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Basic Research and Implementation in Developing Education Systems



VARIABLES AFFECTING POLICIES, PROGRAMS
AND PROGRAM IMPLEMENTATION IN
ACCESS TO SCHOOL

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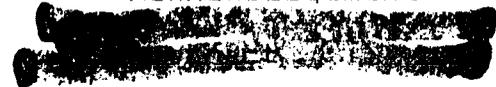
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TABLE OF CONTENTS

Acknowledgement



I. Introduction.....1
II. The Scene.....7
III. Exogenous Variables.....13
IV. Endogenous Variables.....44
V. Conclusion.....61

References

Appendixes

China

Japan

USSR

Eastern European Countries

Tables

Figure

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Abstract

Education system as an open system is closely interacting with its environment. Policies, programs and program implementation are thus intimately affected by the variables embedded in the context. In this review, variables affecting education policies, programs and program implementation are divided into two categories: exogenous variables and endogenous variables, depending on where the variable lies. Programs implemented to "counteract" inhibiting effects caused by some exogenous variables are reviewed; and where information available, results of program implementation are also reviewed.

While most of the exogenous, contextual, variables are given conditions, education as a force of development, serves to change some of these conditions; the formation and the efficacy of the education system, however, are subject to the inhibiting and facilitating effect of the context. We are faced with a system-environment interaction, in which the dynamic interaction of the exogenous and endogenous variables contributes to the unique education participation in a country. Generalization of effects of single variables is difficult.

Some conditions emerged as being more fundamental than others in education participation:

- (1) Inter-sector coordination between education and economic development,
- (2) education-employment linkage, in other words, economic pay-off of schooling for individuals,

(3) goal classification of education and related policies, and

(4) efficient management of the education system.

Innovative instruction delivery systems hold much promise for increasing the capacity of educational systems. More research is needed in (1) identifying the culture belief systems in expectations of schools and schooling, and (2) systematic program evaluation to identify specific factors that contribute to program effectiveness.

Several "cases" were presented as appendices. Reading of these cases should take into consideration that each specific education system produces education with a quality unique to that system. For instance, graduates of the very efficient education system in Japan have been criticized by some Japanese researchers as lacking in individual initiative and being short on creativity, albeit a mastery in basic skills.

Quantitative expansion without corresponding qualitative improvement is being increasingly experienced by many developing countries. There are problems caused by quantitative expansion at the primary school level, such as a shortage of higher level schools for graduates to continue their education. Unemployment of primary school leavers is also evident in these countries. Short- and medium-term coordination between different levels of schools and between schools and the labor markets are issues faced by countries that are expanding access to primary schools at a rapid rate.

"Education is both a world in itself and a reflection of the world at large. It is subject to society while contributing to its goals." --UNESCO, 1972

LEARNING TO BE

Education is a force shaped by its context; it is also a force which shapes its context. An education system is thus an open system: It draws from its environment inputs and gives to the environment outputs in the form of graduates, knowledge and skills, and values. The system itself is shaped and formed by its context; it in turn molds its context. This mutually interactive situation is not well understood at this moment.

A multiplicity of variables has been linked to the education system. There have been many attempts to categorize these variables (e.g., Thomas & Postlethwaite, 1983). We have not found consensus in the categorization of variables affecting the education system. The direction or effect a given factor has on education often varies from study to study. For instance, whether population growth has a negative effect on enrollment cannot be answered unequivocally. An intuitive answer would be yes because population growth generally means added burden on the system. Indeed, this was pointed out by many scholars (e.g. Hawes, 1983). However, a study (Simon & Filarski, 1979) which directly analyzed the relationship between population growth and enrollment ratios, found that population growth had little or no

4

effect on enrollment ratios. In the few instances where slight negative effects were found, they were found in Less Developed Countries. Apparently, there are other variables that intervene in the relationship between population growth and enrollment. Factors such as economic effect of educational production gained in conjunction with large volume, or efficiency of education production and changing attitudes toward education brought about by increasing popularization of education participation. However, in most studies these potential moderating variables were not identified or investigated. Frequently, population growth was treated as a contextual variable for relationships between other variables and measures of education.

We are thus faced with a stage of research literature in which relevant variables are gradually being identified; the relationships between variables and direction and magnitude of relationships are only beginning to be explored.

We are living in a world which is rapidly changing, and the pace of change is accelerating. Relationships that are true at one point in time may not be true at another point in time. Wider and more democratic access to school is a relatively modern idea developed and nourished in the context of post-industrial societies (Lingapa, 1979), not only as a moralistic conviction but also as an economic consequence. Access to school has been looked upon by developing countries as a right the government should grant its citizens and also as a vehicle to achieve economic development and social welfare for the country.

The assumption that educational expansion will bring about much needed economic development cannot be confirmed unequivocally, either. In most studies we reviewed, it was generally found that an appropriate coordination between economic development and educational planning, rather than quantitative expansion of education, makes more of a difference in economic development; moreover, this coordination may not always mean wider and more democratic access to education for the citizenry.

The growing economic interdependence between nations has added another dimension to the relationship (Walters, 1981), making assessments of the relationship between economic development and educational expansion more difficult.

We thus come away with lessons learned from reviewing the literature on access to school: One, that it is fruitless to study the effect of a single variable without taking into consideration other variables also operating in the field; two, that instead of looking for static rules and laws that determine the course of events, one should look for dynamic interaction between multiple factors in which outcomes are calculated in probabilistic terms.

Historical framework and temporal context are important dimensions in the study of educational systems. Policies and programs grow out of their respective historical context. Motives of planners, the kinds of policies they enact and the operationalization of policies into programs cannot be understood outside their historical framework. The effectiveness of

programs is intimately related to the temporal element of the programs and program implementation.

Since policies, programs and program implementation are encapsulated in their temporal and spatial contexts, generalization of policies and programs from one country to another presents a significant challenge.

Compounded with the difficulty in generalization is a confusion of the meaning of terms. Oftentimes, the same term has referred to different processes or events in different studies. For instance, colonialism has been cited as one of the most important historical influences on present-day education in the newly independent countries. However, colonialism in education has meant different things in different regions. In former British colonies, colonial education meant the indigenous languages were used as much as possible; but in former French colonies, colonial education meant French was used as the instructional language. Generalizations thus cannot be done on the basis of variable labels; one should look for underlying dimensions, e.g., instructional language, as a basis for generalization.

The literature that we were able to assemble is largely fragmentary. There are policy proposals, position papers, historical accounts and some empirical studies. The empirical studies vary widely in their orientation and methodology. There are small-scale participant observations, multiple regression analyses of national statistics and a few experimental studies.

1

The scope of studies ranges from macro-, cross-national, to regional to micro-, within school and classroom studies.

It is therefore difficult to draw conclusions from these documents of varied methodology and diverse orientations. Precise effects of variables on access to education cannot be readily identified.

However, some basic themes have emerged after reading these articles:

1. Regardless of the political inclination of the country, countries surveyed by UNESCO (1981, 1985) all indicated that it is the government's responsibility to provide wide and democratic opportunities to education and that there are policies identified for these purposes.
2. These countries identified similar generic problems encountered in providing educational opportunity to their citizens.
3. These governments also identified similar generic programs in attempts to resolve the problems encountered.

The priorities of providing wide and democratic access to education perhaps vary from country to country, and within one country it varies from region to region.

In the ensuing pages we will try to outline these policies, programs, implementation of programs and, where information is available, effectiveness of programs.

We use enrollment figures and enrollment ratios as indicators of access to school. We are aware that there are situations where low attendance and widespread underachievement in the schools make enrollment an empty count of numbers rather than an actual count of "learners". There are also situations in which learning takes place without formal enrollment and

sometimes without formalized organizations. However, the success of these situations is difficult to document.

We use the term "participation in education" interchangeably with "access to school." Participation in education is an active process which involves the motives and actions of the students in addition to the capacity of the system. Enrollment requires such active actions.

We use the term "educational system" rather than "school" in many cases, because education takes place oftentimes in organizations without an identifiable physical entity that can be called "school," as is the case in nonformal education. We thus have a wide definition of "school" or "educational system," meaning all forms of organized learning in which enrollment is required.

Fully aware of the problem of generalization and the fact that the success or failure of an educational system depends on a composite of many factors, we present several case studies of countries that have been considered successful cases in providing wide and democratic opportunities in education, with the hope that lessons can be learned from these countries.

Distance education, innovative learning technologies and teacher education programs are very important facets of efficient educational systems. These topics, however, are reviewed by other components of BRIDGES; therefore, to avoid redundancy, they will not be reviewed in depth here.

THE SCENE

Certainly one of the most significant trends in the evolution of education over the past several decades has been the rapid expansion in total school enrollment at all levels--from an estimated 327.8 million in 1960 to 586.8 million in 1976 (Hawes, 1983). Tables 1, 2, and 3 present the impressive education expansion rates and enrollment ratios of developing as well as developed countries.

[Table 1,2,3 approximately here]

In general, expansion was noticeable in the developing countries where, between 1967 and 1977, enrollment increased by a factor of 2.2 at the primary level, 3.5 at the secondary level and 5.2 at the tertiary level (Hawes, 1983).

However, the rate of growth has slowed down significantly from 4.2 per cent per annum during the 1960's to 2.8 per annum during the 1970's, and the pattern and pace of expansion varied considerably from country to country and from region to region (Hawes, 1983).

Most developed countries have achieved universal primary education. The expansion in education in these countries has occurred primarily in secondary and tertiary education. These countries also improved access to preschool education (UNESCO, 1981).

However, despite the rapid expansion of overall enrollment, the absolute number of children not in school has continued to

10

grow as indicated in Table 4.

[Table 4 approximately here]

Even with the expansion of educational systems in the world, the number of youths out of school has actually grown, indicating that the rate of expansion has not caught up with population growth, especially in South Asia and Africa.

In 1975, there were about four billion people in the world, and about 1.44 billion of them were children under the age of 15. Of these, an estimated 1.15 billion lived in developing countries (Population Reference Bureau, 1979, cited in UNESCO, 1981).

The vast majority of developing countries have fallen short of ensuring universal primary education by 1980--the goal announced at regional conferences held in the early 1960's in Addis Ababa, Karachi, Santiago de Chile and Tripoli (UNESCO, 1981).

At the other end of the age spectrum are the illiteracy rates of adults. It is observed that, although the percentage of illiterate adults (age 15 and over) in the world is steadily declining, the absolute number has continued to grow. According to recent estimates, the number of adult illiterates increased from 472 million in 1970 to 814 million in 1980, of which 80% are women. The majority of the adult illiterates are found in Africa and South Asia (UNESCO, 1981).

Nevertheless, education in the world has made great strides. The absolute number of students in school worldwide is mind-boggling; however, it is also evident from the statistics that

the expansion of educational systems has not caught up with population growth.

Population growth has consumed a major part of the new increased capacity of educational systems. In developing countries, the population of primary school-aged children increased by 72% during the period 1960 to 1980 as compared to 1% in industrialized countries (UNESCO, 1981).

The burden of population growth on education was compounded by a general lack of adequate statistical information. This void was spotlighted by Hawes (1983) in the editorial introduction to a special issue of International Review of Education on universal primary education. He observed that the available statistical information on both the school-aged population and enrollment is either unreliable or uncertain, making the projection of educational needs difficult. UNESCO's plan projected an 18% school-aged population growth in developing countries; a recent estimate is 9.3% (Hawes, 1983).

Existing statistical data also indicate that inequities persist in the distribution of opportunities to participate in education.

Based on the abovementioned statistical information, it can be deduced that the task in providing access to education is a manifold one:

1. To address past deficiencies in education,
2. to address the new demands created by population growth,
3. to provide education for adults who did not have an

- opportunity to be educated, and
4. to address the issue of equality of education for all, regardless of sex, ethnic origin, geographic origin and other related factors.

GOALS OF MODERN EDUCATION

Reports by UNESCO (1981 and 1985) indicated that in almost all the countries surveyed by UNESCO, there are education policies or policy statements stipulated in the basic laws of the country. These statements converge on several common goals.

Lingapa (1979) summarized the goals as the following:

- Democratization of education, meaning that there should be equal access to education for all;
- building national and cultural identity; this goal is especially emphasized in former colonies;
- education to serve the needs of social economic development of a country;
- establishing a close link between education and employment; and
- integration of education and community life.

These objectives are closely interrelated and cut across all levels and types of education.

Most of the governments surveyed also made efforts toward fulfilling these educational promises made to their people. Programs are designed or proposed to be implemented for the realization of these policy goals. Although specific conditions may change from country to country, governments identified similar generic programs to implement these policies. An example

can be found in a proposal made in Bangladesh (Abeje, 1983):

- A shorter school day and alternate day school to ease the problem of lacking facilities;
- shorter initial teacher training with opportunities for continuing education; recruiting teachers at lower salaries to offset the problem of educational expenditures;
- developing curriculum with survival values relevant to the everyday life of the students; and
- linkage between formal and nonformal education to provide more opportunity for education.

These proposed programs are not too different from programs proposed or implemented in most developing countries where resources are limited and the demand for education is high (UNESCO, 1985). Table 5 presents the problems and attempted programmatic solutions to the problems identified from our literature review.

[Table 5 approximately here]

There is no ambiguity in the goals stated by the governments and the governments' intention of providing education for their peoples. The phases in which the expansion occurs, the strategies of development and the quality and pace of program implementation are issues worthy of much investigation. Countries may agree on long-term goals in providing wide (and democratic access to school, but within the short and medium terms, how expansion should be accomplished and what to expand first are questions that are not easily answered.

There are variables affecting the choice and implementation of programs. We will attempt to review studies on the variables

that affect programs dealing with access to school.

A multitude of variables have been identified; there have been attempts to classify them into categories (e.g., Thomas and Fostlathwaite, 1983). In this paper, we chose to divide the variables into exogenous and endogenous variables.

Exogenous variables are variables that lie outside the education planning and education production systems; they provide the context in which policies are made, operationalized and implemented. They feed into the system of education planning and production and receive the products of the system. There is an intimate interaction between the system and the environment in which the exogenous variables exist.

Endogenous variables are variables inherent in the system of education planning and production; they determine the effectiveness and capacity of the system.

Table 6 presents a list of these exogenous and endogenous variables identified from our literature review.

[Table 6 approximately here]

Figure 1 presents a schematic conceptualization of the variables. These variables are observed in the macro-(national) level, meso-(regional) level and micro-(school and classroom) level.

The articles we review here present data sometimes at the micro-level, sometimes at the macro-level with a few at the meso-level. The scope of the study constitutes another dimension warranting attention when trying to generalize results.

EXOGENOUS VARIABLES

Conflicting goals

The most fundamental problem in program implementation is perhaps the conflicting goals created by different policies and a lack of priority among the goals. For instance: After independence, Malaysia launched a movement to build a nation of Malays. With the Malay language established as the official language, private schools that did not use Malay language were closed down or placed under strict regulation. To "avoid mixing racial/ethnic identity with economic functions (Wang, 1979)," special assistance was given only to Malay students at the expense of opportunities for other students. Similarly, in Saudi Arabia, to maintain traditional cultural institutions, women are prohibited from going to school with male students. Schools and classes for women are taught by female teachers. However, there are many subjects where there is a shortage of female teachers. For these subjects, female students do not have equal access as the male students (Chang, personal observation).

The conflict between objectives for rapid and "appropriate" economic development and equity in education opportunity perhaps is the most widespread and the most acute conflict experienced by Third World countries.

Countries like the People's Republic of China have radically changed their education policies, structures, admission policies and curricula to accommodate whichever priority was being emphasized, economic development or equality of education, resulting in lost time and effort (Price, 1976).

Therefore, it seems that before any policy can be implemented with any success, planning agencies need to thoroughly clarify their goals. The operationalization of a policy into programs should take into consideration other programs and other objectives that may be affected by the operationalization and implementation of a particular program.

Implementation of policies without careful evaluation of side effects and local inputs

In Kenya, two policy interventions were implemented in an attempt to improve educational opportunities for the underprivileged: (1) The abolition of school fees in the primary schools and (2) the institution of primary boarding schools in the arid and semi-arid areas of the country. There soon developed an influx of students into the schools when fees were abolished. No fiscal countermeasures were taken to replace the lost revenue. Therefore, other fees were imposed: Building fund, equipment levy, activity fund, etc. The cost of schooling quadrupled in the districts where parents could least afford it. In remote arid and semi-arid areas, nomadic interdistrict migration became commonplace. The government established boarding schools to offer formal education to pastoral children. In these "low cost" schools, students were required to provide their own beds, bedding and cutlery, as well as a boarding fee--all of which are barriers to most pastoral children (Kikinyangi, 1992).

Education for appropriate economic development and manpower needs

The relationship between education and employment is a fundamental issue in educational planning.

The coordination of a nation's demands for skilled manpower appropriate for the economical development of the country is a very important one. Education that serves the needs of economic development and the general welfare of the country will facilitate the development of political will for planners to provide wider and more adequate educational opportunities for the country. In addition, a close linkage between education and employment will give individuals the necessary incentive to go to school; it will also provide motivations for families to send their children to school, for the projected increase in income and social status will be perceived as worth the production labor loss while the child is in school.

There is also an emphasis on education planning to provide the mixture of manpower appropriate for the country's economic development, meaning that a country should assess its current technology level and its projected course of development and plan education expansion accordingly. This coordination between economic development, labor market needs and education does not always translate into wider and more equal access to school. On the contrary, to meet the needs of manpower with skills needed in

the production force, government policies have often resulted in providing vocational education at the secondary level at the expense of wider access at the primary level.

To argue against expansion of general secondary schools, an educator in China in 1958 remarked:

"All students in our present senior middle schools now are production units. For this reason, we cannot afford to extend our present senior middle school education to many persons. We are openly graduating several thousand students each year. Even if greater efforts are exerted in this work, the best we can do will be to graduate a little more than one million students from senior high schools each year. Should we try to increase this number, we would take away manpower from production work" (Lu, 1958).

Similar conflict is experienced by most other developing countries. Yadav (1980) observed that in India, the education commission (1964-1966) had expressed the view that under-estimation rather than light over-estimation should be avoided. The economy remained sluggish and the financial overlay for education had to be slashed; the targets for expansion in higher education, however, had been achieved ahead of time. It is observed that the gain in education expansion is at the expense of loss in other areas. The education is elitist in nature: Eighty percent of the positions in higher education are occupied by the offspring of families in the top 30% income bracket.

Purchasing power of the population in general determines the demand for goods and services in the market. In India, the purchasing power of the general population is such that it does not sustain a labor market of highly trained technical people. Massive unemployment of the highly educated graduates has

resulted. A large number of these graduates seek employment in other countries, resulting in a "brain drain" in India.

There is also an imbalance in the distribution of graduates. For instance, 57% of the medical doctors are found in urban areas, while 79% of the population live in rural areas.

A plan for a new structure of education in India was formally approved in 1966. It included vocational education at the secondary level, but the implementation of this new plan has been delayed. Problems involved in implementing the new plan included the availability of additional funds and the reconciliation of equality, justice and efficiency. Moreover, vocational education in India has proven to be an unpopular proposition, because vocational education leads to jobs of the junior-technologist level which do not carry as much prestige as engineering positions; the income level for these junior-level positions is far less attractive than that for professionals. To channel students into these jobs was considered creating a "modern caste system" (Yadav, 1980).

Similar problems were also faced by some African countries. Asayeghn (1982) indicated that the economies in Zambia, Sudan and Tanzania, which were expected to grow, failed to grow at the expected rates. In Sudan, the 1978-1983 Development Plan aimed at a growth rate of 7.5% per annum, but the actual growth rate was less than 4.5% per annum. In Tanzania during 1977, the GNP increased by 4.6% per annum compared with 5.2% in 1964-1974. Asayeghn therefore suggested that a careful projection of

economic growth is very important in educational planning. He also pointed out that it is not enough to use government statistics for economic projection; to provide proper linkage between education and economic development, one should also include other relevant variables such as the types of skills needed by the labor market. Curriculum design should take into consideration the types of skills.

An example of a government's determination in using education as a means to achieve economic development is found in Cuba (Bqwles, 1971). The Cuban revolutionary government sought to achieve four main goals through education: (1) To expand and utilize the society's productive capacity, (2) to eliminate dependency on the United States, (3) to remove class structure and (4) to transform work into a creative activity for the new socialist man.

Reform was conducted primarily outside the classroom. The first stage of the reform, a campaign against illiteracy, was accomplished through a million literacy teachers who lived and taught in the rural areas for an extended period of time. The second was the school-goes-to-country program, where the entire school would harvest the crops. A third program was the interest camps which were organized around productive activities such as animal husbandry, soil chemistry, etc.

This heavy emphasis on combining education with productive work and group orientation is quite characteristic of socialist countries.

This rapid expansion in education in Cuba, however, led to the same dilemmas experienced by some countries: The decision to emphasize primary and other basic education programs rather than higher education was one dilemma, because the need for technical, scientific and administrative personnel was not being fulfilled. Also, the strong commitment to equality and the problem of intellectual-elite secondary schools were seen as a contradiction.

President Nyerere of Tanzania placed education in the forefront of building a socialist country. His much quoted Education for Self-Reliance (Nyerere, 1968, cited in Cooksey, 1986) placed the following as objectives for education in Tanzania:

- (1) Reduce elitism and other inequities in education to further social and class formation;
- (2) develop a socialist and self-reliant value system among pupils and citizens;
- (3) integrate the school into the village community and prepare the majority for a life in agriculture rather than wage-derived white-collar employment; and
- (4) give priority to national development needs over social demands in determining the expansion of the various education sectors.

Since 1968, a substantial number of policy initiatives have been taken, aimed at furthering one or another of the above objectives. In secondary education, these include:

- (1) Introducing self-reliance activities and political education into the curricula;
- (2) diversifying school curricula away from general academic and toward vocational, including agricultural, subjects;

- (3) drastically limiting the expansion of enrollment to keep student numbers in line with manpower requirements irrespective of demands for schooling; and
- (4) reducing purely academic criteria for Form I entry through a regional quota system.

Throughout the 1970's, the government's policy and practice were to favor the expansion of primary schools with curricula emphasizing subjects relating to an agricultural background (Cooksey, 1986). Exceeded demands for secondary education and unemployment for primary school pupils forced the government to re-evaluate its priorities (Cooksey, 1986).

The abovementioned studies point out problems with quantitative expansion of education systems. Increasingly, education planners are becoming aware of the problems caused by quantitative planning without proper coordination with other sectors of the society and a consideration of the nature and quality of education. Lingapa (1979) summarized the problems caused by quantitative expansion in the following:

- Unemployment among certain categories of educated people,
- shortage of skilled workers in other categories,
- migration of rural educated people to urban areas,
- large-scale unemployment or underemployment,
- brain drain, the migration of educated people to other countries, and
- high cost of education.

