972):66-81.

[3]R. Boudon, "Education and Social Mobility: A Structural Model," in Power and Ideology in Education, ed. J. Karabel and H.F. Halsey (Oxford Univ. Press, 1977), pp. 191-194.

[4]Aldo Solari, "Algunas Paradojas del Desarrollo de la Educacion en America Latina," Revista Latinoamericana de Ciencias Sociales 1 (1970), Santiago de Chile.

[5]World Bank, "Education," Sector Working Paper (Washington, 1974).

[6]R. Collins, "Functional and Conflict Theories of Educational Stratification," in Power and Ideology in Education, pp. 118-136.

[7]R. Dore, The Diploma Disease: Education, Qualification and Development (UCLA Press, 1977), preface.

[8]Ibid.

[9]L. Emmerij, Can the Schools Build a New Social Order? (New York: Elsevier Scientific Publications Co., 1974).

[10]UNESCO, Evolucion Reciente de la Educacion en America Latina (Mexico: Ed. SepSententas, 1974), p. 21.

[11]Ibid., p. 16.

[12]B. Clark, Educating the Expert Society (San Francisco: Chandler, 1962). R. Collins, "Functional and Conflict Theories."

[13]P. Bourdieu and J.P. Passeron, Reproduction: In Society, Education and Culture (New York: Sage Publications, 1977).

[14]H. Braverman, Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century (New York: Monthly Review Press, 1974).

[15]N. Poulantzas, Las Clases Sociales en el Capitalismo Actual (Mexico: Siglo XXI, eds., 1978), p. 216.

[16]M. Carter and M. Carnoy, Theories of Labor Market Segmentation and Workers' Productivity (Palo Alto, Calif.: Center for Economic Studies, 1974).

[17]N. Poulantzas, Las Clases Sociales, p. 247.

[18]Ibid., p. 213.

[19]Ibid.

[20]Ibid., p. 251.

[21]R. Boudon, "Education and Social Mobility."

[22]P. Bourdieu and J.P. Passeron, Reproduction, p. 210.

[23]L. Emmerij, Can the Schools Build a New Social Order?, p. 3.

[24]R. Dore, "Orgia de Diplomas," Foro del Desarrollo, NN.UU., Vol. IV, #8, Dic. 1976.

[25]R. Dore, The Diploma Disease, p. 8.

[26]R.B. Dobson, "Social Status and Inequality of Access to Higher Education in the U.S.S.R.," in Karabel and Halsey, pp. 254-276.

[27]J. Markiewicz-Lagneau, Estratificacion y Movilidad Social en los Paises Socialistas (Madrid: Siglo XXI, 1971), p. 5.

[28]M. Carnoy and J. Werthein, "Socialist Ideology and the Transformation of Cuban Education," in Karabel and Halsey, pp. 573-588.

[29]Personal Interview with the Vice-Minister of Education, Quito, Ecuador, June 1976.

[30]International Commissions for the Development of Education, Learning to Be (Toronto: OISE, 1972).

[31]Ibid.

[32]A. Gorz, Strategy for Labor (Boston: Beacon Press, 1968), p. 78.

[33]Ibid.

[34]R. Rossanda and L. Berlinguer, "Theses on Education: A Marxist View," in Karabel and Halsey, pp. 653-654.

BIBLIOGRAPHY

Adams, A. and Bjork, R.M. Education in Developing Areas. McKay, 1969.

Altimir, O. and Piñera, S. Decomposition Analysis of the Inequality of Earnings in Latin American Countries. Chile: ECLA-World Development Research Center, 1977.

Apter, D. The Politics of Modernization. University of Chicago Press, 1965.

Averitt, R. The Dual Economy. New York: Morton & Co., 1968.

Becker, H.S. "Schools and Systems of Stratification." In Education, Economy and Society. Edited By A.H. Halsey, J. Floud, and C.A. Anderson. New York: Free Press, 1961.

Berg, Ivar. Education and Jobs: The Great Training Robbery. Boston: Beacon Press.

Bernstein, B. "Class and Pedagogies: Visible and Invisible." In Karabel and Halsey, pp. 511-539.

Birnbaum, H. "The Economic Effects of Career Origins." In Labor Market Segmentation. Edited by Edwards, Reich and Gordon. D.C. Heath & Co., 1975.

Blaug, M. Education and the Employment Problem in Developing Countries. Geneva: I.L.O., 1973.

Bluestone, Murphy & Stevenson. Low Wages and the Working Poor. Ann Arbor: Institute of Labor and Industrial Relations, Univ. of Michigan, 1973.

Boeke, J.H. Economics and Economic Policy of Dual Societies. New York, 1953.