Economic development, demand for manpower with skills appropriate to the needs of the country and expansion of what types of education are issues intimately dependent on each other.

Even though it is logical to assume that in the long term, economic prosperity and educational expansion will contribute to each other, in the short or medium term, conflicts do arise, especially in countries where the resources are limited. To produce skilled laborers with vocational education at the secondary level is often at the expense of wide access to education at the primary level. To have two parallel systems, vocational versus general, at the secondary level is often seen as creating inequity. Policy planners should be aware of the fact that there is a trade-off in the attainment of these goals.

In terms of social consequences of education/economic interaction, it was argued (e.g., Carnoy, 1982) that education is tied to a social division of labor which is essentially a capitalist process. School reforms should develop strategies by which the "contradictions" created by the nature of education/production relationships are resolved. Carnoy suggested that alternative development strategies must integrate agriculture and industrial production. Schools should be established in the rural areas to address the need for rural development and to break the cycle of rural/urban imbalance in economic and educational development. A developmental process in education as well as in economical conditions has to involve the input of the masses. Carnoy also encouraged educational systems to take advantage of on-the-job-training and many forms of non-formal education to involve the masses in the participation and production of education.

- 25

To closely link production, economic development and education has been the emphasis of education in the People's Republic of China. Productive work has always been a part of the curriculum in China. Spare-time schools and part-work schools also have proliferated in China both as means to provide education to its people and as means to make education serve productive purposes. While China has suffered from many radical political turnovers which caused severe overhauls in its education system, the basic emphasis on nonformal education in its effects on producing skilled workers is generally considered one of the most outstanding features of education in China (Thomas & Postlethwaite, 1983).

Taiwan's rapid economic development and education expansion in the 1960's and the 1970's have been remarkable. In the 1960's and 1970's, parallel to the economic development in Taiwan, there was a shift in emphasis on secondary education. The ratio of vocational to general education changed from 30 and 70 to 70 and 30 (Lin, 1983). The change in the education system provided more opportunities for people to go on to secondary education. There was also a close linkage between employment and education for the graduates of these secondary vocational education institutions. The economic "boom" of Taiwan in recent years has been partially attributed to the availability of large numbers of skilled workers; on the other hand, the economic development of Taiwan also provided the resources and incentives for educational expansion at all levels.

As a result, universal primary education was realized in Taiwan in the 1970's (Lin, 1983). At the present time, the government in Taiwan is working on extending universal education from six to nine years and has reported tremendous success in this effort.

The success of education in several other East Asian countries is also partially attributed to a close linkage between economic development, employment opportunities and education (Thomas & Postlethwaite, 1983).

Other developing countries, such as Greece, goaded by the need for economic development, are also in the process of placing more emphasis on vocational education and skills training. During 1975-1977, in Greece, education reforms were initiated to develop technical and vocational education at the secondary and higher education levels to replace an earlier emphasis on classics and general education (Kontogeannopoulos, 1978).

The rapid development of technology and science makes job skills easily obsolete. Developing countries not only have to catch up with technological development but also have to keep pace with any recent innovations. An education system, in order to coordinate with and serve the needs of economic and technological development, must be flexible in its structure and content. This makes the task of coordinating education, technological development and employment a dynamic process. Effective and timely planning become most important in the process.

In the 1980's, Little (1984) observed that this coordination has taken on new challenges:

- Global unemployment and
- rapid development of information technology.

Both are issues of concern in not only the developing countries but also the industrialized countries. For instance, there is now an increasing trend in the more industrialized countries for schools to build into their curricula, practical training and work experiences.

The growing economic interdependence between countries makes it difficult to coordinate education with a country's domestic economic condition. Since there is tremendous dependence on the developed countries on the part of the Third World, Walters (1981) found that during the period 1950-1970, education expansion was not a significant predictor of economic growth during 1960-1970 in terms of increase of GNP per capita. The author concluded that economic development of the Third World countries is inhibited by their dependent status in the world economy. With increasing interdependence between nations in the world economy, the effect of education expansion on the national economy becomes difficult to assess. In the future, different units of analysis may be needed to assess the impact of education on economy.

Sex differences and the labor market

Although much has been written about gender differences in education, education of women in the Third World is a relatively new area for research. An impressive bibliography, compiled by Kelly and Lulat (1980), revealed a lack of balance of knowledge about education of women in the Third World. Statistics indicated that males are more often more literate than females irrespective of place of residence. Males tend to have greater access to school and better support in the family. This point is illustrated by a study of groups as diversified as the Masais in Kenya, special districts in India, and families in Appalachia in the United States (Bowman and Anderson, 1980).

Ram (1980) performed a survey and analysis of the major approaches to studying gender differences in the labor market outcomes of schooling. Major dimensions along the sex differences in the labor market, as consequences of education, should include market-activity, wages, earning profiles and rates of return as well as occupational distribution. Two views were presented by Ram: Sex discrimination in the labor market and the "human capital" or "household production" model, which relies on the behavior of males and females in relation to their educational and labor market decisions.

Multiple regression of market hours worked indicated a negative effect of education based on a 1970 sample of 3000 women aged 15-50 in Colombia (Ram, 1980). A tabular analysis was used in Mexico and Costa Rica. A multiple regression analysis was

also used in Sudan. Discrimination theory attributes this difference to discriminatory practices in the labor market; the "household production model" attributes this difference to the household decision in relation to employment outside of the home.

Education in India provides another example of education/employment inequity. Data demonstrated that literacy rates for women in India are still very low. In 1971, 86% had no schooling, and another 11.7% did not complete the first level; of the 0.3% who completed the first level, only 0.3% survived to the secondary level (Singhal, 1984). At the postsecondary level, there were no females from rural areas. When patterns of employment were analyzed, it was found that educated women were not evenly spread over the range of occupations (Singhal, 1984). Most of them were teachers or typists. The rates of unemployment were higher among educated women than among educated men. These data made it clear that access to education in India is limited for women; it is further limited at higher education levels. Furthermore, the labor market does not provide sufficient incentive and pay-off for education for women.

Parental incentive and motivation for education participation

It is generally believed that the perceived pay-off for education with employment opportunity is one of the most important reasons why parents send their children to school.

This opinion is most eloquently reflected in the Diploma Disease (Dore, 1976). There is a good deal of evidence that supports this claim. Oxenham (1984) suggested that this is only partially true. He recently studied evidence from Botswana, Lesotho in south Africa, Ghana in west Africa, Mexico, Central America and India, and found there were more reasons than simple motivation for economic betterment that prompt parents to send their children to school.

In all of the samples studied, there were demands for education independent of the desire for salaried jobs. To be educated, to learn to read and write and to know about the culture of the country, is in itself an incentive for parents to send their children to school. In every area studied, it was found that there was an interplay of both motivations in the economic and employment market context. This interplay resulted in a unique pattern of enrollment in the region. For instance, in Lesotho, where the mining companies employed males with little or no education, the female enrollment in the schools was high. In rural India, where children had to shoulder a significant portion of the financial responsibility for the family, these children were economically constrained from going to school; however, the female children in richer families were not sent to school either, because of a longstanding cultural institution against educating females. Their families believe that schools do not offer the type of knowledge and skills that enable females to fulfill their destined social roles as wives and mothers.

These children were, therefore, culturally constrained. However, both the economically constrained and culturally constrained families sent their children to experimental night schools. This can only be explained by the reasoning that learning to read and write is important to these people, only they cannot give education an overriding priority. When education is offered at little opportunity cost, these families will send their children to schools (Oxenham, 1984).

This type of explanation model can best be studied with multi-variate analyses, if proper operationalization can be designed to measure the different motivations to establish a hierarchy of priorities that parents have in regard to participation in education, and to assess the opportunity costs of education to use as a basis to design alternative and innovative forms of education systems to accommodate the families.

Policies and programs concerning ethnic and language differences

In many countries where inequities in education opportunities are observed, a common pattern of inequity of educational opportunities is ethnic difference.

In 1976, the total population of Fiji was just over a half million people. Fijians and Indians are dominant groups in the population. There were marked inequities in the education systems for these two ethnic groups. The Indians have consistently pressed the government for multicultural and integrated schools. However, the differences have persisted despite the government's efforts to narrow the gap (Bullivant, 1983).

In Sri Lanka, it was found that two ethnic groups, Burghers and Tamils, were overrepresented in the university population, whereas Sinhalese and Moor-Malays were underrepresented. Distribution of university facilities also reflected this inequity. However, with the implementation of Sinhalese as the instructional language in some universities in 1962, it was observed that the Sinhalese had become dominant in the university population. Evidence thus suggests that language of instruction is an important factor of education in a multicultural society (Gunawardena, 1979).

In India, in spite of a constitutional directive to provide free and compulsory education to all children from the age of 6 to 14, ten years after the adoption of the constitution, there

were only 82.8% of the age group enrolled in schools. The enrollment ratio of the age group between 11 and 14 was only 37.9% (Yadav, 1980).

The education of three groups in India is lagging behind: Women, rural population and the Scheduled Castes and Scheduled Tribes, the lowest social castes in India.

There is a low enrollment rate and a high drop-out rate of girls in India. Only 30% of the girls enrolled in primary schools will reach Form V. While enrollment in primary schools for boys is 100%, the ratio for girls is only 63%. Rural/urban differences are also striking. It was suggested that education is perceived as irrelevant in rural India (Yadav, 1980). It is proposed that the curriculum of education in India should be made more relevant to everyday life to provide the necessary incentive to attract the rural population to participate in education.

In a survey of educational policies in multicultural societies, Watson (1979) concluded that there cannot be a single common policy toward education in multi-ethnic societies, because countries differ very much in historical origin, ethnic make-up and general attitudes toward ethnic differences. Policies concerning education in multi-ethnic countries often go through several evolutions according to economic and political contexts. In federal societies, such as Nigeria, policies regarding different ethnic groups may vary from one region to another.

It was observed by Watson (1979) that societies with a deep-rooted racial mix, such as the USSR, China and India, regardless

of political inclination, achieve a degree of national unity by providing recognition of the ethnic and language differences of the ethnic minority groups. In these countries, special provisions are extended to ethnic minorities, with varying degrees of success.

A large number of Third World countries owe their ethnic makeup largely to the impact of colonial rule. In Africa, national boundaries were drawn up with little or no consideration for the tribal groups living on either side of the border. This already complex tribal situation was further complicated by the influx of Asians and Europeans.

Nigeria presents such an example:

With over one-fifth of the total population of Africa within her borders and an extremely wide ethnic and religious diversity in her people, the problem Nigeria faces in building a unified nation has been overwhelming (Bray, 1971). The intensity of the problem was highlighted by its civil war from 1967-1970. After the civil war, Nigeria, with the help of financial resources generated by its petroleum industry, launched programs in education aimed at resolving ethnic rivalries.

The first strategy in Nigeria is the Universal Primary Education Program (UPE). This program increased access to school, as well as provided a first step toward building a national unity. The second strategy was to bring education under the unified control of the federal government. The third strategy was to designate English as the uniform instructional

language.

There were a number of drawbacks observed in these programs; the cost of education was the most important problem. Forced curricula bred contempt on the part of some people. The use of quotas to guarantee access to education for some groups created heated controversies (Bray, 1971).

The complex racial mixes of the South Asian countries make them interesting cases to study. These countries obtained their current racial mix to a large extent through the colonial rules by the British and the French; these coincided with the political problems in China which caused a large influx of Chinese into these countries.

Ethnic problems in these countries are compounded by the fact that ethnic Chinese often achieve higher levels of economic success and educational attainment than the indigenous population. In addition, Thailand, Malaysia and Singapore all have a substantial proportion of ethnic Chinese (Table 7).

[Table 7 approximately here.]

These three countries differ significantly in their educational policies regarding ethnic differences.

Chinese migrated to Thailand in considerable numbers during the eighteenth and nineteenth centuries. They brought with them skills welcomed by the Thais. They were encouraged to intermarry with the Thais and were generally integrated into the society. After the turn of the century, King Vajiravudh (1910-1925) denounced the Chinese in an article, and a series of punitive

measures followed (Watson, 1976). The Chinese schools were forced to close and Thai was imposed as the universal language of instruction. Ethnic Chinese students were required to learn Thai and follow a nationally set curriculum.

Malaysia is one of the most delicately balanced multi-ethnic countries. At the present time, Malays just slightly outnumber the Chinese, while holding the political power of the country.

Education reform in Malaysia was used as a strategy aimed at national integration. The basic objective of Malaysian education reforms in the last two decades has been directly related to two aspects of national integration, structural and political integration, in order to (1) eliminate the identification of race with economic functions and (2) develop a sense of Malaysian national identity, especially among the non-Malays (Wang, 1979).

A unified school system was established under centralized control. The official national language was changed to Malay and a standard curriculum was required of all schools. Financial assistance was provided for Malays, especially in pre-university classes. Government scholarships were given to Malays who met the minimum entrance requirements. Remedial courses were instituted to help Malay students entering the university. During this period, a number of technical colleges were also established (Wang, 1979).

A large number of Malays thus attained upward mobility through education. The education reforms had thus provided wider access for Malay students to participate in education. Since

most of the subsidies were given to Malay students only, this new reform, aimed at creating a national identity, has been criticized as being discriminatory against students who are not Malays, especially the ethnic Chinese (Watson, 1976).

The policy of Singapore has been not only to recognize each ethnic group within its territory, but also to grant them full educational rights. Since 1965, the government of Singapore has sought to bring into its education system the four dominant languages, Chinese, Tamil, English and Malay. The education system at the present time is mostly bilingual, Chinese and English. The four dominant languages are used at primary and secondary levels. This policy was implemented to preclude the dominance of one cultural group over the other groups and to build a truly pluralistic society in a country where Chinese are the majority of the population (Wang, 1974).

It can be seen from the abovementioned cases that education policies pursued by governments are very different. Depending on the political philosophy of the government, different policies have resulted in differential accesses to education, despite the fact that most of the governments profess to provide equal access to education.

In many multi-ethnic countries, hatred and prejudice have formed through centuries of racial/ethnic conflict. These are factors hard to overcome and cannot be legislated against. However, education, being a driving force in a society, is a place where hatred and prejudice can be gradually eroded. Watson

28

(1979) suggested that in the United Kingdom, the following can be done to gradually reduce racial tensions: (1) There need to be coherent government policies on multi-ethnic education; (2) teachers in training need to be made aware of other multi-cultural societies; they can be taught rudimentary understanding about the languages and cultures of other ethnic groups; and there need to be more comparative studies on multicultural education, both at the macro- and micro-level.

Colonial legacy and decolonization of culture

Many developing countries, in their early development of modern education systems, were influenced by Western countries either through colonial rule or through the activities of Western missionaries. During nearly four decades, Quaker missionaries had an education monopoly in western Kenya. The educational experience of four neighboring groups, Idakho, Isukha, Maragoli and Tiriki, differed considerably in their responses to the Friends for Africa (FAM). The FAM demanded a price--acceptance of their religion--before cultural advantages and education were imparted. The Maragoli maintained their educational advantages because of a blending of cooperation with the FAM and constant pressure to obtain better education; the Tirikis, at the other extreme, offered resistance to the FAM because they chose to cling to traditions which were contrary to FAM's doctrines. Therefore, educational opportunities were withheld from them. For the Idakho and the Isukha, the educational opportunities were somewhere in between. Those who converted often still held to basic African traditions. Being somewhat geographically removed, they were not the central focus for missionary activities. The gap widened when the FAM accepted the colonial government's support and supervision. Through this cooperation, a tiered system of schools and programs was developed, but development did not occur evenly across the areas. FAM-supported schools remained the only sources of education until local African church

leaders became involved.

In spite of the fact that the African nations had achieved political independence, the African universities failed to become institutions that independently served African needs (Mazrui, 1975). This was a result of the fact that the educational system was originally an extension of European institutions that dictated the curricula, selected the teachers and determined the standards which allowed the students to progress through the system. Even after the schools became controlled by Africans, the leaders of African education were often those who had been trained by Western, or colonial, education.

Ruddle (1982) examined the ideology of British colonists, who were the policymakers regarding African education in the 1800's, how ideology affected education made available to the Africans, and how Africans responded to education. It was revealed that colonial education and working class education in England were parallel in objectives during this period. Early in the 19th century, educational programs being considered for both groups were aimed at the training of vocational skills to serve the need for productive labor in Great Britain. The natives of Africa and the British working class were considered "uneducable" otherwise.

Colonial rule also affected the selection of instructional language. The general principle of British colonial policy was that, as far as possible, primary education should be offered in

41

the vernacular language for the different groups. The French and the Dutch maintained that the instructional language should be French or Dutch in the colonial schools. After independence, former French colonies like Niger, Chad and Benin (formerly Dahomey) stated in their education laws that "public education shall be given in the French language" (Watson, 1979).

The problems encountered by some of the former British colonies are as they were during colonial times. One problem has been to find a vernacular language that will be accepted by all groups involved in the education system. Countries like Nigeria, with many diverse linguistic groups, simply chose to adopt English as an official language in order to achieve uniformity in instruction. So did Ghana. Kenya, at independence, had thirteen different languages used in schools. Because of the cost of using so many languages in instruction, the government introduced a measure in which primary education is commenced in the mother tongue of the student and gradually progresses to Kiswahili as the medium of education by Standard V. (Watson; 1979).

In Tanzania, Kiswahili has been the language of primary education since 1967. The general political push toward a widening use of the language has been reflected in education policy. It has been assumed that the eventual Kiswahilization of the education system should be just a matter of time. The Presidential Commission on Education in Tanzania, however, came out in favor of retention of English at the postsecondary level

and opposed crash programs to combine both English and Kiswahili in the schools. Vacillation between acceptance and rejection of English is an important reason for the generalized low achievement observed in Tanzanian students (Cripser and Oodd, 1985).

Similarly, in a number of African countries, efforts were made to rewrite textbooks to make the curriculum more relevant to the native culture. Since 1975, when Mozambique became independent of Portugal, the government has been involved in restructuring national goals, values priorities and practices. Their approach was a blend of Marxist-Leninist principles and radical practices (Barnes, 1982). Education served the purpose of "liberation." Schools were nationalized and brought under direct government control. The new government slowly developed new teaching materials which stressed Mozambique history and culture. During the first five years of independence, Mozambique gave high priority to education expansion. The enrollment increased threefold. With the massive influx of students and shortage of trained teachers, the quality of education had not reached the government's expectations. The newly developed teaching materials, however, radically changed the content of education and made education more relevant to the people, which in turn attracted more students.

Similar effort was observed in India, where there was also rewriting of the textbooks and curricula to de-emphasize the British colonial rule while stressing the glories of Indian

history and the culture of the precolonial periods. The new textbooks, as surveyed in 1970-1971, reflected the government's attitude toward the West: There was a transmission to the students that the West was still technically superior, still to be blamed, still to be emulated and still to be sought for approval (Elder, 1971).

Mazrui (1975) suggested that true development in the former colonies in Africa requires three main strategies: (1) Domestication of schools, (2) diversification of schools and (3) penetration of schools into the African societies. There should be allowance for the African society at large to participate in the educational system in terms of admission requirements, curriculum content, criteria for faculty recruitment and university organization. It will be interesting to see programs derived from these types of suggestions and the effects of the programs in terms of increasing educational participation.

Foreign training for technical professionals

A strategy which has naturally grown out of the need for skilled professionals for economic development and modernization is the sending of promising students to foreign countries for training. Governments either provide scholarships and other subsidies to send their students abroad or allow students who are able to support themselves to go to other countries for training. This practice provides able students the accesses to more training. The results of this practice, however, are considered

mixed.

There are pros and cons for this practice. Some of the disadvantages observed are: (1) The knowledge and methodology the students have learned in the technologically more advanced countries are far removed from the realities of the home country; (2) the students have problems translating what was learned in another country to their job assignment in the home country; and (3) the "brain drain"- the brightest and most able students often remain in the foreign country (Moock, 1984).

However, with knowledge growing more specialized, it is often beyond the capacity of the education systems of developing countries to meet the goals of training needed by professionals and to fulfill the aspirations of students to further their education. Nevertheless, sending students abroad remains one of the more popular practices in developing countries.

45

ENDOGENOUS VARIABLES

Problems in planning and implementation of education policies

An analysis of the gap between planning and implementation of education policies in Nigeria revealed problems that may not be unique to Nigeria (Nwankwo, 1980). This analysis identified sources of gaps between planning and implementation as the following: Historical development of educational administration, unclear objectives of planning, political instability, diversity of planning bodies, inadequacy of communication and an overall low quality of planning.

Historically, the administration of education in Nigeria has been influenced by the Christian and Islamic elements of society. Education planning has only a very short history in Nigeria, and the planning bodies are considered entities outside the education system. In Nigeria, there have existed several education planning agencies at the federal level; none of them, however, had the full authority and responsibility for planning education and execution. Communication between these planning bodies has been poor or insufficient. Closely related to historical development are these competing objectives--economic modernization and preservation of traditional identity.

The lack of relevant data has made projection difficult. There is a tendency for planners to use planning models that are either outmoded or overly sophisticated for the situation in Nigeria. All these have resulted in low quality of planning. Strategies have been proposed by Nwankwo (1980) to narrow the gap:

- Creating a national planning body,
- participatory planning, involving the planners, the implementors, the facilitators and the consumers of education,
- clarification of educational goals, and
- establishing teacher centers to enlist the help of teachers in the planning process.

Constraints in using the abovementioned strategies were also pointed out by the same author:

- Continued scarcity of trained personnel,
- scarcity of funds,
- lack of effective mechanism of co-ordination, and
- limitations of decision-making power placed on the planning bodies by the government.

The observations made in this analysis, to a great extent, are generalizable to other developing countries.

Admission policies, mechanisms and practices

Admission policies, standards and practices are factors which directly contribute to the access or lack of access to the education system. Education policies and admission standards are in turn affected by factors such as education philosophy of the planners, the availability of candidates, the capacity of the system and the projection of labor market needs. The planners set priorities of its education objectives and evaluate the capacity of the system in order to decide admission standards for different levels of education. Admission policies, mechanisms and practices, therefore, are dependent variables themselves.

Selection and testing has become a technology in itself in modern social science. Once a policy is articulated at the planning level, the operationalization and the execution of the plans require in-depth analysis of the validity, reliability and potential side effects of the selection practices.

Academic tests, especially the ones used for admission purposes, have been a subject of much study in the United States. Agencies such as Education Testing Services (ETS) have been under intense scrutiny for the fairness of its admission tests, especially where ethnic minorities are concerned.