Boudon, R. Education, Opportunity and Social Inequality. New York: John Wiley & Sons, 1974.

_____. "Education and Social Mobility: A Structural Model." In Power and Ideology in Education. Edited by J. Karabel and H.F. Halsey. Oxford University Press, 1977.

Bourdieu, P. "Cultural Reproduction and Social Reproduction." In Ideology and Power in Education. Edited by J. Karabel and A.H. Halsey. Oxford University Press, 1977.

Bourdieu, P. and Passeron, J.C. Reproduction: In Society, Education and Culture. Sage Publications, 1977.

Bourdieu, P. et al. "Les Strategies de Reconversion: Les Classes Sociales et le systeme d'enseignement." Social Science Information 12 (1973).

Bowles, S. "Unequal Education and the Reproduction of the Social Division of Labor." In Power and Ideology in Education. Edited by Karabel and Halsey. Oxford University Press, 1977.

_____. "Schools and Inequality from Generation to Generation." Journal of Political Economy 80 (May-June 1977).

_____. "Education, Class Conflict and Uneven Development." Unpublished manuscript, Department of Economics, University of Massachusetts, 1977.

Bowles, S. and Gintis, H. Schooling in Capitalist America: Educational Reform and the Contradictions of Economic Life. Basic Books, 1976.

Braverman, H. Labor and Monopoly Capital: The Degradation of Work in the 20th Century. New York: Monthly Review Press, 1974.

Bruno, J. and Fischer, K. "Análisis Multivariado de las Actitudes de un grupo de Empresarios frente a las Alternativas de Educación en Venezuela." Revista del Centro de Estudios Educativos VI(3) (1976). México, pp. 69-88.

Bruno, J. and Van Zeyl, C.J. "Innovación Educativa e Ideología Social en un sector de Venezuela." Revista del Centro de Estudios Educativos V(1) (1975). México.

Carnoy, M. "The Political Economy of Education." In Education and Development in Latin America. Edited by Th. La Belle. UCLA Press, 1972.

_____. "Education and Employment: A Critical Appraisal." Paris: UNESCO-IIEP Fundamentals of Educational Planning Series #26, 1977.

Carnoy, M. and Werthein, J. "Socialist Ideology and the Transformation of Cuban Education." In Power and Ideology in Education. Edited by Karabel and Halsey. Oxford Univ. Press, 1977.

Carter, M. "Contradiction and Correspondence: Analysis of the Relation of Schooling to Work." In The Limits of Educational Reform. Edited by H. Levin and M. Carnoy. New York: McKay, 1976.

Carter, M. and Carnoy, M. Theories of Labor Markets and Worker Productivity. Palo Alto, Calif.: Center for Economic Studies, August 1974.

C.E.P.A.L. La Industrialización Latinoamericana en los años Setenta. Chile: U.N., 1977.

Chau, Ta Ngoc. Population Growth and Costs of Education in Developing Countries. Paris: UNESCO-IIEP, 1972.

Chudnovsky, D. "Empresas Multinacionales y Ganancias Monopólicas en una Economía Latinoamericana." Siglo XXI, eds. Buenos Aires, 1974.

Clark, B. Educating the Expert Society. Chandler, 1962.

Collins, R. "Educational Requirements for Employment: A Comparative Organizational Analysis Study." Unpublished manuscript, 1971.

_____. "Functional and Conflict Theories of Educational Stratification." In Power and Ideology in Education. Edited by Karabel and Halsey. Oxford University Press, 1977.

Cornehls, J.S. "Forecasting Manpower and Educational Requirements for Economic and Social Development in Peru." In Education and Development in Latin America and the Caribbean. Edited by Th. La Belle. UCLA: Latin American Center, 1972.

DANE. "Inversion Extranjera en la Industria Manufactura, I." Boletín Mensual de Estadística 302 (Sept. 1976). Bogotá.

_____. Boletín Mensual de Estadística 306 (Jan. 1977). Bogotá.

_____. Boletín Mensual de Estadística 315 (October 1977). Bogotá.

Debeauvais, Michel. "The Development of Education in Latin America Since the Santiago Plan." In Education and Development in Latin America. Edited by Th. La Belle. UCLA Press, 1972.

Dobson, R.B. "Social Status and Inequality of Access to Higher Education in the U.S.S.R." In Power and Ideology in Education. Edited by Karabel and Halsey. New York: Oxford Univ. Press, 1977.

Doeringer, B. "Low Pay, Labor Market Dualism and Industrial Relations Systems." Wage Determination, OECD (1974).

Dore, R. "Orgia de Diplomas." Foro del Desarrollo. NN.UU., Vol. IV, #8, Dic. 1976.