Governments of many developing countries are aware of the issues concerning admission practices. China has been vacillating between different methods of admission practices at different stages of its history when different political ideologies have prevailed. After a decade of radical experimentation, such as abolishing entrance examinations for tertiary education and relying on community recommendations and students' political awareness for entrance criteria, China has recently (since 1977) come back to using achievement-oriented entrance examinations. During the period of experimentation, the majority of university students were from peasant/worker backgrounds. After the implementation of the renewed entrance examinations, a majority of the college students in China again reflected an urban and professional origin.

Japan, Taiwan and South Korea are countries in East Asia known for their competitive examinations for college admissions.

These countries have also enjoyed high achievement in education both in terms of enrollment ratios and in terms of accomplishment in basic skills acquisition. Some educators criticize this practice in terms of its narrowness in focus and rigidity in practice. They have pointed out the following drawbacks of this type of admission practice (Science, 1986):

- Teachers teach on the basis of what will be tested on the examinations.
- Students are discouraged from deviating from standard texts and are stifled in the development of creativity.
- These practices, in turn, create an elitist group of obedient, conforming individuals.

This type of admission practice favors students who are "test-wise", with narrow focuses, and does not favor students who are creative, with wide interests. Because the examinations are very competitive, students who fail the first time usually do not have much chance to take the examination again and pass. This type of admission practice is seen as a way of blocking access rather than providing access for a significant number of students.

In the United States, Education Testing Services (ETS) has a monopoly on academic testing. Each year millions of students take the tests designed and used by ETS. Nairn, et al. (1980) have pointed out that there is evidence suggesting that ETS tests fail to predict academic and occupational performance. Grades, biographical questionnaires, personal rating scales and past accomplishments have been proven to be better predictors of future accomplishments. The fact that Blacks, Latins and other

minority students tend systematically to receive lower scores demonstrates a potential bias of these tests. Many schools are now not relying totally on ETS test scores; they take into consideration other variables such as high school grades, biographical information and past accomplishments for admission purposes.

Little is known about admission practices in most developing countries. Bray (1985), using information based on previous work in the area of education in developing countries, found that selection for entrance to higher education takes many different forms. Most countries attempt to establish a systematic practice for admission selection. Bray (1985) identified nine categories of selection practices in developing countries:

- Examinations,
- government quotas,
- character or political performance,
- social class,
- gender,
- religion,
- ethnicity,
- personal wealth, and
- bribes.

These nine categories are identified as being practiced in developing countries. While the objectives of education and philosophy of education are given factors, research should be done on admission practices to ascertain whether the admission

51

practice actually carries out the "mandate" set by education authorities, whether the practice selects the type of students worthy of education, whether there are unfair practices unintended by the educators, and with a given objective, what is the best way to make the selection. Gray (1985) suggested that the best of all worlds can be achieved by using both internal (school marks) and external assessments as selection criteria and using a combined examination and quota system to accommodate the dual concerns for merit and equity.

Reduction of unit cost of education

One way to resolve the problem of financing education is to reduce the unit cost of education. This can be done through utilizing innovative learning technologies which reduce the requirements of teaching personnel, the most expensive item in education. Teacher salaries may absorb as much as 75% of the recurrent costs of education (Avalos and Haddad, 1981).

In 1977, teacher salaries in Ghana accounted for 75% to 80% of recurrent expenditures in education, and the education budget represented 25% to 30% of the total government budget (Avalos and Haddad, 1981). A similar situation is observed in other countries. If the cost for teachers can be reduced, it would be a significant saving for education systems.

In Japan, Taiwan and other East Asian countries, salaries for teachers constitute a smaller proportion of the education budget. Their education budget, in turn, is a smaller proportion

of the national budget. In Japan, the education budget is only 17% of the national budget (Cummings, 1979). In these countries, classes are usually large, with the students-to-teacher ratio often at 40 or 45 to 1. Quality of education does not seem to suffer from this large ratio; these countries enjoy high achievement in education both in quantitative and in qualitative measures.

Efficient classroom management, such as the kind practiced in Taiwan and Japanese schools, needs to be researched in order to identify methods to help other countries reduce their unit cost of education production. A series of research projects, currently undertaken by Herald Stevenson and his associates at the University of Michigan/Ann Arbor on teaching, learning and classroom activities in Japan, China, Taiwan and the United States, offer much hope in this area.

Distance education

Distance education has been deployed by many countries as an attempt to solve a multiplicity of problems, such as education for scarcely populated, outlying regions and school and teacher shortages.

The effectiveness of distance education seems to vary from program to program. In countries where distance education has been implemented on a large scale, there are studies that lament the "elitist" orientation of the content, which perhaps "reproduces" the social inequality that already exists (e.g.,

Ginsburg & Arias-Godinez, 1984). In rural areas where such programs have been implemented, ownership of radio and other telecommunication equipment determines the control and therefore the effectiveness of the program.

The appropriateness of telecommunication technology to the country is often a factor overlooked by many planners (Hancock, 1984). Due to the shortage of trained technicians to appropriately handle the equipment, much of the sophisticated technology is wasted. What most developing countries lack is organizational structures to manage and to coordinate education with telecommunication systems.

In order to meet the needs for adult education, the government of Zambia developed education programs using self-paced correspondence courses in agriculture, health and nutrition with emphasis on rural mass production. In a country where oral explanation dominates in teaching, the effectiveness of correspondence courses remains to be evaluated (Giacivena, 1983).

In countries where there are different language and cultural groups, it was found that programs were more successful when they were delivered in the same language as the students. But the prohibitive costs of producing education programs make it difficult to produce programs in different languages. Distance education is, therefore, producing mixed results.

These mixed results can best be illustrated in a study conducted in India, the Project SITE. Satellite Instruction Television Experiment (SITE) was implemented in rural India with

the expectations that children exposed to SITE would attend school in greater numbers, show more interest in learning, and demonstrate higher achievement and an improved behavior pattern in classrooms. Results indicated that, while student attendance and scholastic achievement were not affected by the program (Shukla, 1979), significant gains in language development and a greater interest in learning were found in the children who watched the program. Attendance rather than enrollment was used in this study as an indicator of access to school since students had to be on the school premises to view the program.

Considering the balance of results of distance education, it is concluded that distance education may not be superior to traditional education, but in rural areas and outlying places where there are no schools available, distance education of various forms provides a logical alternative. Since it can be delivered around the work schedule of the students, distance education is a better alternative than boarding schools. The effectiveness of individual programs hinges on the appropriate technology used for the program, the language of instruction and the relevance of the curriculum to the local community (Hancock, 1984). With some drawbacks, distance education remains an attractive alternative to traditional formal education.

The People's Republic of China is now experimenting with one of the world's largest distance education programs. The radio-television education programs in China are mainly aimed at providing education at the secondary and tertiary levels. The

open university system has reached 25% of the Chinese workers in various factories. The English-as-a-second-language teaching program is one of the most popular programs in the People's Republic. Chinese sources have indicated that most graduates from these programs meet the same standard held by those from regular schools (Beijing Foreign Language Publications, 1982).

Implementation of innovative learning programs with new technologies seems to meet with at least one obstacle--the perception and acceptance by students and parents of the new technology and methods. Since the school is considered not only a place for learning but also a social/cultural institution, there are culturally conditioned ideas and expectations as to what a school is and should be. The new learning technologies involve not only different methods of delivery of information, but also, in most cases, radical reorganization of the classroom, the management of the school and the role of the teacher. Despite the positive evaluation of cost-effectiveness of learning delivery function of these new methods, some parents were found skeptical about the new programs.

New research and development are needed in these innovative technologies, to explore the social functions and consequences of learning delivery systems developed around these methods, to determine whether some of the functions of socialization in traditional schools and classrooms are being removed or replaced.

Other cost-cutting measures that will make education production more economical are: The streamlined administration of

education, cost-effective methods of teacher training, and the use of innovative teaching and learning methods, which will be reviewed by other BRIDGES components.

Financing the schools and the education system

Financial difficulties have been cited as the most fundamental obstacle in providing wider and more democratic access to education. Education financing is an area of study which warrants in-depth analysis beyond the scope of current review. There are some common generic strategies employed by different countries in resolving financial problems. The following are some of the strategies:

Seeking alternative financial resources

- relying on foreign aid,
- decentralized education planning and relying on local sources of financial support, and
- privatization of education.

Improving internal efficiency of the system

- training efficient administrative staff,
- reducing unit cost of education production,
- optimal utilization of available resources, and
- low cost teacher training.

Each of the abovementioned topics has been studied extensively. In this review, we will briefly highlight some of the considerations countries have in adopting different strategies.

Alternative financial resources

57

Relying on foreign aid is a commonly adopted strategy. Some countries look upon the use of foreign aid as the last resort for fear of compromises that the country has to make in order to obtain the foreign aid. There has been much written on the pattern of foreign aid given by different national (such as the Ford Foundation and the U.S. Agency for International Development) and international agencies (such as UNESCO and the World Bank) in their efforts in aiding developing countries.

An article appeared in the Harvard Educational Review (Berman, 1979) which analyzed the relationships between United States foreign policies and major American foundations, notably, the Ford Foundation, Carnegie Foundation and Rockefeller Foundation, and concluded that these foundations have directed their support at areas of political and economic significance to determine the needs of the developing nation.

Decentralization of educational financing also produces varied success. One of the most obvious problems is that the richer regions will be able to provide better education systems, while the poorer regions will fall further behind in education development.

Decentralized financing was practiced in Japan during the turn of the century. However, because of the inequity in the quality of education produced by this practice, laws were enacted for the central government to provide additional revenue to aid the prefectures that had problems meeting the cost to provide quality education (Ministry of Education, Japan, 1980).

At the present time, there is almost no discernible difference in the physical facilities, teacher qualifications and quality of curricula in Japanese schools in different regions (Cummings, 1979).

In China, industries, factories and local communities sponsor schools of various levels. There are clear differences in the facilities, teacher qualifications and the general quality of education from one region to another. The government has tried various methods to reduce the inequities (Beijing Foreign Language Press, 1982) with varied success. At the present time, there is apparently a two-tier system with the "key" schools being financed and administered directly by the state-level Ministry of Education, with other schools financed and operated at local levels. (Taylor, 1981).

In order to provide wider access to school by increasing the number of schools, the Chinese government has been encouraging local communities to sponsor schools, literacy classes and education programs of various kinds (Hawkins, 1983). At the present time, there are no systematic studies on the quality and capacities of the locally-sponsored schools in China.

Along the same lines as the decentralization of education, financing is the involvement of religious and private schools in the education system. Countries seem to differ in their preference for involving private schools. One of the most important considerations is the fear of losing control over the quality and the nature of education.

One interesting study compared Thailand's effort in shifting education planning responsibilities from the central government to the provinces and municipalities with the practice of privatization of higher education in the Philippines (Danskin, 1979). This study indicated that in Thailand, there were lower enrollments of students in higher education, while in the Philippines, there was a higher percentage of students in higher education; however, compared to the students in the Philippines, Thai students were better prepared academically and had better chances of employment upon graduation.

One of the concerns some governments have in terms of privatization of education relates to the problem of equity and the actualization of educational philosophies held by the government. In the People's Republic of China in the 1950s, the government closed down all private schools, most of them operated by American missionaries (Price, 1976). In Tanzania, the socialist government allowed the existence of private schools which charge fees for education. This practice was criticized for allowing inequity to exist within the education system (Cooksey, 1986).

In Japan, private schools, mostly sponsored by Christian missionaries, are incorporated into the system and are under the regulation of the Ministry of Education (1980). We do not have much information on private schools at lower levels in Japan. At the university level, the private universities do not enjoy as good a reputation as some of the public universities such as

68

Tokyo University.

Privatization of education financing is therefore an issue of much debate. At stake are the government's and the society's perception and ideology as to what education is and should be, and whether the private sector can be "trusted" to finance and thus have control over education.

Improve internal efficiency of the education system

Improving internal efficiency of the education system covers the entire gamut of issues studied by Project BRIDGES. Most of these issues, including cutting unit cost of education production, improving management efficiency, organizational efficiency of the school and cost-efficiency, organizational efficiency of the school and cost-efficient classroom management, are reviewed in-depth by other BRIDGES components. Here, we will only briefly highlight some of the issues.

Perhaps the most intriguing issue in educational financial management is the distribution of resources across different levels and different types of education. This issue invariably involves the quantity versus quality issue of education.

At the present time there are no comprehensive theories in resource allocation and enrollment mix (Urwick, 1986) which provide a basis for "optimal" resource allocation and enrollment mix. Factors other than economic considerations often play important roles in this determination (Tilak, 1984, 1986).

The World Bank's report on economic returns of education

indicates that economic returns on primary education is far higher than on higher levels of education (Heyneman, 1985).

However, this observation has to be taken into consideration within the overall picture of economic development, manpower demands, the social needs for education and the political intentions of the leaders of the country. Expansion in primary education without proper coordination with the country's need for technical and administrative manpower and the generated needs for higher education will cause problems in economic development, frustrations in the graduates, and employment problems for the primary school leavers. Such was observed in Tanzania with the "Education for Self-Reliance" (Nyerere, 1968) programs (Cooksey, 1986).

Efficient management of education systems

The need to efficiently manage education systems is as old as the systems themselves. As education systems grow in size and complexity, the problems associated with their management and administration grow proportionally.

An impressive annotated bibliography on practice and research in educational administration and management was compiled by Basil (1979) for UNESCO. Efficiency of management of education systems, like any other aspect of a country's development, is related to the overall level of development of the country. The management of modern complex organizations is itself a product of modern industrial society. The problems of

62

management are therefore most acute in the newly independent countries which are trying to move from mostly agrarian, pre-industrial societies to modern industrial societies. The concept of scientific, conscious planning and execution for efficiency and productivity may vary in these cultural contexts. However, there are issues fundamental to the administration and management of all public (and private) work, not just to education production. They are, however, beyond the scope of the present review.

CONCLUSION

The education system as an open system is intimately interacting with its environment. Educational policies are made in the context of a country's history, cultural and social institutions, its ecological conditions and its general state of economic and technical achievement. Programs designed as operationalization of policies are also affected by the contexts in which they are implemented.

We have identified two categories of variables affecting programs and program effectiveness in terms of participation in education or access to school. Those that provide the context for planning, programming and program implementation are considered exogenous variables. Those variables that are inherent in the planning, programming and program implementation

system are grouped as endogenous. Throughout our review process, we have found that the two categories of variables are closely interacting with each other to give rise to the unique pattern of education participation in a country. Generalization of findings is thus a challenge. One cannot look at a single variable to see its effect; one has to take into consideration a constellation of variables in their specific combination to assess the effects.

The successful cases involve countries in which a number of conditions are present to produce high enrollment. Some conditions stand out as more influential than others. Coordination between education and economic development stands out as one of the more important conditions. Educational success in Japan and other Eastern countries all correspond to their economic advance. Education and manpower projections and education/employment linkage represent another condition which is fundamental in providing the necessary incentive for education participation. Countries that carefully coordinate these different sectors of development are countries where education participation is high.

According to UNESCO surveys (1981, 1985), education participation has achieved tremendous success at a worldwide level. The tasks at hand are to address: (1) The issue of inequity, i.e., democratization of education, (2) the issue of quality of education, (3) the issue of education expansion to overcome population growth, and (4) the issue of education to adapt to and to facilitate technological and social

104

modernization. Developing countries are thus faced with a dynamic challenge. They must address past deficiencies and inequities and also catch up with the evergrowing population and technological advances. These challenges require diligent monitoring of education performance, frequent and accurate gathering of statistics on population growth, and projection of manpower and educational needs. Unfortunately, most developing countries do not have adequate organizations and personnel to collect data reliable enough for analysis and projection. As a way of recommendation to policy planners, the first order of business should be to improve data collection techniques and personnel efficiency.

To make projections and formulate planning in this dynamic situation, adequate planning models are needed. Developing countries have a tendency to adopt models that are outmoded or ultra-sophisticated, i.e., the most up-to-date (Nwankwo, 1980). Careful selection of planning models should be of fundamental importance to a country.

Any given country would have multiple goals for its operation. Frequently the goals are not compatible with each other. When no clear priority between goals exists, implementation of any program may become difficult. Goal clarification and priority-setting should be essential for planners.

There are several common dilemmas experienced by developing countries during education expansion. The most fundamental

dilemma is the dilemma between production of the manpower needed for the country's economic development and education equity.

In the long run these two objectives may complement each other; but in the short or medium run, countries are competing for the funds for achievement of these goals. Three practical conflicts were derived from this basic dilemma: (1) The issue of quantity vs. quality, (2) the issue of secondary vs. primary education and (3) the issue of vocational vs. general education, especially at the secondary level.

We reviewed the different priorities countries place on these two objectives. As with most other issues in education development, the success or failure of taking either approach does not stand on its own merit; sector coordination, appropriate manpower projections and the current levels of technological development all play very important roles in this matter.

Reducing the cost of education production is a basic means of widening access to education by increasing the capacity of the system. Various innovative learning technologies offer promise in this regard. Efficient classroom management techniques, with which a teacher can teach more students and thus cut the cost of education, should be another promising area of research.

Almost all the studies agree that community involvement in education facilitates education participation. Relevant curricula and close communication between the school and the community should help promote participation.

Perception of the objectives of education has been examined

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by a few studies (e.g., Payne, 1986).

Our understanding of this area will be greatly enhanced by studies of the following categories:

Nomothetical principles of how single variables operate in education development are difficult to derive at present. Scholars in this area suggest that it will be more fruitful to do in-depth case studies of programs in a given context (e.g., Urwick, 1986).

Studies of the following categories will greatly enrich our understanding in this field:

1. Systematic analysis of the entire process of education planning and implementation from conceptualization of policies, operationalization of policies into programs, implementation of programs and finally evaluation of programs. There are studies of each stage of the process, but we have not yet located studies that have run through the entire process.

There are studies of programs in a specific country, such as a recent article by Cooksey (1986) on secondary education in Tanzania. However, most of these studies tend to follow an entire set of policies with many programs in education planning. Studies of the design and operationalization and implementation and effectiveness of single programs would be more informative in terms of in programmatic solutions to problems in access to education.

2. Ethnographic studies of the perceptions and the belief systems of education, the schools and expected outcomes of the school which constitute perhaps the most important contextual variables which permeate all stages of the process of education planning and implementation. The difficulty of generalizing findings from one country to another is generally attributed to "cultural differences," but few attempts have been made

to identify what the "cultural differences" are. Studies in this area will offer a key to answers needed to make sense of some apparent discrepancies in findings.

Many scholars suggest that new innovative programs have experience problems in developing countries; most of these problems have to do with "the powerful and highly resistant attitudinal oppositions of teachers, parents and students to many of these changes (Payne, 1986).

It seems that the culturally conditioned belief systems underlying the nature and objectives of education and education systems should be systematically investigated. While the implementation of new programs may gradually change the expectations of the society, in the early stages of program design and implementation, these cultural factors have to be taken into consideration for effective programming.

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89

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Education in the People's Republic of China is a much studied subject (e.g., Hu, 1962, Price, 1976, and Hawkins, 1983). China presents an interesting case study because the country has faced almost all the problems identified in education development: the burden of a vast population, a vast territory where many regions are mountainous and difficult to gain access to, scarcity of natural resources, poverty, lack of infrastructures, and the burdens of histories, traditions and political instability (Price, 1976). The intense commitment and effort toward better education on the part of the government are also evident throughout the country. China has produced many innovative programs in providing basic education, skills training and adult literacy. China has been "experimenting" with, on a very large scale, policies and programs at different stages of its history.

China and India have faced many of the same educational problems which are characteristic of most developing countries, but their problems are magnified by the size of their populations. In handling these problems, China and India have offered very different approaches (Arnove, 1979).

Their problems include: (1) Massive illiteracy. China has a strong national will to tackle the illiteracy problem; India so far has not demonstrated a coherent policy and effort toward drastically reducing illiteracy, (2) lack of universal access to

education and uneven distribution of higher education. In India, the traditional caste system still prevails, (3) a hierarchical, elitist examination-oriented education system unrelated to productive labor and economic needs, (4) a large number of unemployed school leavers, in India, among university graduates, in China, among secondary school graduates, and (5) dependence on foreign educational models. The Indian education system has been modeled after the British system, and the Chinese system modeled after the Soviet system. Impressive progress has been made in both countries as far as education is concerned; however, the levels of achievement have not met the needs of the countries. The problems in education are magnified by their vast populations, traditions and enduring cultures.

Education in the People's Republic of China is sometimes cited as a model of success and sometimes cited as a failure. Much of the argument on either side amounts to polemics; the lack of reliable statistics about education in China makes evaluation difficult.

The magnitude of the problems in education which China is facing is unprecedented. The enormous difficulty in communication and transportation caused by the vast and rugged terrain makes implementation of any program difficult. Lack of sophisticated technology in these areas, and the abject poverty of the people and the burden of tradition also make education in China a tremendous undertaking. It is difficult to compare China with other countries; the success or failure of education in

China has to be judged within its own context.

Education in pre-modern China before 1911

China has one of the world's longest continuing histories. From 2000 years ago, around the time of Confucius and other great scholars of China, education has been a highly valued social institution. Masters such as Confucius, Mencius and others often formed their own schools and attracted great followings. The schools were supported by tuitions paid by the students. The masters themselves sometimes performed duties for the court, during which time their schools would then be sponsored by the court. The installment of a system of civil service examinations in China made education an important means and sometimes the only means for people to move up in society and to escape the harsh peasant life. This practice has left a legacy in China and some of the East Asian countries that can still be felt today: Individuals and families perceive education as the most important aspect of a person's life. To be educated not only is to be respected but also is a vehicle through which to achieve a better life and higher status.

However, in pre-revolutionary China, the long years one had to spend in preparation for the examinations, and the tuition and expenses for books and supplies made education, even though highly valued, beyond the reach of ordinary peasants. In an agrarian society, sending a young man to school means the loss of valuable production labor. Such loss was beyond the ability of

most peasant families to absorb. Even today, in rural China, education officials still have problems convincing some parents to send their children to school. Unless there are measures to compensate the families for loss of production and loss of income, the situation is not likely to change in the near future (Price, 1976).

China's population is the largest in the world. China is therefore faced with the most difficult task of providing education to a vast population of which, before 1949, more than 80% were illiterate (Beijing Foreign Language Press, 1982).

It is estimated that 80% of China's population live in the rural areas where there are tremendous problems of accessibility (Price, 1976). In addition to the Han majority ethnic group, there are fifty-four different ethnic minority groups, most of them having their own languages different from that of the Hans (Beijing Foreign Language Press, 1982). Among the Han people, the written language is the same, but the spoken language differs from region to region with at least thirty-five different variations of the spoken language.

At the present time, the language of instruction and the official language used by the government is "P'tonghua," a common form of Mandarin. In regions where ethnic minorities dominate the population, primary and sometimes secondary education is conducted in the native language of the dominant language group (Price, 1976).

The government of China has put forth a herculean effort in

population control. Because of the shifts in government policies regarding population in the past thirty years and the traditional mentality in favor of large families, population control policies have not always been effective in China. At the present time China has a population of over a billion living on a land which is slightly smaller than Canada and approximately the same size as the United States, with much fewer resources. The difficulty in education can be readily seen.

Education in China, 1900-1947

Before the 1900's, education in China was reserved for a small fraction of the population, mainly for passing the civil service examination. The content of study was mainly Confucian classics.

Western-style education was introduced to China by Christian missionaries and the Chinese who went abroad for education. By 1916 it was estimated ten million Chinese had received a meager exposure to some form of modern education. In 1914, there were campaigns for universal schooling, and attention was paid to adult literacy programs. These programs paralleled the May Fourth Movement, which advocated the use of the vernacular language in literature and education as an integral part of a general call for modernization of China (Thomas & Postlethwaite, 1983).

A League of Nations report on education in China in the 1920-1930's observed that the education system in China during that period lacked sufficient relevance to the country's

China

5

cultural, social and economic realities. The system was modeled too much after Western models, especially the American model (Hu, 1962).

The Nationalist government in the late 1930's launched a special effort to expand primary education. This effort was disrupted by Japan's invasion of China (Hu, 1962).

In pre-liberation days, i.e., before 1949, education was reserved mainly for the privileged rich. The chance to receive schooling was denied to the vast majority of the people. Over 80% of the whole population was illiterate, while in the rural area, illiteracy was over 95% (Qi, 1979).

Education in China, 1949-1958

In 1949, China barely had over 200 higher-education institutions, 4,000 secondary and 289,000 primary schools with a total number of 24,000,000 students. Apart from their limited numbers, the distribution of these institutions also posed problems:

- Universities were clustered in the large cities of Beijing, Tianjing and Shanghai.
- Secondary schools were only found in a few counties, and mostly in coastal provinces.
- Schools, even primary ones, were rare in border regions and the areas designated as National Minority Regions.

Chinese Constitution and the Common Program

On September 21, 1949, delegates to the First Plenary

90

China

Session of the Chinese Political Consultative Conference adopted a Common Program. Chapter Five of the Common Program contains the provisions on education (Price, 1976):

- Article 41: The culture and education of the People's Republic of China are new, democratic, that is, national, scientific and popular.
- Article 42: Love for the fatherland and the people, love of labor, love of science and the taking care of public property shall be promoted as the public spirit of all nationals of the People's Republic.
- Article 43: Efforts shall be made to develop the natural sciences to place them at the service of industrial, agricultural and national defense construction. Scientific discoveries and inventions shall be encouraged and rewarded. Scientific knowledge shall be popularized.
- Article 46: The method of education of the People's Government shall reform the old education system, subject matter and teaching methods systematically according to plan.

These policy statements clearly portray a picture of a democratic educational system which goes hand in hand with two main objectives of the People's Republic: Development and modernization of the economy and equality and democratization of education. The translation of the latter into action has been confusing and difficult. Through the history of the People's Republic, there have been changes in emphases from one extreme to another.

Since 1949, education in China has undergone fundamental changes.

- The government took over the establishment of education, and made necessary structural changes in education.
- Educational development in China paralleled economic development in the country; it is therefore influenced by

81

the prevailing political-economic philosophy of the time. Curricula and admission policies are the administration of the schools dictated by ideology.

- The period of the 1950's was generally recognized by most China observers as a "golden era" of development.

Educational development fared well during this period of time.

The following are some statistics substantiating the success of educational reform during this period in China:

"Over 54,436,000 students attended either universities or schools in 1952, doubling the pre-liberation number in universities by two-and-a-half times that in schools. By 1957, the total number of students reached 71,800,000, of which 440,000 were university students, as compared with 190,000 five years previously. By 1978, there were about 600 universities and colleges, over 160,000 secondary schools and 950,000 primary schools offering courses to 850,000 college students, 65,480,000 secondary and 146,240,000 primary school students."

- Primary and secondary school education is almost free with the exception of a few yuan for miscellaneous expenses such as textbooks, etc.
- Before 1949, only 20% of the population received primary education. Now in China, though definitive statistics are lacking, it is generally observed that primary school education "has been basically popularized."

Innovative programs have been deployed to promote access to school in China:

- To solve the problem of scarcity of schools in remote and underdeveloped regions, a diversity of forms of schools has been formed to meet the special needs and lifestyles of particular populations.
- Teachers travel from village to village to teach; the traveling teacher program functions in mountainous regions of China.
- Traveling or mobile schools serve nomadic tribes in the northwestern grasslands.
- Teachers go to fishing boats where children are required to help the family in fishing, and teach the children during their off-intervals.

- Afternoon and evening shifts are established for children in rural areas who are required to work in fields or on household chores.

Education and production are looked upon as two endeavors that should go hand in hand. Hence, secondary school and university curricula often emphasize the utilitarian values of production skills. There are different forms of secondary schools; for example, vocational schools which provide agricultural science and mechanical training for their students who go into the production force immediately after graduation.

Different forms of higher education are now being put into practice. They include work-study agricultural colleges and workers' universities run by factories.

Education in China 1958-1962

(The Period of the Great Leap Forward)

In 1958, the Central Committee of the Chinese Communist Party and the State Council issued a directive which stated (Hu, 1962):

Education must

- fulfill its political role,
- serve the cause of the proletariat,
- combine with productive labor, and
- be carried out under the leadership of the party.

In this proclamation there was a shift in the emphasis of the purposes of education from serving the need for economic development to serving the need of the political ideology. This

set up the tone for the Great Leap Forward Movement in China, when the country, under the leadership of Chairman Mao Zedong, embarked on a social experimentation aimed at creating more equality among the people, through eliminating the gaps between the intellectual and non-intellectual, technocrats and peasant workers, cities and rural areas. This was a period in which the general emphasis was "red" over "expert."

Education in China: the Post-Cultural Revolution Era

(1976-present)

Since the end of the Cultural Revolution in 1976, there has been a significant effort to more closely link education and economic construction. This has been spearheaded by the Research Institute of the Ministry of Finance, which has stated that investment in education must be a priority for the future. The goals are to:

- Universalize primary education and reduce the dropout rate, now estimated to be around 60% (Hawkins, 1983).
- Dramatically expand higher education enrollments.
- Expand secondary technical education programs and graduates.
- Provide more adult education in the form of spare-time schools.

The Communist Party's Central Committee held two major meetings with representatives of the Ministry of Education in order to map priorities for the 1980's. The results are summarized below (Hawkins, 1983):

- A multi-layered education system should be developed with

an emphasis on "key" elementary, secondary and higher educational institutions. If regional inequities result, there should not be an attempt to move toward uniformity in the education system (emphasis provided by the present author).

- In higher education, the key word is "diversification." New experiments should be tried and branch schools should be developed along with correspondence and evening classes.
- Although state-supported schools will continue to be the cornerstone of China's educational system, "locally managed" schools should be encouraged. Localities at the county level should be supported in their efforts to establish and finance primary and secondary schools as conditions permit.
- There has been an overemphasis on science and engineering curricula in higher education institutions. As a result, there is a shortage of economists, managers and political and judicial cadres. Students should be encouraged to enroll in these areas.
- A key area of reform should be secondary education. Currently this area is too regulated and restricted. The priorities of the 1980's should be on expansion and flexibility and on providing secondary education.

Figure 1, 2 and 3 present the structure of China's school system over different periods. Figure 1 represents the school system in the 1950's; Figure 2 is a composite creation drawn by Hawkins (1983) to represent Mao's idea of education in the society; Figure 3 is a representation of the school system in the post-Cultural Revolution era, the present situation.

From these figures it can be seen that China has been undecided about its education priorities, and about whether to adopt a multi-tracked or single-track education system.

An inherent dilemma of education in China: "Red" vs. "expert"

An inherent dilemma in education in China is the emphasis of education to train citizens into political awareness, to train the proletariat, to equalize the opportunity to education -- the emphasis on the "Red"; or, to train the educationally more "capable", the intellectuals with technical skills sorely needed by the country possibly at the expense of opportunities for the masses -- the emphasis on the "expert." China has gone through several major evolutions since 1949, each time the evolution was spurred by the conflict between "Red" and "expert" (e.g., Taylor, 1981). In a sense this dilemma is not very different in nature from the conflict of training technocrats or the masses as in other countries. Only in China, the conflict takes on a sense of urgency and magnitude that is unrivaled in any other country. Each time, the changes in education (as well as in other sectors) in China have been fundamental, involving drastic changes in the educational structure, admission policies, and length and content of the curricula. The conflict has been so intense that it has previously resulted in violent confrontations among teachers and rival student groups during the Cultural Revolution. At the end of the Cultural Revolution, many of the schools were closed down and teachers were sent to labor reform camps or confined to their living quarters. Normal education functions stopped for a period of time in China. The experiment during the Cultural Revolution,

aimed at equalizing the differences between intellectual elites and peasants and workers, proved unsuccessful. China has now returned to an emphasis on the "expert." However, democratization of opportunity to education has remained an important emphasis of education in China.

Nonformal education in China:

It is agreed by many authorities on education in China that the most impressive aspect of China's education is its nonformal education programs. It is estimated that in China now 25% of all industrial workers are participating in some form of nonformal education. Nonformal education in China, started in the early 1950's, was aimed at providing opportunities for older adults, peasants and workers to learn to read and to promote the political ideology of the party. It has now evolved into a complicated system which accommodates the education needs for millions of Chinese students (Hawkins, 1983).

China's nonformal education system can be divided into a rural sector and an urban sector. In the urban sectors, there are spare-time schools sponsored by the factories, commercial enterprise and trade unions, whose purposes are to increase literacy, impart political education, and upgrade workers' technical skills. Specific programs involve evening classes, correspondence courses and radio-and-television classes. It was reported that 80% of the graduates of the radio-and-television "colleges" met the standard set by regular universities. (Beijing

87

Foreign Language Press, 1982).

In the rural sector, there are literacy classes, short-term training classes and information dissemination activities.

Nonformal education systems in China are administered in an adhoc nature by local organizations, such as workers' trade unions, factories and community organizations. Administration of education in China has undergone several evolutions, swinding between centralization and decentralization; the evolution of administrative structures parallels the situation of Red vs. expert. In 1944, before the People's Republic was established, public schools in China were centrally controlled but locally financed. There also existed a number of church-sponsored schools and private schools of various kinds.

After the establishment of the People's Republic of China, the government took over the administration of the education system. The private schools were closed down in the early 1950's. The education system in China became essentially centrally controlled like most other operations in China in the 1950's.

From 1958 to 1960, during the Great Leap Forward movement, there began a process of decentralizing the education administration. From 1960 to 1966, when the Great Leap Forward prove unsuccessful, there was a return to the centralized control of the administrative functions of education. From 1966 to 1976, during the Cultural Revolution, China again experimented with local control and financing of schools. In fact, during the

28

latter part of the Cultural Revolution, most of the schools were closed; there was a general chaos in education as well as in other sectors of the society. After 1976, the government adopted a more standardized centralized planning model. The Ministry of Education now makes major policy guidelines and allocates funding. There is now a new proposal for policies to be made centrally but implemented by local authorities.

There are different types of schools in China under different administrative authorities. The key schools are administered by the provincial authorities or municipal authorities.

In 1979, the Ministry of Education and China's Central Broadcasting Administrative Bureau jointly started an open university on television. These alternative programs are offered to workers, primary and secondary school teachers, clerks and other people who are already in the work force. Incentives are provided to these students by linking the study program with prospective promotions to higher-level positions.

One of the important emphases of the Chinese Communist government is to provide more access to education and other developments to the nation's ethnic minorities, who in the past had far fewer opportunities than the majority Han people. The government also reported tremendous progress in this area:

"In 1978, throughout the country, 7,600,000 pupils of minority nationalities were studying in primary schools, 3.1 times the 1951 figure; 2,400,000 pupils in ordinary secondary schools, showing an increase of 61.2 times; over 58,000 in secondary professional schools, an increase of 11.3 times and 30,000 students in higher education

09

institutions, 27 times the number in 1959."

There is also a vast increase in the number of schools available in regions where the national ethnic minorities live:

"In the Xinjiang Uygur Autonomous Region, where only eight ordinary secondary schools existed shortly after liberation in 1949, there are now over 2,000 secondary schools... (accommodating) more than 280,000 students... In Tibet, where previously there was not even a single decent primary school, over 50 secondary schools and a large number of well-equipped primary schools have been built, catering to more than 250,000 pupils."

The abovementioned statistics, though impressive in their magnitude, compared to the nation's vast population, are still short of meeting the need for educated people. There are two perspectives one can take to evaluate the progress or lack of it in China: (1) Compare the current situation with the pre-liberation era and (2) compare the current situation with other industrialized countries in the world. When one takes the first perspective, one is usually impressed by the tremendous improvement; when one takes the second perspective, one is almost equally impressed by the relative underdevelopment of the country.

In a lateral comparison, China fares much better than other developing countries in primary school enrollment (85%, national average--the percentage still varies widely from region to region.) However, only less than 5% of the nation's population is admitted to any university at all. This bespeaks a serious shortage of educational institutions in China, especially in higher levels of education.

The "experiment" in China during the Cultural Revolution

(1966-1976) fundamentally changed the admission policies, school administration and curriculum for schools of all levels. The abolition of entrance examinations to accommodate the politically savvy, worker-peasant-soldier students, produced a generation of school graduates who, according to most observations, are inadequately equipped in basic skills. The newly installed (since 1977) entrance examinations and "key" (elite) schools in China's education system have again returned education in China to the pre-Cultural Revolution era's merit-oriented selection process. The benefits or losses of the new reform are not yet clear, but all signs indicate that this new reform has not really widened access to higher education. The absolute number of students in schools has increased in China since 1977; however, most of the increase perhaps reflects a return to the "normal" functioning of the schools, following the chaotic confusion during the Cultural Revolution, when most of the schools were closed and teachers sent to labor reform "schools".

Lessons learned in China:

The following factors appear to contribute to the widening of access to schools in China during the 1950's:

- A coherent national policy and planning in education,
- A strong commitment to nation-building and to the belief that education is essential to nation-building,
- Strong government propaganda emphasizing the in a democratic idea of education, replacing a centuries-old prejudice against education for women and minority people,
- Committed and dedicated education workers, who saw their

91

own aspirations coincide with the objectives of nation-building, and

- New, innovative programs which brought education to remote regions and to indigenous populations who were not served by traditional formal programs.

The following factors seem to provide obstacles in providing access to schools:

- Periodic, radical swings in central policies, together with the changing of political leaders,
- Lack of an impersonal political machinery and mechanism to make the system immune to charismatic leaders,
- Remnants of traditional cultural institutions, such as prejudice against women, etc.,
- Lack of infrastructures, particularly in communication and transportation,
- Shortage of money and resources to build schools and to provide instructional materials. Most of the primary and secondary schools are financed by local communities, a method which perpetuates the unevenness between the rich and the poor regions, and
- The return to achievement-oriented examinations for the selection of students, again perpetuating the differences between children from intellectual families and children from worker-peasant families. Recent observations of college students admitted after 1977 already provide evidence stemming from this difference.

92

TABLE 1. Enrollments and Literacy 1944-1979.

School year	Educational level (figures in thousands)*			Percent general literacy
	Primary	Secondary	Higher	
1944	17,800	902	69	20
1958	64,279	6281	441	35
1965	80,000	12,500	---	50
1979	146,630	60,249	1020	65

Percent of school-age population enrolled - primary and secondary: 1949 = 18%; 1979 = 69%.

*All figures are estimates only. (Hawkins, 1983)

1944 - China Handbook, 1937-1945 (New York: The MacMillan Co., 1947), pp. 323-331.

1944 - Ten Great Years (Peking: Foreign Languages Press, 1960), p. 192.

1965 - Jan S. Frybyla, The Political Economy of Communist China (Scranton: International Textbook Co., 1970), p. 449.

1979 - Kong, Shiu, "Three Decades of Chinese Education, Developmental Needs, Priorities and Strategies for the 1980's." A paper presented at the Fourth International Congress of Comparative Education Societies, Tokyo, July 1980.

Enrollment percentages from:

1949 - Ten Great Years (Peking: Foreign Languages Press, 1950), p. 8.

1979 - Kong, Shiu, *ibid.*

Statistics in this table and in the text should be considered estimates only, based on Chinese sources and extrapolations.

Source: Table reproduced from Hawkins (1983), p. 147.

TABLE 2. Number of Students in Schools of All Levels and Types
(in ten thousand persons)

	1949	1957	1965	1980	% increase of 1980 over 1949
Higher educational institutions	11.7	44.1	67.4	114.4	977.7
Secondary schools	126.8	708.1	1,431.8	5,677.8	4,478.4
Secondary specialized schools	22.9	77.8	54.7	124.3	543.4
Secondary technical schools	7.7	48.2	39.2	76.1	987.4
Secondary teacher training schools	15.2	29.6	15.5	48.2	317.8
Ordinary middle schools	103.9	628.1	933.8	5,508.1	5,301.3
Senior middle schools	20.7	90.4	130.8	969.8	4,680.4
Junior middle schools	83.2	537.7	803	4,538.3	5,456
Workers and peasants' middle schools		2.2			
Secondary agricultural and vocational schools			443.3	45.4	
Primary schools	2,439.1	6,428.3	11,620.9	14,827	599.7
Schools for the blind and deaf-mutes		0.75	2.29	3.31	
Kindergartens		108.8	171.3	1,150.8	

Source: Beijing Foreign Languages Press, 1982.

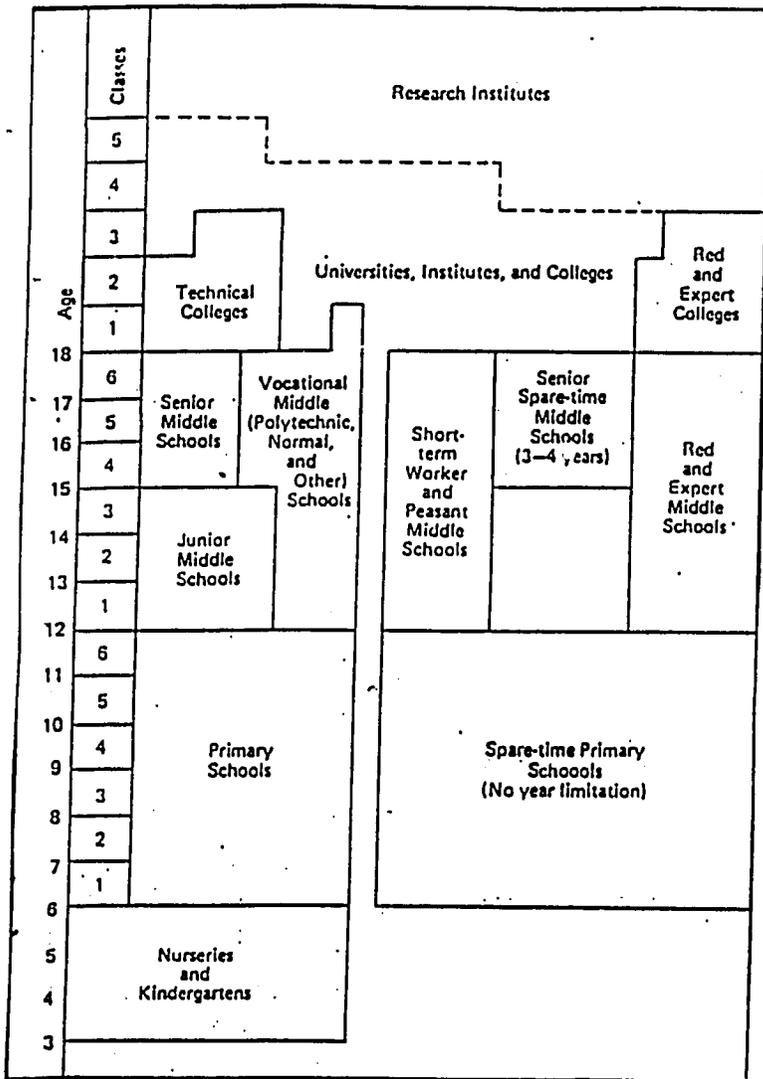
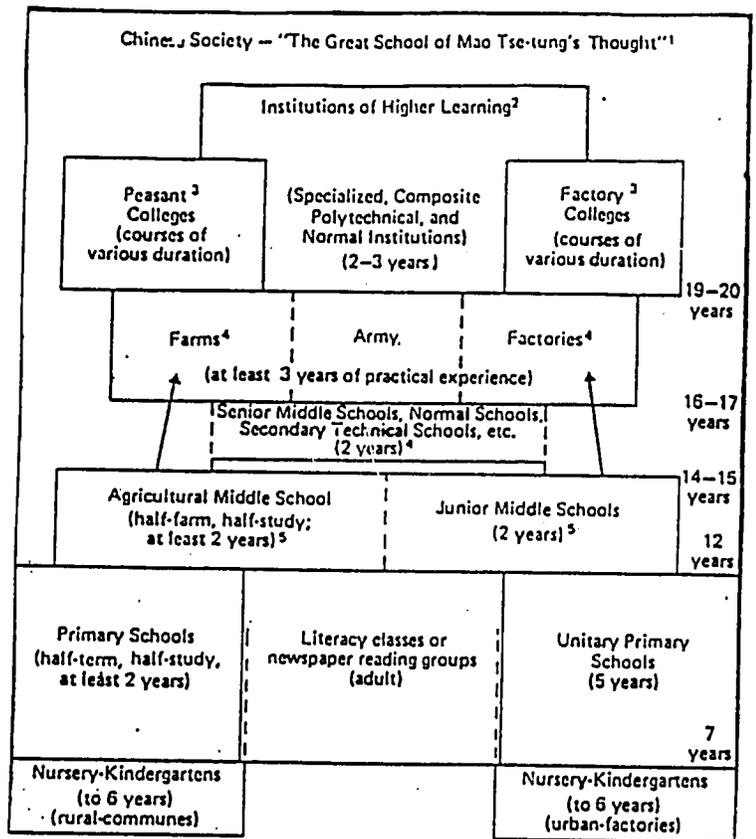


Fig. 1



1. The changing nature of the Chinese educational structure renders a rigidly specified "school ladder" inappropriate. Accordingly, this is a composite diagram and provides a tentative scheme only.
2. Supported and administered by the state.
3. Supported and administered by communes or factories.
4. Schools run by factories, farms, and military or political organs (cadre schools for 1, 2, or 3 years) are not represented.
5. Short-term schools and specialized courses are not represented.