_____. The Diploma Disease: Education, Qualification and Development. UCLA Press, 1977.

Dos Santos, Th. "The Structure of Dependence." In The Political Economy of Development and Underdevelopment. Edited by Ch. Wilber. New York: Random House, 1976.

_____. Importancia de la Segunda Guerra Mundial para la Economía Norteamericana. Chile: CESO, 1969.

Eckhaus, R.S. "The Factor Proportions Problem in Underdeveloped Areas." Quoted in Higgins, B. Economic Development: Principles, Problems, and Policies. New York: W.W. Norton & Co., Inc., 1959.

Edwards, R. "The Social Relations of Production in the Firm and Labor Market Structure." In Labor Market Segmentation. Edited by Edwards, Reich and Gordon. D.C. Heath & Co., 1975.

_____. The Great Transformation Inside the Firm. Basic Books, Inc., Forthcoming, 1978.

Emmerij, L. Can the Schools Build a New Social Order? New York: Elsevier Scientific Publications, 1974.

Fields, G. and Marulanda, N. "Intersectoral Wage Structure in Colombia." Economic Growth Center, Yale University. Discussion Paper #251. August, 1976.

Freeman, R. The Overeducated American. Harvard University Press, 1976.

Gordon, M.S. and Thal-Larsen, M. Employer Policies in a Changing Labor Market. Berkeley: Institute of Industrial Relations, UCLA, 1969.

Gorz, A. Strategy for Labor. Boston: Beacon Press, 1968.

Hagen, E. "The Theory of Economic Development." In Economic Development and Cultural Change, April, 1954.

Hallak, J. and Caillods, F. Education, Travail et Emploi a Panama. Paris: UNESCO-IIEP Document de Travail. IIEP/544/7F.

Harrison, B. Education, Training and the Urban Ghetto. Johns Hopkins University Press, 1971.

Higgins, B. Economic Development: Principles, Problems and Policies. New York: W.W. Norton & Co., 1959.

Hultins, Mats. "I-The Cost of More and Better Education in Developing Countries." In Costing and Finance of Education in LDCs--Current Issues. Washington: World Bank Staff Working Paper #216, May 1975.

Huq, Muhammad Shamsul. Education and Development Strategies in South and Southeast Asia. Honolulu: East-West Center Press, 1965.

International Commissions for the Development of Education. Learning to Be. Toronto: OISE, 1972.

Jamison, D. et al. The Effectiveness of Alternative Instructional Media: A Survey. Stanford, Calif.: Institute for Communication Research, March 1973.

Karabel, J. and Halsey, A.H. "Educational Research: A Review and an Interpretation. In Power and Ideology in Education. Edited by J. Karabel and A.H. Halsey. New York: Oxford University Press, 1977.

La Belle, Th. "The Impact of Non Formal Education on Incomes in Industry: Ciudad Guayana, Venezuela." In Educational Alternatives in Latin America: Social Change and Social Stratification. Edited by Th. La Belle. UCLA, 1975.

Levy, Marion. "Functional Analysis: Structural-Functional Analysis." International Encyclopedia of Social Sciences. Free Press, 1968.

Llado, J.A. "La Educación y las Prácticas de Empleo de Empleadores Dominicanos." Revista del Centro de Estudios Educativos. Vol. VI, #3, 1976. México.

Mariño, Cambre. "Monopolios Norteamericanos y Corporaciones Multi nacionales." In Las Corporaciones Transnacionales y el Desarrollo Dependiente en América Latina. UTAL. Buenos Aires, 1975.

Markiewicz-Lagneau, J. "Estratificacion y Movilidad Social en los Paises Socialistas." Siglo XXI. Madrid, 1971.

McClelland, D. The Achieving Society. Van Nostrand, 1968.

Merrick, T. "Employment and Earnings in the Informal Sector of Brazil; the Case of Belo Horizonte." The Journal of Developing Areas 10(3) (April 1976).

Muller, R. "The Multinational Corporation and the Underdevelopment of the Third World." In The Political Economy of Development and Underdevelopment. Edited by Ch. Wilber. New York: Random House, 1973, p. 141.

Muñoz, C. et al. "Educación y Mercados de Trabajo." Revista del Centro de Estudios Educativos. Vol. XIII, #2 (1978).

_____. "Antecedentes Sociales, Educación y Empleo." Centro de Estudios Educativos, A.C. México, 1977.

O.I.T. Las Empresas Multinacionales y la Política Social. (Buenos Aires: Ed. Hachette, 1974).

Panzieri, De Palma, Salvati, Beccalli, Lettieri, Gorz. "La División Capitalista del Trabajo." Cuadernos de Pasado y Presente 37 (1972), Córdoba, Argentina.