Fig. 2

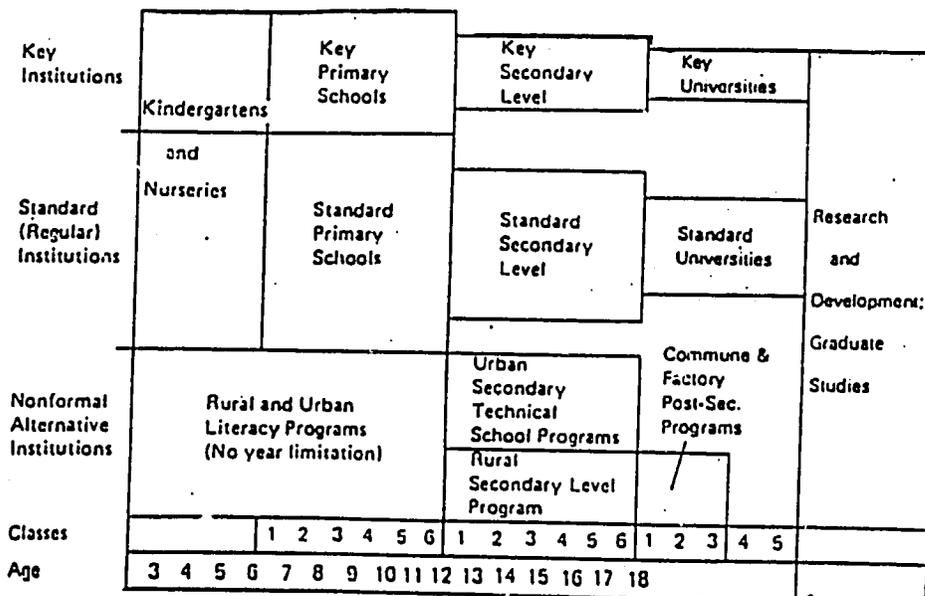


Fig. 3

Source: Hawkins, 1983

95

Development of modern education in Japan started with the Meiji Restoration (1867) (Ministry of Foreign Affairs, Japan, 1896) and was an integral part of the Restoration. The Meiji Restoration was aimed at creating a strong, modern Japan. It was to a large extent a movement goaded by the strong economic and military presence of Western countries in late 19th-century Japan. The movement fundamentally changed Japan's political structure, returned power to the emperor, Meiji, to achieve a unified Japan, and ended the hegemonies of the warlords of the Tokugawa Era. The leaders behind the movement aimed at building a militarily and economically strong country. Education was considered an important vehicle through which to achieve this goal. A modern education system was thus established as an essential dimension of Japan's modernization movement.

The Meiji government's Order on Education consisted of the following points (Ministry of Education, Japan, 1980):

- Detailed analysis of the education systems in the West.
- Creation of a new education system with three tiers of schools: primary, middle, and higher education institutions operating under the central Ministry of Education.
- Girls would be given the same opportunity to go to school as that afforded to boys.
- Children of all social classes should attend the same institutions.
- Curricula should reflect ideas from the West combined with continued dedication to Japanese moral precepts, pride in the country's heritage and respect for the emperor.

Careful reading of this order revealed several interesting

features which characterize education in Japan: equal opportunity of education for both sexes and for children of all social classes; importation of Western ideas for the service of Japan, and most of all, a strong emphasis on nationalism. Education in Japan did not primarily aim to develop the individual's potential, unless it helped to achieve the ultimate objective to serve the country.

In the implementation of the Order, central and local governments both bore the cost of education. (In other countries, to equalize the quality and quantity for all regions, the central government usually bears most of the education costs.)

The Order also stressed the necessity and usefulness of education, maintaining that regular school attendance is an obligation and that lack of schooling was considered a personal failure. Parents were held responsible for their children's attendance in school.

In the decades following the announcement of the Order and the establishment of the new school system, the pace of education expansion was maintained firmly in an atmosphere of social stability.

School enrollment in Japan, in tandem with the gross national industrial product, increased rapidly. As a result, the percentage of primary school-age children in school rose from 28% in 1873 to over 50% in 1883 to over 96% in 1906 till the present time (Ministry of Education, Japan, 1980).

The major advances in enrollment ratios between 1900 and 1980 are shown in Table 1. The table presents a picture of extraordinary achievement both in the ratios and in the pace of education expansion.

The establishment of private educational institutions at all levels of the school system began with the introduction of modern schooling in 1872.

This extraordinary educational development in Japan came in the context of rapid economic and military development. Since the nineteenth century, Japan had begun to initiate military skirmishes with her neighboring countries; these hostilities culminated in the large scale invasion of China as well as other Asian countries. During World War II, Japan occupied much of the territories of East and Southeast Asia while engaging in the costly struggles with China on the Asian mainland and the United States in the Pacific. The end of the war brought American occupation to Japan; education began a new era.

During the American occupation in the 1950's, largely due to American pressure, curricula in Japan were modified to reduce the emphasis on nationalism. Replacing the strong emphasis on nationalism was renewed emphasis of the individual.

In postwar Japan, the economic progress has been one of the most remarkable of development cases in the world. During these years the education system has been both a strong contributor to progress and a prime recipient of the fruits of economic advances. Over the period 1955-1978, per capita income rose 18

times to nearly \$7000 'U.S.' At the same time the nation's gross industrial output increased 25 times. Between 1955 and 1978, the total funding for education grew 32-fold.

Japan's educational enterprise has also served as both a cause and an effect of events in other aspects of national life.

The continuing expansion of schooling opportunities to all segments of society over the past century has contributed to a high degree of social mobility and a resultant leveling of the social-class system. Children born at a particular social stratum can always use education as a vehicle to climb the social ladder. Since access to education is provided to everyone, it is the performance of an individual in the system that determines success or failure, a condition far different from that found in the strictly stratified society in mid-19th-century Japan (Kida, et al., 1983).

Table 1 presents enrollment statistics of Japanese schools.

Observation (Cummings, 1980) of modern schools in Japan indicate the following characteristics:

1. Divisive interests are involved in education:
The central government and business sector look upon education as a means for training a skilled labor force and highly qualified manpower, for identifying prospective elites, and for teaching a common culture.
2. Japanese schools are inexpensive:
From all indications, schools in Japan are well managed. Lower percentages of expenditures are allocated to education. Proportionate to the enrollment, there are fewer teachers than there are in the United States and in other developed countries.

3. Japanese schools are equal:

The postwar public concern with education has placed pressure on the central government to reduce inequities in education expenditure per student. Today, at the compulsory level (nine years), there is virtually no variation between regions in school facilities and teacher qualifications. Remarkable equality in distribution has been established in terms of basic essentials in education. Similarly, teachers in Japan tend to have universally equivalent qualifications. There are even laws which subsidize children from low-income families to pay for school lunches, excursions and other regular activities. The law also provides transportation subsidies to enable students living in small islands to ride boats to mainland schools, and also authorizes salary supplements to induce skilled teachers to work on the small islands.

4. Japanese schools are demanding:

A nationally standardized curriculum is implemented in every school. The curriculum is very demanding. The school days are long and more numerous; 240 days per year as opposed to 180 days per year in the United States.

5. The school is an education unit.

6. Teachers are secure in Japan.

Teaching in Japan is a respected profession. Teachers are highly regarded by society and receive a reasonable salary. As public servants, teachers in Japan automatically receive tenure upon initial employment, provided there are no special circumstances.

Cummings (1980) also observed the following characteristics of the education process in Japan:

With the increasing importance of the school system, a child's progress through life in Japan is now marked by schooling events. The opening ceremony in a school is always an important event involving both parents and students. School premises assume an important function in a community, where important town

meetings are held. Parents participate extensively in the school process. There is a close relationship between schools and parents.

In Japan, student absenteeism is rare. On a given day the absentee rate is usually less than 1%. Parents believe children should go to school and take it as their own responsibility to see that their children go to school (Cummings, 1980; Yao et al., 1984).

In the classroom, discipline is maintained in an orderly manner. Disputes between students are handled with great care, involving the students, parents and school officials.

Japanese schools are designed for conventional teaching; according to Cummings' observations, this seems to be what is going on in the classroom. Teachers are required to teach from a nationally standardized curriculum (Cummings, 1980). It was also observed that teachers in Japan spent more time engaging students in the curriculum (Stevenson et al., forthcoming).

Education in Japan and career opportunities are closely related to each other. Gaining entrance to a better high school and a better university will guarantee a person a better job in Japan. This intimate linkage between employment and education provides a very strong incentive for individuals to go to school and do well.

In addition to quantitative expansion, Japanese education also excels in teaching basic skills in reading and mathematics. A series of studies is now being carried out at the University of

101

Michigan/Ann Arbor, under the direction of Harold Stevenson, which is analyzing teaching materials, classroom interaction, teacher and parent attitude toward school and scholastic achievement, and cognitive development of school children in Japan, Taiwan and Minnesota (Stevenson, 1985 and forthcoming). It will be interesting to see the results of these studies to identify the variables that make schools and education in Japan so effective.

There is no single factor that contributes to the success of education in Japan; there are, however, a constellation of factors that have contributed to the success of education in Japan.

Put into the framework of our categorization of exogenous and endogenous variables, the success of Japan can be better understood:

EXOGENOUS VARIABLES

Population

Japan's population is relatively small compared to that in China. The country is small and therefore, within the five major islands, the density of population is very high. Large cities like Tokyo are known for their crowdedness. Japan's population is readily accessible. There is a well developed transportation system in Japan. There are no outlying regions to speak of. This efficacy in transportation and communication facilitates educational expansion.

Japan's population is also very homogeneous. With the exception of some immigrants from other Asian countries and the native Inus, people in Japan share essentially the same culture and language. There were no barriers in education caused by cultural or language differences.

Between-sector coordination

Education in Japan, since the Meiji Restoration, was seen as an integral part of a national building movement. Different sectors in Japan closely coordinated to promote the economic welfare and the smooth and efficient operation of the country (Vogel, 1979).

Education planning and economic planning are closely coordinated. Education took precedence during the Meiji Restoration, because the government saw education as a tool to train the manpower, and instigated an awareness in its people for economic betterment, modernization and, during the Meiji era, a strong nationalism.

The rapid economic development in Japan during the Meiji era, as well as after World War II, improved the standard of living. Japan was also changing from an agrarian society to a post-industrial society with a different set of manpower needs. All these provided incentives for education and the affordability of education on the part of average citizens.

Perceived_relevance_of_school

The close coordination between education and economic development provided a close linkage between education and employment and between education and upward mobility. Entrance to higher level education is determined strictly on the basis of competitive examinations that are content-oriented. Family background and social status do not determine a person's access to the more reputable schools unless they can be translated into better academic preparation. Participation in education is perceived in Japan as a basic and essential way of moving into desired social strata and to fulfill one's aspirations. Education is perceived as an integral part of a person's development.

Traditional_culture_values_education

Like other East Asian societies, the Japanese place a high value on education for its own sake. A "learned person," ("Sensei"), is highly respected in the society. Failure in the education system is considered a loss of personal honor. Before the Meiji Restoration, education was reserved for the elite class; once it was offered to average citizens, people valued the opportunity to go to school highly.

Community_and_parental_participation

Schools in Japan are an essential part of the community.

Teachers and administrators are respected members of the community. Because of the perceived relevance and traditional values, parents see it as their responsibility to send their children to school, to help their children in school work and to cooperate with the school. The same close cooperation and parental involvement are not always observed in the United States (Yao, et al., 1984).

ENDOGENOUS VARIABLES

The education system in Japan is apparently very efficient. The proportion of education expenditures is smaller in Japan than in other developed countries. There are endogenous variables inherent in the education system in Japan that make the system efficient and effective.

Government commitment and education financing

Education has been accorded a high priority since the Meiji Restoration. The government was committed to developing education in the country. The central government bore the major burden of financing, and laws were enacted to help the poorer regions with education financing. Today in Japan, there are no significant differences between the poorer and the richer districts in terms of expenditure for education. Facilities and teacher qualifications are also very similar from one region to another (Cummings, 1979), thanks to the commitment of the Japanese government to its support of education.

Involvement of private schools

Private schools are part of the Japanese education system. These schools observe the same standards and use the same curricula as public schools. By involving the private schools, the government increases the capacity of the education system.

Efficient schools

Japanese schools are run efficiently and in an orderly manner. There are fewer school personnel relative to school enrollment.

Efficient classroom management

Within education expenditures, teacher salaries occupy a smaller percentage compared to that in the United States and other developed countries. There are fewer teachers relative to the number of students. Teachers in Japan typically teach large classes (around 40 students per class). Order is established early in the school year. Japanese teachers are able to engage students for longer periods of time on academic tasks. This makes education production in the classroom very efficient and reduces the unit cost of education.

TABLE 1. Percentage of School-age Children in
Primary Schools 1886-1946.

Year	Boys (%)	Girls (%)	Total (%)
1886	61.99	29.01	48.33
1896	79.00	47.53	64.22
1906	98.16	94.84	96.56
1916	99.01	98.18	98.61
1926	99.47	99.39	99.44
1936	99.59	99.59	99.59
1946	99.63	99.72	99.67

Source: Japan's Modern Educational System, 1980: 464-465.

Soviet Educational Policies and Practices

One of the most prominent features of Soviet education is the extent of rigid control exercised by the central authorities and the degree of uniformity enforced in policy and practice throughout the entire country. In such a vast and varied country, there are local differences, and there are instances of things occurring at the school level without the knowledge or approval of the higher authorities. Yet in the formulation of basic policy and in the details of school practices, the authorities keep a firm grip on what happens in the Soviet schools and colleges.

Education must serve the needs of the Soviet society as interpreted by the Communist Party. The single-mindedness of Soviet policy aims makes it possible to generalize about Soviet education more easily and accurately than about any other country approaching the size and complexity of the U.S.S.R. (Grant, 1979).

In appraising the educational system of any country, certain aspects must be considered. The first involves the "professed aims" of education. In the Soviet Union, this means what the Communist leaders, echoed by educators, proclaim to be the principles and purposes of Soviet education. These are the ideals, translating into policy.

The second aspect is that of "actual practice," which includes the school system itself and how it operates. The third aspect concerns the "actual results," or the product of the

system as it functions in practice (DeWitt, 1961).

The basic aims of Soviet educational policy are unique. Communist education sets for itself a much broader task than mere instruction. It not only aims at providing the youth of the country with those kinds of knowledge and skills that will be most useful to the state, but also seeks to remold the character of the individual and inculcate a uniform pattern of prescribed beliefs, attitudes, sentiments, and values consonant with Communist ideology (DeWitt, 1961). Policy responds to pragmatic considerations, i.e., training personnel for an economy undergoing rapid industrialization.

Historical background on policy, practice and production (enrollment)

From 1850 to 1917, public education spread throughout the Russian provinces through the "zemstvo" which was the local administrative body in Tsarist Russian. The zemstvos paid particular attention to the construction of new schools. They also opened their own teachers' colleges and organized special courses for the improvement of teaching methods. Extension courses were established for adults and libraries were built (Reynolds, 1981).

The expansion of schooling in the Russian countryside after 1864, bringing basic education within the reach of the majority of peasants in the European heartland, was initiated by the purposeful self-activity of the anonymous peasant millions. The

104

contribution of the "elite" (through local zemstvos or officialdom) began on a large scale only after the great famine of 1891-92, when signs of social stress, dislocation and disorder began to mount. Before that date, it was the peasants who supplied the energy, money and effort to launch and maintain the school expansion. After that date, peasant pressure for more schools continued to affect the pace of school construction (Eklof, 1984).

There were three stages of Russian educational history after 1864. In the first stage, the peasant-sponsored "volnye" schools spread rapidly. During the second, the "zemstvo" organized the schools and then began slowly to assume the costs. In the third, beginning after 1900 but gaining momentum after 1908, the Ministry of Education gradually took over the "zemstvo" schools, assuming the cost of school construction and maintenance and setting the rules on how schools should be built and run, and who should teach.

There was an increase in all primary schools, rural and urban, from 8,000 in 1865 to 25,000 in 1878, to 86,000 in 1896 and to 100,749 in 1911. The increase in the number of pupils was, for the respective years, from 450,000 to 1.1 million, 3.8 million to 6.6 million.

With the increase came a crush of applicants but not enough schools. The 1911 School Census showed that in 1910 some 999,852 were formally denied admission to the elementary schools. This was out of an estimated school-age population of 12,000,000 and

an enrolled (ages 8-11) population of 6,600,000.

As late as the end of the century, non-institutional sources still accounted for a remarkably high proportion of the total number of literates in the countryside. Thirty-six percent of the literate factory population learned to read and write from "teachers" hired individually by parents or collectively by villages. Private education, although outlawed, was maintained in the countryside.

The percentage of the population above the age of ten who could read and write increased from 24 percent in 1897 to 45 percent in 1914. The degree of literacy was higher among men than women and higher in the urban areas (Reynolds, 1981).

Education under War Communism (1918-21)

One of the first duties of the Communist social revolution was the institution of secular universal public education. From 1918 to 1923, drastic measures were taken to uproot the Tsarist educational system and to lay the foundation for Soviet ideology. The government began the task of building a universal elementary school system to erase illiteracy. Starting at the elementary level, the government built a single ladder system, integrating general and vocational education. This represented the concept of equality and unity of all the people under the working peoples' "leadership" (Reynolds, 1981).

Immediately after the October Revolution, the new Soviet government began to introduce a series of fundamental educational

reforms. The new policies were promulgated to solve the social and educational problems created by the revolution and to justify the new practices brought about by the new objectives. These objectives had to fall within the framework of the unifying revolutionary theory.

The following outline guided the educational policy of Russia in 1917:

The Constitution of the Russian Democratic Republic should guarantee:

- the right of the population to receive education in its own tongue,
- the separation of church from state,
- free, compulsory general and polytechnical education,
- the supplying of all students with food, clothing, and school supplies, and
- transfer of all matters pertaining to education into the hands of the democratic organs of local governments (Shore, 1947).

In Russia, on the eve of World War I, primary and secondary schools had an enrollment of 7.9 million pupils (DeWitt, 1961).

On January 23, 1918, a decree was issued that separated the church from the state and the school from the church. The school became a secular institution. At the same time the national minorities were given the right to instruction in their native language. Women obtained equal rights, including the right to education at all levels.

Since the schools were to belong to the people, they were to be fully accessible to all children of both sexes, and instruction was to be free. The whole system from kindergarten to the university was declared to be one school. The basic link was to be a universal, free, compulsory, secular and undifferentiated school with a general nine-year course of instruction. The first level would consist of five years and the second level would consist of four years.

Any person who had reached the age of sixteen was entitled to be admitted into any institution of higher learning without submitting any certification of graduation from a secondary or any other school. The only requirements were an identity card and a birth certificate. All tuition fees were abolished.

The fundamental aims and principles of the Soviet educational system were laid down in 1919. These provided for the establishment of pre-school institutions such as nurseries, kindergartens and children's homes, and free compulsory schools for all children of both sexes between eight and seventeen years of age. University and other institutions of higher education were to be open to all. Education out of school was to be expanded to include libraries, schools for adults, peoples' palaces and universities, cinemas and theatres. The state was to supply all pupils with food, clothing, boots, and free school aids.

For all the problems encountered by a poor country that had been recently devastated by war, this program greatly exceeded

the real possibilities. The opening of universities to all without any special qualifications made it necessary to create special facilities for preparatory studies. For instance, the Workers' Facilities which were offered at the higher schools offered preparatory courses. Predictably, the social composition of the student body was radically altered. In 1925, 38.5 percent of all students enrolled in the universities had come from the Workers' Facilities.

Another decree in 1919 made it compulsory for the entire population of the republic between the ages of eight and fifty to learn to read and write in Russian or their native language. It provided for a two-hour reduction in the working day, without loss in wages, for attending schools for reading and writing. An intensive publicity campaign was undertaken to persuade the illiterate that it was their basic civic duty to actively help in the speedy achievement of universal literacy. By July 1921, 4.8 million people, most of them in the Red Army, had been taught to read and write. It was not until the late 1930's that the point of almost complete literacy among adults was reached. In 1939, 95 percent of men and 83 percent of women were literate (Tomiak, 1972).

By 1920, total enrollment in Soviet primary and secondary schools reached almost 10 million.

Education and the New Economic Policy (1921-27)

In 1923, a plan was prepared for introducing universal

primary education on a compulsory basis for the whole country. It became evident that ideology alone could not accomplish this feat. Exhausted by the war, the Revolution and foreign intervention, combined with the lack of capital, no industrial production and a decline in agricultural output, the country was facing disaster. Early in 1923, fees were imposed at all levels of education, with some exceptions. One of the fundamental principles of Communist education -the right to free education- ceased to apply.

The dreams of progress turned into a nightmare of regression. In the first months of 1921, the number of primary schools was estimated at between 76,000 and 82,000 with 6 to 6.8 million pupils. By April 1922, the number of schools had dropped to 68,000; by December 1922, to 55,000; by October 1923, to 49,000 with 3.7 million pupils.

In 1926, there was some improvement, and industrial production was roughly back to prewar (1913) levels. This continued in 1927 and 1928.

The middle 1920's produced many interesting innovations and ideas in educational thought. One was that productive work and socially useful labor were the bases of all education.

Education under the First Three Five-Year Plans (1926-42)

During this time the U.S.S.R. was transformed from an agricultural economy to a rapidly developing industrialized economy. Education was one of the major factors for industrial

growth.

The First Five-Year Plan pushed on with compulsory education of all from the age of eight for at least a four-year course of primary schooling. It also introduced universal compulsory schooling for boys and girls up to age fourteen in industrial towns.

The need was for more and better trained scientists and teachers and for the training of practical workers. Selection methods for admission into higher education and research establishments were changed. Greater importance was placed on academic contests and scientific competition. In the academic year 1929-30, the country's higher education institutions and research establishments had more than 3,000 postgraduate students, nearly two and a half times the number in 1927-28. The foundation for an intensive program of industrial and technological improvement was laid.

Major policy changes came in the next year with mandates to: Increase the efficiency of instruction of pupils for studying in higher-education institutions and technical schools; strengthen school discipline; revise all courses of study in primary and secondary schools (by 1932, almost all children aged eight to eleven were receiving full-time education); and to reinstate the school textbook as the principal teaching aid in place of the project method and other "progressive" experiments.

During the Second Five-Year Plan, a uniform system of grading progress was introduced. A scale of one to five was

adopted. The grade of five/excellent exempted a candidate from an entrance examination at the higher education level. Also adopted was a unified system of certification of the scientific and teaching personnel at institutions of higher learning.

By this time all progressive ideas and methods were looked upon with disfavor by the political authorities, for they were seen as being anti-Marxist and unscientific. Psychological tests and intelligence tests were abandoned.

The Third Five-Year Plan (1938-42) outlined a plan for the introduction of universal ten-year education in towns and seven-year education in rural districts. A detailed system was introduced for registering children subject to compulsory education and for a strict check in regular attendance. However, in 1940, tuition fees were imposed in higher education and in grades eight to ten in secondary schools (Tomiak, 1972). Even so, there was a steady enrollment increase to 34.6 million in primary and secondary schools at the beginning of World War II (DeWitt, 1961).

With the danger of a German invasion, extensive programs were developed to prepare large numbers of skilled workers: Vocational schools with a two-year course of instruction; railway schools to train railway transport workers; and six-month training courses in factories (FZO) to prepare skilled workers for the basic industries (Tomiak, 1972).

117

Education During and After World War II (1941-50)

Fourth Five-Year Plan (1941-50)

The German invasion dealt a staggering blow to the Soviet education system. A total of 82,000 schools attended by 15 million children were destroyed in areas under temporary Nazi occupation, as were 334 institutions of higher learning. Countless libraries were burned to the ground. An untold number of teachers were killed in action. Hundred of thousands of teen-aged boys and girls were left to man the factories in wartime (Kuzin, 1972).

In order to familiarize adolescents with the techniques of warfare and to prepare them for taking part, two laws were passed concerning military and physical training of pupils. In the area of industrial training, special vocational schools were organized for children aged twelve and thirteen in order to give them a four-year course of general education and vocational training combined. Over two million young workers were trained in the vocational schools and FZO courses during the war years (Tomiak, 1972).

In the middle of the war, the compulsory education of children from age seven (instead of eight) was introduced. A new type of evening school for general education was opened for working youths who had interrupted their studies because of the war. The network of vocational-technical schools was considerably expanded. (Kuzin, 1972).

The Fourth Five-Year Plan emphasized reconstruction and the development of the national economy. Proposed were the restoration and expansion of the network of primary and secondary schools. Provisions for compulsory education for all children from seven years of age were introduced. Plans were made for the improvement of the quality of teaching and education in the schools.

By 1950, there were 200,000 schools of general education with 33.3 million pupils, of whom 7.5 million attended 126,000 small primary schools. The number of seven-year schools rose from 45,700 in the school year 1940-41 to 59,600 in 1950-51. The number of ten-year schools lagged behind. There were only 15,000 of them with 10.2 million pupils in 1950-51, while there had been 18,800 with 12.2 million in 1940-41.

In the other branches of the educational system, a quicker recovery was made. The secondary specialized education establishments reached the prewar level in 1947. The institutions of higher education accomplished the same in 1948. Co-education was discontinued in the complete secondary schools in the late 1940's and separate schools for boys and girls were introduced in all large towns (Tomiak, 1972).

Then the Soviet government turned its attention to the problem of political education. A system for training and retraining leading party members and Soviet workers was adopted. This effort to train specialists was not very successful. According to the statistics of the Ministry of Higher Education

for 1949-50, 238 of the 614 heads of departments of Marxism-Leninism and 2,201 of the 2,756 lecturers in the subject in higher education establishments had no degree or title.

Education During the Fifth and Sixth Five-Year Plans (1951-60)

The Fifth Five-Year Plan proposed an increase in teacher training and a doubling of the number of graduates in higher education entering the important branches of industry. Also, a 30-35 percent increase in the number of students graduating from higher and secondary specialized education establishments was proposed. Planned were the improvement and expansion in the teaching of science. Also introduced was a plan for compulsory ten-year schools. In 1952, polytechnic training in the schools was reintroduced.

Tuition fees for pupils in the upper grades of the secondary schools were abolished. Evening and correspondence courses in secondary specialized and higher education institutions were planned. These were intended to increase the number of students who could attend without giving up full-time employment.

Boarding schools were introduced on a large scale. The idea was vigorously pursued. With the high costs involved, the boarding schools began to receive less and less attention in the years following (Tomiak, 1972).

The year 1950 marked a turning point in Soviet school enrollment. Elementary grade enrollment was cut almost in half, dropping from 23.7 million in 1948 to 12.1 million in 1953. This

decline can be primarily attributed to a sharply reduced birth rate during World War II (DeWitt, 1951).

The Sixth Five-Year Plan (1956-60) included the plans for progressive expansion for all the different branches of national life, economic as well as cultural. In 1958, after the Khrushchev Memorandum, the following educational policies were enacted:

1. Universal and compulsory eight-year education shall be introduced;
2. Complete secondary education beginning from the ages of fifteen or sixteen shall be carried out on the basis of combining study with productive work;
3. Complete secondary education shall be given in three basic types of schools:
 - a. Schools for young workers and rural youths, offering part-time education in out-of-work hours,
 - b. Secondary general-education labor polytechnic schools with production training, offering three-year full-time education after eight years of compulsory general education, and
 - c. Technical schools and other secondary specialized education establishments, offering both general secondary and specialized secondary education on a full-time or part-time basis; and
4. Production training and socially useful work may be carried out at instructional and production workshops in

121

nearby industrial enterprises, in pupils' teams on collective and state farms, at instructional experimental farms and at instructional production workshops in schools or groups of schools (Tomiak, 1972).

New curricular plans were included. Humanist subjects came to occupy 39.5 percent of the total teaching time, sciences 32.6 percent, labor training and socially useful work 15.3 percent, drawing, music and singing 6.2 percent and physical education 6.5 percent.

The lowest percentage of total population was reached in 1956 with 28 million students enrolled. Total enrollment increased gradually in the late 1950's, reaching about 31 million in 1959 and over 33 million in 1960 (about the same as 1950) (DeWitt, 1961).

Education During the Seventh and Eighth Five-Year Plans (1961-70)

The Seventh Five-Year Plan (1961-65) stated that in the field of education the following were to be the main tasks facing the country in the period of transition to Communism:

1. The solving of the "cardinal social problems" by the elimination of substantial distinctions between mental and physical labor;
2. The introduction of universal compulsory secondary education for all;
3. The public upbringing of children of preschool age and

school age in preschool institutions and boarding schools of different types;

4. The creation of conditions for a high standard of instruction and education for the rising generation; and
5. The expansion of higher and secondary specialized education (Tomiak, 1972).

The attempt to bridge the gap between physical and mental work by combining study with production training ran into serious problems. The secondary general-education polytechnic schools could not cope in an effective way with industrial practice and still give students a wide range of choice of training. This was caused by the lack of necessary resources, equipment and personnel. Polytechnical education, practical training and courses in theory and practice production were not abandoned, although the total time devoted to them was reduced. The last graduation from the eleventh grade of secondary school took place in 1966 (Tomiak, 1972).

During the Eighth Five-Year Plan (1966-70), the Federal Ministry of Education was set up and the Academy of Pedagogical Sciences was reorganized. A Scientific Methodological Council was set up to improve teaching methods. Its members were prominent scientists, psychologists and teaching methods experts.

In the school year 1967-68, new syllabuses for labor training were introduced for all levels. New syllabuses were introduced in the first, second and fourth grades, as well as for a number of subjects in the higher grades. In 1968 plans were

- 23 -

announced for an increase in the production of audio-visual aids for schools. In the same year, compulsory pre-conscription military training in all schools for boys aged fifteen and older was announced. In 1969, the first cycle of education in the eight-year school was reduced from four to three years.

By 1970 about 80 percent of pupils finishing eight-year schools went on to receive a complete secondary education. In the course of five years (1966-70), seven million specialists with higher or secondary specialized education were prepared. The 1970 census of population showed that 75 percent of the working population in urban areas and 50 percent in the rural areas had attained secondary or higher educations.

Education and the Ninth Five-Year Plan (1971-1975)

The directives for the Ninth Five-Year Plan promised universal secondary education by 1975. The training of about nine million specialists, including experts in the new fields of science and technology, was envisioned. Plans were made to raise the salaries of schoolteachers throughout the country by 20 percent, to increase scholarship grants in higher education institutions by 25 percent and to increase grants for students in secondary specialized educational establishments by an average of 50 percent.

In September, 1970, there were 15.1 million Soviet pupils of primary age who were following the three-year course begun at seven, but only 2.3 million of them were in primary schools.

Five years later, with a total of 12.7 million primary pupils reflecting the decline in the birth rate during the 1960's, only 1 million were in primary schools. By 1980, the total had risen to 13 million, yet the number of children at the primary schools decreased to 6 million. The rest were in schools designated "incomplete secondary" (eight years) or secondary (ten-year or eleven-year in certain republics) with a few at special schools for the handicapped (Dunstan, 1983).

Education under the Tenth Five-Year Plan (1976-1980)

The Tenth Five-Year Plan did not announce radical reorganization. The development plans called for more, done better. Universal secondary education was called for. It also demanded that improvements be made in the entire general education school system, especially the secondary schools. The school curriculum was focused upon, stressing the need for radical revision of school curricula and textbooks. Social education was expanded. Pupil labor education was improved. Moral education of pupils was introduced in new (eight-grade) courses. A major effort was made to bring the levels of teacher-training closer together to end the disparity between urban and rural training.

The basic goal for national education was met, which was the transition to universal ten-year secondary education for the Soviet seven-to-seventeen-year-old population. Virtually all of the 15-year-old graduates of compulsory, eight-year, incomplete

secondary education completed their schooling in one of several types of upper secondary schools. Between 50 and 60 percent went from the eighth grade to the final ninth and tenth grades of general education, where most completed their education. Between one-third and one-half of the fifteen-year-olds finished the eighth grade and enrolled in schools of vocational and technical education. Even when the population growth rate dropped, school graduates were the principal source of industrial labor reserves. Training manpower for the rural sector of the economy was the number one priority.

During the Tenth Five-Year Plan, approximately 24 million 15-year-olds had completed eight-year schools, while over 20 million 17-year-olds received a complete (ten-year) secondary education in general education (Prokofiev, 1982).

Education During the Eleventh Five-Year Plan (1981-85)

The Soviet economy at the beginning of the 1980's has had tremendous problems. Output, especially in agriculture, was very low. The educational system was expected to do its share in meshing progress in education with the needs of society overall.

The principal tasks were to improve the quality of teaching labor and moral education in school; to eliminate formalism in the evaluation of work by teachers and pupils, to make education truly relevant, and to improve the preparation of school pupils for socially useful work (Prokofiev, 1982).

The close linkage of the formal education system to

occupational training intensified. Vocational guidance and labor training within the ten-year general education school channeled young people to career choices before they graduated. Polytechnical content was stressed in academic courses to teach the basic technologies of industrial and agricultural production.

Curricula and textbooks were improved. "Neo-polytechnical" bias was observed in the curricula revisions. Deficiencies in the organization of physical education were examined.

The most interesting educational task to appear in the "Guidelines" was the plan to lower the age of starting school. It had been debated for many years and had been the subject of experimentation and innovation, but this was the first time that it had received such prominence in a major national policy document. The goal was to "create the preconditions for the gradual transition to teaching children from the age of six in preparatory classes at general education schools (Dunstan, 1983)."

Actual Results of Soviet Policy

Educational opportunities for all citizens is a professed aim of educational policy in the Soviet Union. Party leaders, intellectuals, factory workers, and farm workers all believe in education. Yet the ordinary Soviet citizen knows that equality of opportunity does not always guarantee equality of results.

Educational opportunity in the Soviet Union is influenced by three major factors: social class, geography, and national or

ethnic origin.

The class factor affecting a child's educational chances is a delicate subject because the Soviet Union is attempting classlessness. Yet there are four obvious classes:

1. A tiny top class consisting almost entirely of the most important party members, who wield significant political and economic power. These receive the maximum rewards.
2. A second class of managers and bureaucrats on one hand, and technicians and intellectuals on the other. This class would include nearly all of the Soviet citizens (5.5 percent) who have some higher education.
3. A third class is made up of white-collar and skilled blue-collar workers, most of whom have a high-school education. This class tends to live in the cities, although it also includes some highly skilled agricultural workers.
4. The bottom class of unskilled farm laborers and urban workers is the largest. Most of these people did not complete seven grades of school. The farm workers form the largest, poorest subgroup of this class (Jacoby, 1974).

Those who succeed in the Soviet educational system are more likely to be in the two top classes. Yet parents in the third class place a high value on education. So the university becomes their major access into the two top classes. It is difficult to gain entrance to the universities for, as the number of high-

school graduates rises, the competition for university entrance sharpens. The influence of class becomes very important.

University entrance is supposed to be based on entrance examination scores. However, parents will use any measure to get their children into an institute or university. One common practice in the cities is the hiring of private tutors for students in both lower and upper grades. Private coaching is one of the "gray areas" in the Soviet philosophy. This practice discriminates in many ways. For one, it discriminates against those who do not have the money to hire tutors. The rural families are in a double bind for, even if they had the money to hire a tutor, they probably would not be able to find an acceptable one.

The percentages of full-time university students whose parents were members of the intelligentsia rose from 41.1 percent in 1965 to 45 percent in 1968. During that same time the proportion of students with a collective-farm background dropped from 19.5 percent to 16 percent. These statistics do suggest a failure to close the educational gap between classes. It is particularly evident between the lowest class of farmers and the rest of Soviet society.

Geography is another factor in the gap between opportunity and achievement for Soviet students. The differences in rural and urban areas are caused by economic and social conditions.

Economically, a large work force is needed on the farms because of the unmechanized agricultural system. Because of

this, the government controls the movement of the farm workers. Because the standard of living is much higher in the cities than in the countryside, it is difficult to keep well-educated, well-trained graduates in the rural areas. Newly trained teachers spend their "two-year tenure" in poor, rural areas, then rush back to the cities. This rapid turnover leaves a few, ill-prepared teachers in the rural areas to teach the children. Also because of the poorer economic conditions, there are poorer facilities, equipment and materials. So the children who need the most help often receive the least help from the public schools.

Soviet citizens born on farms do not have mobility, for they do not have the "internal" passports possessed by those who live in the city. Entrance to higher educational institutions is one of the few legal ways of obtaining that official documentation.

Statistics from the 1970 Census revealed the educational gap between urban and rural areas. In cities, approximately 6.2 percent of the population had a higher education. In the rural areas, the percentage was 2.4. Fifty-three percent of the urban residents had some secondary education beyond the seventh grade. The percentage was 31.8 among rural residents. In the "working" population, approximately nine percent had a higher education, while the percentage was only 2.5 in rural areas. More than 65 percent of the workers had some secondary, while only 47 percent did in rural regions.

National or ethnic origin is another major factor in the gap

130

between opportunity and achievement. Nationality is also closely related to urban/rural patterns. With the exception of the Georgians and Armenians, the best-educated nationality groups are either of Slavic origin or from the Baltic area. Of the fifteen major Soviet nationalities, the Georgians are top-ranking. They have achieved a level of education that is superior to that of more numerous groups. Nearly 58 percent have been educated beyond the primary level. Among smaller nationalities, the Jews have reached a point where 82 percent of their group have an education above the primary level (Kravetz, 1980).

All Asian and Turkish peoples fall well below Slavic and Baltic peoples in their levels of education. The eastern regions of the Soviet Union, where most of the Asian population lives, are also the most rural areas of the country. One of the serious problems among the Asian minorities is their negative attitude about education for women. They frequently oppose education for women beyond primary school. Therefore, mothers with little education are not able to help their children with schoolwork.

The Soviet policy on instruction in the national language is clear. Parents have the right to choose the basic language for schooling for their children. However, the general policy works differently among different nationality groups. The Russian-language schools are likely to have better-qualified teachers than the native-language schools have. This is true in both urban and rural areas.

All university classes are conducted in Russian. Therefore,

native-language secondary schools cannot lead to higher education. In areas where the general educational level is low, the Soviet language policy leads to the dominance of the Russian language among the better-educated (Jacoby, 1974).

There have been several "innovations" to attempt to bridge the gaps that exist in the educational system, particularly with the rural youth. Some educators identify the most talented rural students and send them to special boarding schools. Candidates are selected by competitive examinations at the age of 15. Allowances are made for the disadvantaged backgrounds of the boys and girls. After a few years of rigorous study, the students enter an Olympiad, which is a large-scale competition similar to an open scholarship competition (Snow, 1969).

In several experimental programs, the government provided special tutoring for rural students before the annual university examination. This is still experimental, for it is very costly.

The more common way of increasing educational opportunities for rural students has been to give them preference in university admissions. A form of "quota" system is used. The university is responsible for access.

Summary

The Soviet educational system is one of the largest in the world. Presently, 50 million people are receiving instruction in a variety of schools and colleges. The single-mindedness of policy aims is complicated in practice.

128

A ten-year general education for all children was set as a central government policy in 1938. This plan was disrupted by World War II, but by the late forties, over half of the young people were enrolled in full-time general schools. The massive decline in births after the war aided the process of full enrollment. Full coverage in primary education was accomplished in the 1970's. Enrollment in the senior classes of the general education schools peaked in 1976-77, but has fallen back since then (Tomiak, 1983).

In the vocational schools, graduations rose from about a third of a million in 1953 to 2.3 million in 1979. The estimated graduations in the next five years are expected to be only 2.6 million. The growth in the secondary specialized institutions is declining. The 1980 enrollments, on a full or part-time basis, were about 1.5 million. The part-time general school has expanded to about 5 million pupils. The old correspondence courses have been phased out to make way for the evening (shift) schools.

There are numerous problems that are related to vocational schools and the important process of labor training in Soviet education. One is that, at the age of fifteen, the pupil must either stay at the general school or leave to attend a secondary technical-trade school. Another is the lack of prestige attached to attending a vocational school and its perceived value. A third point is that the standards of general education (teaching and content) are not as high as in the ordinary school. Lastly,

a major difficulty in the training of skills lies in predicting how many and what kinds of specialists will be needed.

It appears that Soviet education may be approaching a solution to the problem of vocationalism in the general school sector. The general school is now so broad that its potential cannot be ignored. Arrangements are being made to send pupils to a new kind of institution, "production training centres" or "combines," which are supposed to be properly staffed and equipped. By 1981, the number had grown to 2,000 with plans to accept up to 85 percent of the senior urban pupils. At the same time, efforts are being made to train young peasants in mechanizing procedures. By 1979-80, no less than 88 percent of the full-time general schools had arranged "deepened labor instruction" for their pupils, with no less than 4.6 million pupils involved.

The key elements in the processes of expansion and improvement of education in the U.S.S.R have been the conviction that education is the crucial factor conditioning social and economic progress, and the general belief that to learn and to work are matters of civic duty, not simply of personal advantage (Tomiak, 1972). The middle 1920's produced many interesting innovations and ideas in educational thought. One was that productive work and socially useful labor were the basis of all education.

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Access to Education In Eastern European Socialist Countries: Programs and Policies

Introduction

The purpose of this paper is to discuss programs and policies which have influenced access to education in Eastern European Socialist countries since World War II. The paper discusses pre-war educational systems in six selected countries and problems, policies, programs and outcomes of post-war educational reforms. Outcomes are discussed in terms of increases in literacy rates and general school attendance since World War II.

For the purpose of this paper Eastern European Socialist countries are defined as countries geographically located in Central and Eastern Europe which have communist governments. Politically, they all subscribe to some form of Marxist-Leninist doctrine. Of these countries, six have been selected for discussion in this paper: East Germany, Poland, Czechoslovakia, Romania, Yugoslavia, and Hungary. This paper addresses these selected six countries as a group; however, unique features of each country will be discussed.

Whereas these countries differ in degree of economic and educational development, and differ in cultural heritage, they share a great many historical experiences, including foreign occupation

during the Second World War and Soviet assertion of political ideological dominance after the war.

Educationally the selected six countries have much in common in that they all experienced interruptions in their educational systems during World War II and were forced due to destruction of the war to rebuild their educational systems from scratch after the war. After the war all of these countries adopted socialist educational reforms in restructuring their educational systems.

Historical Background: Pre-War Education

According to researchers of socialist educational systems, overall, education in pre-war Eastern Europe may be described as unevenly developed, but in most cases backward (Grant, 1969; Berend, 1980; Kozakiewicz, 1980). Much of the backwardness in education in Eastern Europe can be attributed to elitism in access to education and lack of educational facilities, especially in the countryside. As a result of these two forces, Yugoslavia had an illiteracy rate of 40 percent, Poland over 25 percent, Romania 25 percent, Hungary 8 percent, and Czechoslovakia 4 percent (Grant, 1969).

128

Among the pre-war educational systems, the East German system was the most advanced. Likewise, under the Weimar Republic, Germany had one of the highest standards of living in Europe due to modern industrialization and a well organized educational system. The German educational system included primary, secondary, vocational, and college or university schooling. Schooling was compulsory to age 14 (Grant, 1969).

When Hitler came to power in 1933 radical changes were made in the organization of education, however, the pattern of primary and secondary schooling remain the same. The major changes were that the educational system was centralized under the National Ministry of Education and Youth Welfare, the nazification of the teaching profession, and the politicalization of the school curricula (Grant, 1969).

Pre-war education in Poland is described as of high quality (Grant, 1969; Parker, 1972). Poland inherited a long tradition in education dating back to the Middle Ages. The Poles heritage of scholarship can be traces from the foundation of the University of Krakow in 1364 (Grant, 1969). Yet, prior to World War II, the Poles experienced the highest illiteracy rate in the Eastern Europe region.

121

Although Poland's School Reform of 1932 provided for compulsory education at the primary level for children 7 to 15, it is speculated that about 10 percent of the population in this age cohort did not attend school (Grant, 1969). In the countryside 73 percent of the primary schools covered the 7 years, but did not cover the material provided in the urban primary schools; over 50 percent of the primary schools in the countryside were one teacher establishments (Grant, 1969).

Access to education was also limited by fees for secondary schools and lack of well developed vocational schools. The lack of vocational schools limited the opportunity for those who desired to attend secondary school, but did not meet the requirements for the general secondary school, to continue schooling beyond basic schooling. Consequently, the secondary schools included only a small section of the population.

Likewise, entrance to higher education was very selective, with bias toward acceptance of children representing more urban, professional families. In the entire system of higher education, under 1 percent of college students represented working-class or peasant families (Grant, 1969).

146

Consequently, whereas the pre-war educational system in Poland was of high quality, lack of access to education created a legacy of much illiteracy and educational backwardness.

In addition to the problem of unequal distribution of education in Poland prior to the war, the war had devastating effect on the Polish educational system in that scholars and educational institutions were destroyed by the Nazis. Among those on the Nazis' list of priorities of Polish people to be killed first were the intellectuals, the aristocracy, the clergy, and all Jews. In all about 20 percent of the Polish population was destroyed by the systematic attempt of the Nazis to eradicate Poland and everything Polish (Grant, 1969).