Parsons, T. "General Theory in Sociology." In Sociology Today. Edited by R.K. Merton et al. (New York: Basic Books, 1958).

_____. "The School Class as a Social System: Some of its Functions in American Society." Harvard Educational Review 29 (Fall 1959).

Pereira, Luiz B. "Enterprises Multinationals et les Sous-développement Industrialisée." Revue Tiers Monde, Tome XIX, #74 (Avril-Juin 1978).

Pinto, Anibal. "Concentración del Progreso Técnico y sus Frutos en el Desarrollo Latinoamericano." El Trimestre Económico 32(125) (1965).

Piore, M. "On The Technological Foundations of Economic Dualism." MIT Working Paper #110, May 1973.

_____. "Notes Toward a Theory of Labor Market Stratification." In Labor Market Segmentation. Edited by Edwards, Reich and Gordon (D.C. Heath & Co., 1975).

Piore, M. and Doeringer, P. Internal Labor Markets and Manpower Analysis (D.C. Heath & Co., 1971).

Poulantzas, N. "Las Clases Sociales en el Capitalismo Actual." Siglo XXI, Editores, Mexico, 1978.

Psacharopoulos, G. "Labor Market Segmentation and Income Distribution: A Policy Oriented Classification." Mimeo, 1976.

Puryear, J. "Recruitment to Industrial Apprenticeship Programs in Colombia: The Case of SENA." In Educational Alternatives in Latin America: Social Change and Social Stratification. Edited by Th. La Belle (UCLA Press, 1975).

Rodríguez, Jaime. "Las Transformaciones del Sistema Educativo y su Repercusión sobre la Universidad de la década del 80 en Colombia." ICFES #24. Bogotá, 1975.

Rosenberg, S. "The Dual Labor Market: Its Existence and Consequences." Ph.D. Dissertation, University of California at Berkeley, 1975.

Rossanda, R. and Berlinguer, L. "Theses on Education: A Marxist View." In Power and Ideology in Education. Edited by Karabel and Halsey. (New York: Oxford University Press, 1977).

Salama, P. "Spécificités de L'internationalization du Capital en Amerique Latine." Revue Tiers Monde, Tome XIX, #74 (Avril-Juin 1978).

Simmons, J. The Determinants of School Achievement: Educational Production Function Analysis (Washington, D.C.: IBRD, 1974).

Solari, Aldo. "Algunas Paradojas del Desarrollo de la Educación en América Latina." Revista Latinoamericana de Ciencias Sociales 1 (Chile, 1970).

Souza and Tokman. "Income Distribution, Poverty and Employment in Urban Areas." PREALC. Paper presented at the Conference on Distribution, Poverty and Development, Universidad de los Andes, Bogota, 1977.

Souza, R. "La Segmentación del Mercado de Trabajo en Economias Subdesarrolladas." Unpublished manuscript, PREALC, Chile, 1977.

Stone, K. "The Origins of Job Structures in the Steel Industry." In Labor Market Segmentation. Edited by Edwards et al. (D.C. Heath & Co., 1975).

Swartz, D. "Pierre Bourdieu: The Cultural Transmission of Social Inequality." Harvard Educational Review 47(4) (1977).

Tedesco, J.C. "Educación e Industrialización en Argentina." Proyecto Desarrollo y Educación en América Latina y el Caribe. UNESCO-CEPAL-PNUD. Buenos Aires, 1977.

Tenti, E. and Alexander, W. "Reflexiones sobre la Capacitación Obrera en Colombia." Mimeographed paper presented at the Annual Meeting of the International Comparative Education Association, March 1978, Mexico.

Thurow, L. Poverty and Discrimination. (Washington: The Brookings Institution, 1969).

_____. "Education and Economic Equality." The Public Interest (Summer 1972).

Tugendhat, Ch. Las Empresas Multinacionales (Madrid: Alianza Editorial, 1973).

UNESCO. "The Development of Higher Education in Africa." Report on the Tananarive Conference (Paris, 1963).

_____. Evolucion Reciente de la Educacion en America Latina. (Mexico: Ed. SepSententas, 1974).

UTAL. Las Corporaciones Transnacionales y el Desarrollo Dependiente en America Latina (Buenos Aires, 1975).

Vaitsos, Constantine. "Patents Revisited: Their Function in Developing Countries." The Journal of Development Studies (1973).

Vaizey, J. The Role of Education in Economic and Social Development (Paris: OECD, 1963).

Vernon, R. Sovereignty at Bay: The Multinational Spread of U.S. Enterprises (London: Longman, 1971).

World Bank. "Education." Sector Working Paper (Washington, D.C., 1974).

Zymmelman, M. "Patterns of Educational Expenditures." World Bank Staff Working Paper #246 (Washington, Nov. 1976).