After the German invasion, the western provinces were incorporated into the Reich, Polish schools were closed and the Polish language forbidden; in the meantime only elementary schools and a few technical schools were allowed; secondary and higher education was forbidden (Grant, 1969). Thus, due to devastation of the war, post-war Poland was left with the task of restructuring the educational system from scratch.

The Czechs, like the Poles, have a tradition of educational excellence which can be traced to the Middle Ages. Renowned as a center of learning during the Middle Ages, the Charles University in Prague is

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the oldest university in Central Europe. Further Czechoslovakia has long been more industrialized, with over 80 percent of its population urban (Grant, 1969). Therefore pre-war Czechoslovakia was spared the educational backwardness and low living standards that plagued Poland and Yugoslavia.

Czechoslovakia's pre-war educational system was one of the most widely spread among its population, resulting in only a fraction of illiteracy among its population. The pre-war educational system in Czechoslovakia drew from the German model. Schooling included primary school which was compulsory to age 14, secondary school, which offered two tracks to higher education, and college or university education (Grant, 1969).

Two factors that influenced the literacy rate in pre-war Czechoslovakia were the structure of secondary education and the strict enforcement of the 1922 Education Law which made education compulsory to age 14. Strict enforcement of the compulsory school attendance law increased the number of students who acquired schooling to age 14, particularly in the urban centers. The structure of the secondary school included two options for attending secondary school: academic or general secondary school and civic

secondary school. Both options provide an opportunity for higher education.

By having two options, students who were not ready for the more rigorous curriculum of the general secondary school did not reach a "dead end" upon completion of secondary school. Instead, the option to enter civic secondary school, which integrated practical vocational skills with general education was provided. The civic secondary school could lead to higher vocational education and ultimately entrance to college. Consequently, the civic secondary school encouraged many students who did not qualify for academic secondary school to pursue higher education through this route, thus increasing the number of persons attending college.

The major pre-war educational problem encountered by the Czechs was the unequal distribution of education between the countryside and the urban areas. Although the 1922 Education Law made schooling compulsory to age 14, in predominantly rural Slovakia only 38 percent of the under 14 population went to any kind of post primary school (Grant, 1969). This meant that the rest of the population in this region had only five years of formal schooling.

Unlike East Germany, Poland, and Czechoslovakia, little educational reform had been achieved in pre-war Hungary. According to some researchers, lack of educational advancement in Hungary prior to the Second World War may be closely related to the unstable political position of Hungary, which was ruled by successive political regimes (Grant, 1969; Berend, 1980). Hungary's preoccupation with wars and revolts resulted in a underdeveloped and economically stagnant nation.

Consequently, prior to the Second World War, living conditions in Hungary were among the poorest in Europe. Fourteen in every 10,000 were dying of tuberculosis, infant mortality was high, and unemployment rampant. Illiteracy was 8 percent, and over 20 percent did not even complete four years of primary school, let alone go further. Among the secondary grammar school students, only 4 percent were from working-class or peasant families (Grant, 1969).

Even though the educational system in pre-war Hungary was of high quality, lack of access to the system to most of the population, lack of reform to make education universal through primary school, and the parallel lack of economic development left the nation in a state of illiteracy and backwardness at the end of World War II (Berend, 1980).

144

For exceeding the illiteracy rate of Hungary, pre-war Romania had an illiteracy rate of 25 percent. During the pre-war period less than 6 percent of Romania's population continued primary education beyond the fourth year (Grant, 1969). Although the educational system was designed to allow all children an opportunity to complete 7 years of compulsory schooling to age 14, most terminated education at age 11 (Grant, 1969). This meant that in reality, upon completion of the fourth year most left school; this was particularly true of the countryside.

Besides the obvious lack of access to schooling for a large percentage of the Romanian population, another problem in education was the narrow concentration on humanities and languages, with very little attention given to vocational training. The educational system was designed for the development of intellectuals rather than technologist. Therefore the pre-war education system, though of high quality, was available to an elite class of intellectuals, creating a large underclass of illiterates. Likewise there was a void of individuals prepared to pursue vocational and technical occupations necessary for economic development.

Perhaps the most culturally complex of the Eastern European countries is Yugoslavia. The complexity of the

145

culture of Yugoslavia had influence on the development of pre-war education in the country. Yugoslavia is comprised of six republics and five nationalities, and has four languages and three religions, Orthodox, Catholic, and Muslim (Grant, 1969). Among its many nationalities, the Catholic population was more prosperous and more culturally westward and the Orthodox and Muslim, poorer and culturally oriented to the East. The problems of cultural heterogeneity contributed to unequal distribution of wealth and inequity in access to schooling, resulting in a country of mass illiteracy, among other social and economic problems.

This legacy of illiteracy, can be attributed to the fact that pre-war education in Yugoslavia included only four years of compulsory basic education. Access to secondary education was severely limited due to high selectivity, with the only way of reaching higher education through the academic secondary school. Vocational education or technical training was almost nonexistent.

Although education from primary to higher education existed in pre-war Yugoslavia, access was unequally distributed by economic, ethnic, and religious groups as well as by regions of the country. According to pre-war figures, 46 percent of the

population was considered as illiterate, which in itself is extremely high (Grant, 1969). Yet, among some ethnic groups such as the Macedonians, illiteracy was over 70 percent and 72 percent among the Bosnian and Herzegovinans (Grant, 1969). Education for other groups was neglected altogether. Even among the Macedonians, instructions were not given in their language, rather instructions were given only in Serbo-Croat.

Because of unequal regional distribution of education, the gulf between educational attainment in the northern and coastal regions and the rest of the country illustrates that pre-war education was a failure for the nation in terms of access. Again, these differences also ran along cultural and ethnic lines.

Like Yugoslavia, Poland also also suffered great losses during the war. The country emerged from the horrors of occupation during the war with a major task of reconstruction in hand; 14 percent of the schools had been destroyed and 36 percent badly damaged (Grant, 1969).

Overall pre-war educational systems in Eastern Europe were well developed in East Germany, Poland, Rumania, and Czechoslovakia, with Hungary and Yugoslavia being the least developed. Whereas the

149

educational systems were well developed, lack of enforcement of compulsory basic education laws had impact on illiteracy in countries such as Poland. Also neglect of vocational education had serious effect on economic development in all of Eastern Europe with the exception of East Germany and Czechoslovakia.

All of Eastern Europe was confronted with the problem of lack of access to education for the working-class and peasant families. This was particularly true of the countryside where there was a major shortage of basic schools. The problem of lack of adequate educationally facilities in the countryside was more pronounced in Hungary, Yugoslavia and Poland.

In addition to the lack of an adequate supply of basic schools, the very fact that fees were charged for secondary schooling limited the social range of students who were admitted to secondary school and subsequently to college. Hence, the major problem of education in pre-war Eastern European countries was not the quality of education, but the limited scope of courses of instruction, the general shortage of schools and teachers, and unequal distribution of educational opportunities by class and region.

148

Devastation of the war added to these problems causing all of these countries to establish major reforms in education in restructuring education after the war.

Post-War Educational Problems,
Policies and Programs

According to some Eastern European scholars, since World War II education in Eastern Europe has experienced phenomenal growth and development (Berend, 1980; Rybalkov & Soloviev, 1980; Kluczynski, 1980a, 1980b). These authors report that adult illiteracy has been reduced to almost nonexistence, ten years of schooling has become universal, with most countries striving for 12 years of universal education.

An overview of the educational problems that existed after World War II, reform policies and programs, and the consequences of reforms to access to schooling provide a clearer picture of how accomplishments in improving access to education were achieved.

Post-War Educational Problems

Post-war Eastern Europe found itself in economic, social and political disarray. The same educational problems that had plagued most countries prior to the

109

war still existed, but in larger magnitudes. Economically these countries trailed far behind the Western countries. The per capita GNP level of the Comecon countries, except Czechoslovakia varied between \$300 and \$600 in 1950, therefore achieving only one-quarter to one-half of the most developed Western European standard (Berend, 1980).

The major problem Eastern European countries faced during the early post-war years was a growing lag in their educational systems which limited the opportunity for industrial expansion and economic growth. While rapid expansion of heavy industry, service industries, and the beginning of high technology took roots in the West, these countries were in the mist of picking up the pieces from the destruction of war which left countries such as Poland and Yugoslavia in worst conditions than they were prior to the war.

Although the number of children attending school in Hungary had increased to 92 percent, education was still limited to four or six grades (Berend, 1980). The number of children attending secondary school had increased from 5 percent in the 1930's to 10 percent after the war; the illiteracy rate was still around 8 percent (Berend, 1980). Like most other Eastern European countries, most of the illiterates were to be

found among the agriculture population (Kozakiewicz, 1980).

In terms of schooling itself, schools still placed heavy concentration on general education. The structure and content of education was obsolete. The general frameworks of education were designed to develop elementary knowledge of reading, writing, and arithmetic at the basic level and general education at the higher levels (Berend, 1980). Little in the curriculum applied to practical work or applied knowledge, instead the curriculum provided preparations for further education (Berend, 1980).

Most Eastern European countries were holding on to the age old traditions of knowledge for the sake of knowledge, thus providing an elitist education for a small segment of the population (Kozakiewicz, 1980). Only 20 percent of the appropriate age group attended secondary school in Hungary and only 10 percent of the college age group attended college (Berend, 1980).

Shortages of qualified teachers, inadequate equipment, and lack of funds to secure these resources made technical education nearly impossible during the years immediately after the war. In Hungary only 8 percent of the student population received technical or

vocational training (Berend, 1980). This pattern was similar throughout Eastern European countries.

Besides the problems of shortage of qualified teachers in technical education, there was a general shortage of qualified teachers at all levels of the educational systems in most of Eastern Europe. Most teacher received training which was limited to lower levels of teaching. Many teachers, in the schools located in the agriculture areas had only secondary level training (Grant, 1969). Well trained teachers tended to seek jobs in the urban areas, severely restricting the quality of education provided to children of peasant families.

Even with the introduction of socialist educational reforms, designed to equalize education, inequalities in education still exist in Eastern Europe. Kozakiewicz (1980) reports that economic, demographic, space and regional, school, and psychological barriers contributed to problems of access to education today, although legal standards for equalization of educational opportunities have been in effect since the late 40s and early 50s.

Some examples cited by Kozakiewicz are that whereas basic and secondary education is free,

152

economics is a serious barrier to higher education. For example in Poland 25 to 40 percent of the cost of teaching a student in an institution of higher education is covered by parents. Limitation on state funds curtail the number of state scholarship that can be provided to families to defray a proportion of the cost of higher education. In many cases children of urban professional parent still have an educational advantage over their rural counterparts who are poorer.

Another example of unequal access to education cited by Kozakiewicz is the demographic distribution of the population. High birth rates in the countryside have impact on access to school in that shortages of school facilities are created. This problem, when couple with regional barriers such as lack of transport facilities to bus children of overpopulated rural areas to less populated nearby regions, creates disparity in the levels of schooling provided urban and nonurban children.

In Poland around 1970, the index of learning for 16 year olds in rural areas in proportion to the index of learning of 16 year olds in urban area was 1:1.29; for 18 year olds 1:2.03 (Kozakiewicz, 1980). Inequities in educational representation by class and social status are still evident in socialist

educational systems. For instance, in 1978 in Hungary four times as many children of white-collar workers went on to secondary school than children of manual workers (Kozakiewicz, 1980).

The current problems the socialist countries are confronting in achieving equal access to education are no different from the ones Western countries are currently encountering. Considering the pre-war picture of the socialist educational system, even with the current problems, the socialist countries have made strides in improving access to education.

Policies and Programs

Approaches to socialist educational reform in Eastern European countries varies according to the political, social, and economic problems of each country. Whereas during the early stages of educational reform the Soviet educational model was followed, over time, with the exception of East Germany, all the Eastern European countries have deviated from the Soviet model to align educational reform with the current economic and social needs of their respective countries (Parker, 1972). In this sense socialist educational policy tends to reflect national educational goals rather than represent a monolithic communist educational model.

154

Nonetheless, one can not separate communist political ideology from educational policy in Eastern Europe. Irrespective of their distinctive features, all of the socialist educational systems of Eastern Europe are based on Marxist-Leninist tenets which advocate that 1) education should be used to transmit the moral standards of conduct for participation in a socialist society, 2) all individuals should have the opportunity to attain the highest level of educational achievement based on ability, 3) education should be continued throughout life, to improve the individuals maximum contribution to the social and economic development of society, 4) education should be used to up-date production and to keep pace with technological advancements essential to the economic development of the nation, and 5) education should be used to achieve the goals of communist political ideals.

Thus according to Rybalkov and Soloviev (1980), the major objective of socialist education is:

... to shape socialist personalities who employ their talents and capabilities for the benefit of socialist society and who are distinguished by their willingness to work, by their preparedness to take part in national defense, by their collective spirit, and by their striving for high communist ideals (Rybalkov & Soloviev, 1980:2).

Consistent with socialist ideology, educational reform in Eastern Europe was based on the principles of

153

moral socialist education as the foundation for creating a socialist society. Faced with the problems of educational backwardness, as illustrated by high illiteracy rates, and economic underdevelopment, as illustrated by lack of industrialization and poor standards of living in most of Eastern Europe, the first educational reforms were designed to create a new socialist order to improve overall living conditions. The objectives of educational reform were to expand and equalize access to education, to improve adult literacy rates, and to develop the capacity of the work force to sustain economic development.

Throughout the 1940's and 1950's each country passed educational reform laws to attain the objectives outlined above. In Romania, for instance the 1948 Law for the Reform of the Educational System stated that the goals of education were:

To eliminate illiteracy; to broaden and democratise the basic educational system as to include all children of school age, as well as adult illiterates; to educate the youth in the spirit of popular democracy, and to instill in them the spirit of patriotism and proletarian internationalism (Grant, 1969:81).

In addition to objectives outlined in this policy statement, steps were taken to improve the content of education in Romania to include more courses in science and technology, and to link schooling with needs for national economic development.

One of the major aims of the 1948 school reform in Romania was to make basic education universal, free and compulsory to age 11. This law was extended in 1958 to make education compulsory through the seventh year of schooling. Compulsory school attendance was increased to eight years in 1962; eight years of education became universal in 1965. In the 1970's Romania achieved universal schooling to 10 year and is currently aiming for 12 years of universal schooling (Parker, 1972; Mitchell, 1977).

Educational reform policies were also passed abolishing fees for schooling at all levels except kindergartens and boarding schools. By 1965 free books were provided for all schools through secondary schooling. Underlying these policy objectives was the notion that educational expansion was absolutely fundamental to all of the nation's economic, social, and political objectives.

As more attention was given to the economic development on the nation, during the 1970's educational reform was directed toward curriculum changes which reflected the economic development plans for the country. Educational reform during the 1970's included more tightly centralizing educational decision

157-

making through the creation of the Ministry of Education; more emphasis on practical high schools and increases in the number of vocational courses taught in general high schools; and expansion of polytechnical education in higher education. Although these reforms were resisted by Romainan educators at the local level and parent, these reforms were implemented.

In 1945 Poland's Ministry of Education initiated policy which advocated unified, free, compulsory education, open to all levels. Subsequently the Decree on the Organization of the School System of 1949 decreed that seven years of basic education would be compulsory, the technical network would be expanded and part-time schools for adults would be established to stamp-out adult illiteracy. To accomplish these goals, crash programs were implemented which included adult education courses to wipe out illiteracy and accelerated school building programs to replace those destroyed by the Nazis.

Among the reforms in the structure of the educational systems were the abolition of the three-grade classification of elementary schools, the unification of secondary schooling, and the reorganization of vocational schooling. Also, educational reform in Poland included coordination of the primary schools in given areas, and stricter

152

enforcement of school attendance, which resulted in effective compulsory education to eight years of schooling by 1966. By the 1970's Poland had achieved universal education to 10 years.

In the 70s reforms in higher education in Poland led to the expansion of technical education and the creation of polytechnical education through the establishment of polytechnical institutions of higher education. These institutions focus on science and technology education in the expectation that such an emphasis will further strengthen the nation's move toward a more industrialized nation.

Even though considerable emphasis has been given to the development of vocational and technical education, Poland still places emphasis on general education in vocational schools. Unlike the Soviet model, in Poland, vocational education includes more hours of general education in vocational schools. For example, in Polish vocational schools, 74 to 76 hours of general education subjects are required per week, contrasted with 43 to 48 hours per week in Soviet vocational schools (Mitchell, 1977).

To link education with economic development plans, in Poland higher education planning was centralized

139

under the Ministry of Education. The Ministry of Education is responsible for planning educational programs, setting budgets, determining admission quotas, identifying research priorities, and specifying job placements for all higher education institutions within the boundaries of the country (Williams, 1982).

During the 1980s efforts were made by university students and faculty to induce reforms in the central control of higher education to allow faculty and students more participation in university decision making. This attempt was not successful, however, with the influence of the Catholic church in Poland and the moderate success of the Solidarity Labor Movement, one observer speculates changes in higher education are inevitable in Poland (Williams, 1982).

The fact that Poland is the only Eastern European socialist country to have a private university, the Catholic University at Lublin, is an indication of the determination of the Polish people to deviate from the Soviet model. Such determination may result in other reforms to bring the system of higher education closer in line with the cultural heritage of the people.

In Hungary the 1945 Education Law abolished the dual elementary education system and required all

students to attend 8 years of basic education (Grant, 1969). Secondary education was expanded to include technical, agricultural and economic schools and four year teacher education. To more closely link education with work skills, apprentice training was absorbed into the technical educational system. The Education Law of 1945 also nationalized private and church schools and instituted a compulsory basic school from 6 to 14 years of age. To strengthen this law the 1949 Constitution guaranteed every citizen the right to free and compulsory basic education (Grant, 1969).

To further expand technical education in Hungary, the Education Law of 1961 increased emphasis on polytechnical education in general schools and expanded compulsory education to age 16 (Halasz, 1986). Whereas basic education ended at age 14, vocational education and other alternatives for schooling made it possible for compulsory schooling to age 16. This model of educational expansion was unique in that the basic school was not expanded, instead vocational technical education was added to the educational system. Thus students who left general school at age 14 would be required to continue their studies in secondary or apprentice school until age 16.

During the 70s Hungary was among the Eastern European countries to initiate reforms to move away

161

from the Soviet centralized model of educational planning and decision making. Whereas the Hungarian Pedagogical Institute has chief responsibility for planning educational curriculum and teaching programs for secondary and elementary schools, there have been reforms to reduce the strength of central direction of the curriculum, the introduction of an elective element in the schools, and an increase in teacher autonomy (Norman, 1980).

In Czechoslovakia post-war educational reform was initiated under the 1948 School Law. This law brought all schools under state control; provided each nationality the right to be educated in their own language; expanded technical and adult education; and eliminated early selectivity for secondary school. In the 1948 School Law, the basic aims of the educational system were stated as:

To make culture, training and education democratic. Emphasis is given to the idea of the "political" school; the school should train young people to take an active part in the building of a people's democracy..Children are brought up in the spirit of the country's progressive traditions and that of socialist morality (Grant, 1969:90).

Additional reforms in 1960 lengthen basic school to nine years and further expanded vocational and technical education to increase emphasis on polytechnical and technical studies in the schools, as

well as the introduction of new types of schools for adults. Among the adult schools introduced were the apprenticeship centers. In order to meet the acute need for a trained adult population, apprenticeship centers were established throughout the country. Apprentice training centers were situated in and run by major industrial concerns, where the apprentice would be bound by contract for the entire course. Since the objective was to train qualified workers about 80 percent of the time was spent on vocational training (Grant, 1969).

In 1978, Czechoslovakia, reversed its nine year of schooling policy to reinstate the traditional structure of education: eight years of primary and four years of secondary training (Berend, 1980). This system provides twelve years of education, which is universal. The major objective of this reform was to ensure ten years of basic general training and a better or more equal combination of general and practical education.

In Yugoslavia the first post-war educational reforms were initiated in 1945. The general aim of educational reform was:

To enable the younger generation to contribute by their work...to the continuous development of productive forces, to the strengthening of socialist social relations.. to provide the foundation of scientific conception of the world...to make youth familiar with the history and achievements of

the Yugoslav peoples and the entire human race..to raise young people so that they may come to be loyal to their socialist homeland and to value the international solidarity of the working people (Grant, 1969:90-91).

This aim was incorporated in the 1958 General Education Law which adopted the eight year school as the basic unit; expanded provisions for secondary education to shift emphasis from the general school to the vocational and technical schools; and established the right of individual to receive instruction in their native languages. Secondary education was reorganized to provide alternative routes to higher education through the technical and vocational schools.

Due to the lack of well trained adults to carry out the economic development objectives of the country, Yugoslavia, like most socialist countries, introduced policy to increase both the quality and number of trained personnel in industry. The underlining principle was reflected in a policy statement from the Federal Executive Council in 1958 which stated:

The education of the working people is an integral part of the building up of socialism in our country, of development of our productive forces, an indispensable condition for raising our country out of economic and cultural backwardness, for creating as favorable a structure as possible for our population to acquire greater vocational training, for the maximum possible contribution by each individual at his work post, for his higher living standard, for his personal affirmation in society in which all roads are open to the worker for a better,

164

finer and more cultured life (Bertsch & Persons, 1980:87).

This sentiment was reflected in the 1958 General Law on Education which set provisions for adult education and advanced professional training. Successive laws concerning adult education and workers education were passed in 1960, 1965, and 1970. A Resolution of the Federal Assembly on Vocational Training of Personnel, passed in 1960, encouraged individual enterprises and social services to set up institutions for training; established basic principles of vocational training; provided directions for workers, education; and made provisions for decentralization of educational policy. The Basic Law on Work Relations of 1965 set conditions for work organizations providing continuing education for workers (Bertsch & Persons, 1980).

In 1970 the Yugoslav Federal Assembly passed the the Resolution on the Development of Education on the basis of Self-Government which introduced the principle of equal education for youth and adults. This law states that a student at any age or school level may leave the educational system at any time to enter the work force, then reenter school at the point where he left without encountering any obstacles or new requirements (Bertsch & Persons, 1980).

162

The basic objective of the 1970 law was to provide individuals the opportunity to leave school to pursue productive work to fill the gap in personnel needs of industry, while at the same time retaining the right to continue their education at a later time.

The Resolution on the Development of Education on the Basis of Self-Government of 1970 not only provided an opportunity for workers to alternate between schooling and productive work, but also provided an opportunity for young adults to gain practical experience in self-management.

The concept of self-management, which was introduced in the 50's and developed in the 1970's transfers to the working class responsibility for management and decision making on its own behalf (Soljan, 1978). In the self-management process the working class as workers and citizens were delegated responsibilities for production management and decision-making in the complexity of social and private life (Soljan, 1978).

One example of self-management in action is the process of workers' education decision making at the enterprise level. In each enterprise, workers participate in decisions concerning workers' education

106

leaves and financing of workers education. Through the self-management process the worker's council, comprised of workers, determine the specifics of financing workers' education in terms of the amount each worker is to contribute from his income to a collective fund to finance workers' education.

In addition to legislation at the national and republic levels, bylaws are made in each production enterprise which form the basic principles of workers' education in that organization. These bylaws usually include the right and obligation of workers to further training, regulation for study grants to workers, and labor regulations rules (Bertsch & Persons, 1980). These laws set guides for workers and industry for implementing self-management in industry decision making regarding workers' education and production.

Perhaps one of the most unique features of educational policy in Yugoslavia is the decentralization of educational decision making. Whereas all of the other socialist countries of Eastern Europe have centralized educational systems, Yugoslavia viewed centralization of educational policy as contradictory to the socialist goal of popular participation of citizens in public affairs at all levels. Therefore the Federal Constitution of Yugoslavia delegates responsibilities for education and

culture to various decentralized governments (Farmerie, 1974). With the introduction of self-management, decentralization of education has been extended to local citizens.

The self-management concept is operationalized in management of schools at the local level in that educational decision making is shared by parents, educators and government officials through the Municipal People's Committee. The Municipal People's Committee not only decides which subjects are to be provided, but also makes decisions concerning allocation of funds and staffing of local schools (Farmerie, 1974). Based on Farmerie's observations, he concludes that this system is very effective and should be considered in other developing nations.

Whereas the East Germans had a legacy of educational excellence, in the 40's reform was implemented to adapt the system to communist ideology and to advance the ideals of socialism. Thus in 1946 the aims of educational reform in East Germany were defined as:

(The School) has the task of developing socialist national awareness of youth, of teaching youth love for the German Democratic Republic, and to be conscious builders of socialism in the spirit of socialist morality, proletarian internationalism and firm friendship with the Soviet Union (Grant, 1969:90).

168.

Consistent with this view of education, the Law for the Democratization of the German Democratic Republic Schools passed in 1946 declared that all children had an equal right to education and made education a responsibility of the state. When the Constitution of 1949 was written it guaranteed the right of all citizens to an education; defined the purpose of education; and separated the church and the school (Grant).

In further expansion of educational reform, the 1959 Law on the Socialist Development of Education extended the basic school to ten years. In the mid-1960s ten years of schooling was made compulsory in East Germany. For those leaving the basic school at 16, there were various types of vocational schools, which provided another channel to higher education. Upon completion of vocational education students could go into employment, or enter higher vocational schools, evening secondary schools, adult courses and ultimately enter a university or college.

To enhance adult education, part-time secondary evening classes were provided for adults. The evening secondary schools provided three-year preparatory classes for adults, usually those who had completed vocational training and wanted to enter higher.

education after some time of productive work (Grant, 1969). These schools were run by the universities and other higher education institutions.

In general, post-war reforms of the educational systems in Eastern Europe share a common basic philosophy and certain common program characteristics designed to increase access to education. Common program characteristics include: expansion of compulsory basic education and introduction of adult education to remediate educational deficiencies in the adult population; expansion of secondary education to provide more options for secondary education and elimination of fees for vocational education; shift of emphasis in higher education to polytechnical education and introduction of policy to give compensatory admission credits to students from working-class and peasant families; introduction of workers' education and continued lifelong learning adult education for workers to keep abreast of changing technologies in industry.

Consequences of Educational Reform to Access to Schooling

As a result of Soviet influence on post-war educational reforms a general pattern of school systems emerged. The educational systems in Eastern Europe all consist of four tiers: pre-school, basic, secondary and higher education. Therefore the outcomes of reforms

172

in education will be discussed for each tier in this structure of educational organization.

At the first level is the pre-school which includes Crechs which serve children under three years old, and kindergarten which serves children 3 to the age they enter basic school. Preschool education, though not compulsory, is provided in all Eastern European countries. Pre-school is not universal, although some countries, such as Romania, have goals to make pre-school universal. Also, pre-school is not funded by the central government, which means parent, industry or local governments finance pre-school.

Pre-school education plays a major role in early socialization of children to socialist ideals of "shared experiences" and moral education (Mitchell, 1977; Kluczynski, 1980;). Kindergarten, also provides a mechanism for identifying children with family environmental problems and learning disabilities early in order that they can be corrected to improve the youngsters success in basic schooling, thus improving access to secondary schooling (Mach, 1984). The problem with pre-school is that it is not universal and most children do not have an opportunity to attend pre-school (Mitchell, 1977; Mach, 1984).

171

Some countries, however, such as Czechoslovakia have instituted programs to improve access to pre-school for more families. One program implemented in Czechoslovakia places the kindergarten in the basic school where trained specialist can work with the child to prepare him/her for entrance to basic school. This program, introduced in the 80s, is designed to give children with special educational problems, whose parent can not afford pre-school, the same advantages of pre-school education as children who attend pre-school (Mach, 1984).

The basic school, described by Grant (1969) as comprehensive and unified from early childhood to middle adolescence, is the fundamental unit of every educational system in Eastern Europe. The age children start basic school varies from 6 to 7 years according to different countries. With the exception of East Germany who has 10 years of basic schooling, all of the other countries have a uniformed 8 years of basic schooling. Expansion of basic schooling has increased the opportunity of more youngsters to receive more years of schooling in the fundamental basic skills.

In all of the countries basic schooling is compulsory, and is controlled by the state. Based on Kleinberger's (1975) classifications of compulsory

178

education laws, compulsory education laws in Eastern European countries may may be classified as the "totalitarian type" of compulsory education law. One characteristic of "totalitarian type" compulsory education laws is that the type of school the child must attend is prescribed by law and that alternative schools are not acceptable.

Consistent with this definition, parent are not allowed to select a private school or educate their children at home. Compulsory education laws in Eastern Europe prescribe that all children belonging to a specific age group must attend a state sponsored basic school. Enforcement of compulsory education laws coupled with the establishment of more basic schools in the countryside has had impact on access to education for many children.

As a result of basic schooling reforms, by 1960 over 80 percent of school age pupils in Yugoslavia were attending basic school; 28 percent went on to complete secondary school; and nearly 6 percent attended college (Grant, 1969). According to the 1970 census, in Hungary the rate of illiteracy had fallen to below 1 percent; virtually all school age children attended school; at the end of 1960 the 180,000 students finishing the eight grade appraoched the

number of pupils enrolling in the first grade (Berend, 1980). By the mid 1970's secondary education had grown into a mass phenomenon in Hungary. In 1985 over 90 percent of youngsters completing General School went on to Middle School; in the 1983-84 school year the actual figure was 92.9 percent (Kozma, 1985).

Expansion of secondary school increased the number of students continuing beyond basic schooling. The secondary school is divided into three types: general, vocational/technical, and trade. In all of the countries except Yugoslavia, secondary education is subject to central planning, which is based on the economic needs of the country (Kluczynski, 1980).

The expansion of vocational and technical education had impact on decline in general education. For example in Romania, the ratio of 75 general and 25 specialized vocational/technical high schools has turned around to 25 and 75 (Mitchell, 1977). More recently, however, the Romanians are reexamining practical education expansion policies. Since the 1980's, educational policy makers throughout socialist countries have been concerned with establishing an equilibrium between the traditional general education and practical technical education (Kluczynski, 1980b).

In Hungary, by the 1970's increased access to vocational schools was reflected in the increase in attendance in vocational schools which rose from 15 percent in 1960 to 26 percent in 1970. At the sametime enrollment in general secondary schools decreased from nearly one-third in the late 1960 to one-fifth in the 1970s (Berend, 1980). Increased access to secondary school through vocational school was also experienced in Poland where 96 percent of the primary school leavers continued education in a three-year basic vocational school or in a four to five year full secondary school (Kluczynski, 1980).

Prehaps the educational reform which has had the most phenomenal impact on access to education at the secondary level is open passage to higher levels of education by providing multiple channels for entrance to secondary schools. Whereas the channels to secondary school vary by country, all of the Eastern European countries have attempted to eliminate "dead ends" in the secondary schools (Kluczynski, 1980b; Rybalkov & Soloviev, 1980). By adding more options for secondary school, students and parents may select the type of secondary school that best fits the abilities and interests of the student rather than force students out of the school system because the general secondary school was not suitable.

143

Higher education, the final tier in the educational system includes, the traditional univeristy, teacher training colleges, and other institutions of higher learning such as technical/vocational institutions, and polytechnical institution. Several measures have been taken to increase access to higher education. Expansion of teacher training at the higher education level has resulted in better prepared teachers and somewhat reduced the shortage of teachers in some countries, thus increasing prospective teachers and in-service teachers access to specialized training (Grant, 1969).

Also, providing more and better training for teacher as well as providing more teachers increases the local populations access to education. The quality of teachers training in Hungary has been upgraded through improvements in teacher education curriculums and levels of specialization. To increase the supply of teachers in rural areas, bonus payment programs, scholarships sponsored by local authorities in exchange for teachers returning to the local community to teach, and other incentitive to attract teachers to rural areas have been instituted.

The least impact on access to higher education has occurred in the traditional universities. Although access to the traditional university is still limited for many students, the social distribution of students has been improved in most countries to include more working class and peasant students through special admission credits. Criteria for entrance to a university may include, performance in general secondary school or a vocational or technical higher school, examination scores, labor force needs of the particular country, and demonstrated commitment to socialist morals and to the socialist goals of society (Kozakiewicz, 1980), rather than entrance scores and performance in secondary school alone. This combination of selection criteria for university entrance makes university schooling accessible to more individuals, yet selection for university attendance is still very elitist.

In spite of increases in university level college attendance, in Hungary only 7 percent of the college age group attend college (Berend, 1980). Over half of the students in higher education were pursuing technical training rather than a liberal arts education. For example in Hungary only 30 percent of the students in universities, excluding those in

177

teachers' training college, were pursuing a liberal arts education (Berend, 1980).

Emphasis on the integration of general education and practical education has significantly increased enrollments in technical institutions of higher education. Yugoslavia, for example has experienced a tenfold increase in enrollment in institutions of higher education since World War II (Grant, 1969). In Romania where no technical institutions existed in the early post-war period, at the largest technical higher education institution there were 15,000 students enrolled at the undergraduate level and 2,400 at the postgraduate level in 1977 (Mitchell, 1977).

Another area where there has been tremendous growth in access to education is adult education. Adult education programs, originally designed to meet the need to educate large masses of adults who had missed the chance to attend basic school, made education accessible to adults. Adult education provides courses of every kind from basic school to the range of secondary vocational school leading to higher education. Adult schooling was provided in the work place or in a classroom setting.

During the earlier periods immediately after the war, adult education was perceived as a temporary

178

expedient which tended to disappear as the literacy rate of adults increased. Also universal basic schooling considerably reduced illiteracy among adults, thus eliminating the need for continued focus on adult basic education.

In Poland over 129,000 adults were enrolled in adult education courses in 1965-66, which was 10 percent increase over the previous year (Grant, 1969). Of those enrolled in adult education 63 percent went on to further study; 28 percent entered universities and the rest went to other institutions of higher education (Grant, 1969). In Romania literacy classes were attended by 870,000 adults in 1949-50 alone (Grant, 1969). In the mid-fifties there were nearly 55,000 adults attending basic school in Yugoslavia and over 180,000 attending basic adult school in Hungary (Grant, 1969).

As the need for basic adult education declined, emphasis has been placed on continued education for adults in the form of education for workers. Thus, education for the working person, particularly higher education, has become a permanent feature of all Eastern European educational systems. Education for the working people is closely linked to the economic development of the country; therefore these programs are designed to meet the current and future needs for

economic development (Kluczynski, 1980b). Cooperation between institutions of higher education, research institutes and plants provide various forms of training for working persons.

Access to education for workers included evening and correspondence courses, peoples universities, workers universities, and apprentice and trade training centers. The forms of workers education vary from one country to another. In East Germany, for example, in addition to correspondence courses and evening classes at universities, colleges and technical schools, there are numerous state and social educational institutions which encourage adult education. Among these institutions are: enterprise academies, scientific societies, academies of industrial branches, institutes for the management of socialist economy, evening classes, academies for advanced education, TV courses, parents' courses, and women's courses (Rybalkov & Soloviev, 1980).

The system of workers education in Eastern Europe is conducted through the peoples universities and workers' universities. The differences in these two types of workers' education is that the peoples universities cover a broad array of courses and address the needs of the people as a whole. The workers' universities are dependent on economic enterprises to

determine their curricula and are largely sponsored by industries.

According to some observers of Yugoslavia's education and industrial development, policies concerning self-management and workers education have been successful in the transformation of a predominately illiterate, poorly skilled nonparticipant society into a more highly educated, trained, and self-managing political culture (Soljan, 1978; Bertsch & Persons, 1980). Bertsch & Persons (1980) report that of the 4.3 million Yugoslavs employed in 1973, about 530,00 were enrolled in various forms of workers' education. Bertsch & Persons conclude that:

While the efforts of promoting workers' education have shown certain shortcomings, the overall record is an impressive one. The institutions within the workers' education system have aided in eradicating illiteracy, as well as providing a more highly skilled work force and a citizenry better equipped with the knowledge and consciousness that are needed to play an integral role in the "self-management" sociopolitical and economic systems (Bertsch & Persons, 1980:96-97).

It is evident that access to education in Eastern Europe has been improved since World War II when one compares literacy and school attendance rates of the late 40s with current statistics. Improvements in education are also reflected in industrial development in the region.

151

Shafer (1978) points out an illustration of the impact of education on economic development in socialist countries by using the German Democratic Republic as an example. She observes that one indicator of the success of socialist educational reforms in the German Democratic Republic is the growth in the country's economy to the point where its industrial output ranks sixteenth among the nations of the world and its per capita income is the highest in Eastern Europe. The population's occupational skills suffice to reach this standard. The bases for it is laid in schools (Shafer, 1978).

182

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TABLE 1. Indicators of Enrollment and Intake Capacities in Developing Countries, Both Sexes, 1980 (in percentages)

Region	Enrollment Ratio Primary Education ^a
Africa	77
Asia	83
Latin America	102
Total DC	86
31 LDC	88

^a Ratio between a region's primary school enrollment and its population of primary school age.

^b Not including China and Japan

Source: Calculations made by Fredriksen (1983) from UNESCO statistics, 1981

12

Table 2. Countries Classified According to Gross Enrollment Ratio in Primary and Percentage of DC's Population of Primary School Age, 1980 and 2000

Enrollment Ratio	No. of Countries		% of the DC's population of primary school age	
	1980	2000	1980	2000
Below 50%	15	5	5.3	2.2
50 - 59%	4	4	3.0	1.2
60 - 69%	8	4	5.9	0.7
70 - 79%	7	4	4.2	1.5
80 - 89%	10	12	38.8	9.0
90 - 99%	18	11	24.7	37.1
100 and above	43	65	18.1	41.8
	100	100	100	100

*

With the exception of China, the table includes the DC which in 1980 had a population which exceeded 250,000 inhabitants.

Sources: Population data by Frederiksen, 1981 UNEP/WHO statistics.

TABLE 3. Enrollment Ratio by Age Groups, Both Sexes

Region	Age Group 6-11			Age Group 12-17			Age group 18-23		
	1965	1975	1985	1965	1975	1985	1965	1975	1985
Developed countries	92	94	94	79	84	87	24.3	30	35.9
Developing countries	54	62	66	28	35	42	5.0	6.7	12.1
Africa	40	51	61	22	31	42	2.7	5.2	7.4
Latin America	65	78	86	43	57	29.5	67	9.1	19.7
East Asia	97	99	100	73	83	28.5	92	11.2	19.3
South Asia	56	61	66	26	31	8.6	36	5.0	6.9
25 LDC	19	28	37	12	17	6.0	25	1.1	2.7
Sahel Countries	15	19	26	9	13	3.7	12	1.1	2.6

Source: UNESCO, Office of Statistics, cited in UNESCO, 1981.

TABLE 4. Out-of-School Youth, Both Sexes (in millions)

Region	Age group 6-11			Age group 12-17		
	1965	1975	1985	1965	1975	1985
Developed countries	7	7	7	22	19	12
Developing countries	10	121	130	139	173	197
Africa	50	82	104	51	37	41
Latin America	14	11	9	18	19	19
East Asia	0.5	0.5	0.1	5	3	1
South Asia	54	77	86	88	115	137

Source: UNESCO, 1981.

TABLE 5. Programs Deployed by Countries to Address Programs Identified in Access to School.

Identified Problems	Programmatic Solutions
Different language groups	Development of native language curriculum
Tradition against female	Educating parents
Education (Father's school as an important prediction)	
Concerns for loss of children's production time	Provide economic incentives Develop more relevant curriculum to include production and health etc. related information
Burden on central government	Decentralize education responsibilities Privatization of schools Religion schools and community schools
Financial problems	Search for low cost schools
Outlying regions and nomadic groups	Mobile schools Radio-distance schools
Lack of teachers	Low cost teacher training
Lack of efficient administrative staff	Staff development
Unbearable administration	
Organizational inefficiency	
Emphasis on traditional value	Curriculum adapted with traditional contents
Segregated schools wasteful duplication (Fiji)	Integrated schools
Education / job economy	More male / female ratio to accommodate the needs for economic development

TABLE 5. Cont.

Insufficient and inaccurate
statistical data for basis
of projection needs

Selection process and methods
for admission

Impact of colonialism

Planning by indigenous or local

Sporadic and uncoordinated
planning and management

government, central planning

Existence of indigenous
schools, e.g., Islamic
schools in northern Nigeria

Accommodation of modern
professionalized educational
systems

Accommodation of modern
technology in education

Underestimation of funds

Over-reliance on foreign aid

Inaccurate projection of
education needs

Inappropriate model for planning

Education for women

Provide special courses in
economics, nutrition, etc.

TABLE 6. Exogenous and Endogenous Variables
Influencing Education Participation.

Exogenous Variables	Endogenous Variables
Education/employment linkage	Organization structure of the system
Education/economic development coordination	Management practice of the system
Education/technology development	Planning bodies
Different ethnic and language groups	Projections of needs
Colonial legacy	Choice of programs
Ecological conditions of the country	Program implementation
Current technological condition of the country	Administrative staff
Availability of infrastructures	Teaching personnel
Availability of financial resources	Capacity of the system
Availability of human resources	Efficiency of the system
Cultural and social institutions - ethnic, class and gender relationships - perceived relevance of education	School management
Political ideology	Classroom management
	Learning technology used
	Curriculum
	Instructional materials
	Availability of school facilities and building structures

TABLE 7. Ethnic Composition of Selected South East Asian Countries.

Thailand (%)	Peninsular Malaysia (%)	Singapore (%)
Thai	Malay	Chinese
Chinese	Chinese	Malay
Malay	Indian	Indian/ Pakistani
Indian	Indigenous Groups Europeans	Euroasian/ European
Vietnamese		
Khmer		
Hill Tribes		
Others		
100	100	100

Source: Watson, 1979.

192

TABLE 8. Recommendations for Improving Education Participation.

Endogenous Variables

- At macro-level
 - goal clarification
 - prioritization of goals
 - coordinated planning bodies
 - coherent planning activities
 - reliable and timely information

- At micro-level
 - new, innovative learning technologies
 - efficient classroom management
 - distance education
 - relevant admission standards
-

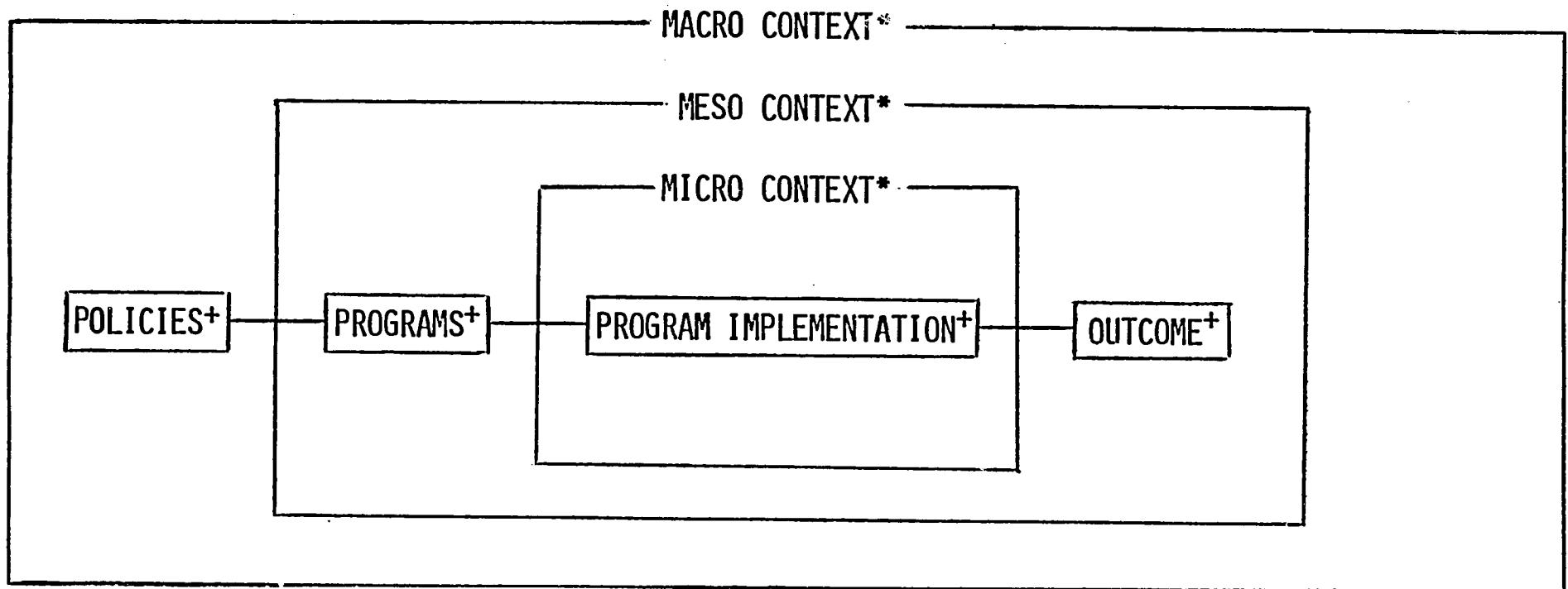
Exogenous Variables

- Sector coordination
- Education reform and development
- Education/employment
- Labor market

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TSU-BRIDGES LITERATURE REVIEW
PROPOSED, FEBRUARY 15, 1986 .



*Exogenous variables embedded within these contexts.

+Endogenous variables embedded within these systems.

Fig. 1