

# EDUCATION, ECONOMIC GROWTH, AND SOCIAL CHANGE

In this chapter, the relationship between education and economic growth is analyzed, with special attention given to the economic and education experience of the NIEs. In addition, the linkages between education and poverty, and between education and social and cultural change, are briefly explored.

## A. Education and Economic Growth

A key catalyst for national development, economic growth is generally assumed to be explained largely by stocks of labor, physical capital, and human capital (the quality of the labor force). Technology is assumed to be part of the growth equation, and the rate of technological change is associated with the availability of highly educated workers. Demographic structure and change support or inhibit economic growth.

As seen earlier, Group 2 is distinguished from other groups by many indicators (Table 2.1). Group 2 has by far the highest mean GNP per capita, the highest economic growth rate, the lowest percentage of the labor force in agriculture, and the highest percentage of the labor force in industry and services. Group 1 ranks fifth in GNP per capita but second in economic growth rate. Although primarily agricultural, this group has a substantial and growing industry sector. Group 3 stays close to the middle ranking: third in GNP per capita, third in economic growth rate, and fifth in percentage of labor in industry.

Groups 4 and 5 are low-income agricultural countries, although Group 4 has a much larger proportion of the labor force in industry. On nearly every indicator, Group 5 exhibits a wide range of values. Group 6 comprises nations with relatively high education levels but with economic difficulties. The transition economies in Group 6 and socialist countries in Groups 1, 4, and 5 are, with differing rates of speed, moving from centralized or command economies to market economies (or socialist market economies) that allow entrepreneurship and private capital formation. This transition for some Group 6 DMCs has resulted

in negative economic growth. The rankings for Group 7 vary from second in GNP per capita to fifth in rate of economic growth.

**Table 2.1: GNP per Capita Annual Growth Rates, 1985–1995**

Group	DMCs	Mean	Minimum	Maximum
1	2	5.55	3.10	8.00
2	5	6.26	4.80	7.60
3	5	3.94	1.20	8.40
4	3	0.83	-3.80	4.20
5	4	2.78	2.00	4.00
6	3	-6.47	-8.60	-3.90
7	5	1.94	-1.10	6.70
<b>Total</b>	<b>26</b>	<b>2.27</b>	<b>-8.60</b>	<b>8.40</b>

*Sources:* UNDP 1998a; UNESCO 1998b; World Bank 1997d; country sources.

The structure of a country's population provides one important context for understanding the growth of education systems and constraints on support for economic growth. The size of the dependency ratio helps define the magnitude of social services, and when the ratio is large, it has a moderating effect on economic growth. Dependency ratios—the population in the age group 0–14 as a percentage of the population in the age group 15–64 for each country—vary across DMCs, ranging from 28 percent in Hong Kong, China to 94 percent in the Maldives in 1995. Groups of countries with high population growth rates and fertility rates—e.g., Groups 4, 5, and 7—have large percentages of the population under 15, suggesting a potentially high demand for early levels of education and constraints on efforts to improve education quality.

The contribution of education to economic growth is generally found to be positive and significant when measured either in monetary terms or directly in terms of agricultural efficiency or labor productivity. Education also may contribute to poverty reduction; improvement in income distribution; and various dimensions of social, demographic, and political development. Although subject to some controversy, the relative significance of human capital has also been found to be generally higher in developing countries than in developed countries (Psacharopoulos 1994; Tilak 1994, 1997a).

The research of Mingat and Tan (1996) has raised questions about earlier conclusions regarding the level of returns to education. These researchers provided new estimates of social returns by accounting for

additional externalities, not typically taken into account, that benefit society—e.g., the increased productivity of educated workers may increase productivity of coworkers, and a rise in the general education of the labor force may increase the potential for innovations and adaptations leading to more long-term efficiencies in the workplace. Reflecting on their findings, Mingat and Tan suggest that: (i) for low-income countries, primary education has been the best investment; (ii) for middle-income countries, secondary education yields the highest social returns; and (iii) for high-income countries, tertiary education yields the highest returns. (A critique of the use of rate-of-return analysis is found in Box 2.1.)

Other researchers have questioned claims that returns to primary education are invariably high across countries of Africa, Asia, and Latin America. The works of such authors as Behrman and Birdsall (1985), Hinchcliffe (1986), Knight and Sabot (1990), and Glewwe (1991) suggest that calculations have often incorporated upward biases. This led Weale (1993) to argue that social returns to education are likely to be overestimated, with true values rarely reaching double digits (World Bank 1997c, p. 37).

Education at all levels contributes to economic growth through imparting general attitudes and disciplines and specific skills necessary for a variety of workplaces. Education also contributes to economic growth by improving health, reducing fertility, and—possibly—by contributing to political stability. Although the link between education and labor productivity is not entirely clear, general knowledge and learning skills acquired in school are usually assumed to make for more flexible workers capable of acquiring new skills and adapting to new working environments. A virtuous cycle is said to be created: “greater skills lead to progressively greater benefits from the introduction of new technology which, in turn, will lead to the further development of human resources” (ADB 1998, p. 195). The relevance of the education system to the labor market, thus, lies most fundamentally in its ability to produce a literate, disciplined, flexible labor force through high-quality, universal, basic education. As an economy continues to develop and new technology is applied to production, the demand for workers with more and better education increases. Thus, economies with export-oriented industries have higher education requirements than those continuing with traditional agriculture and commerce. An example (at the subnational level) is of the more industrialized coastal regions of the PRC, where lower secondary education plus language and computer

### Box 2.1: Using Rate-of-Return Analysis for Policy Making

Rate-of-return (ROR) analysis is an attempt to acquire insight into the value of education as an investment and to make comparisons with other investment opportunities. Because “the empirical evidence on rates of return investment has had a strong influence on government and donor policies regarding investment priorities” certain characteristics of ROR analysis should be kept in mind (Mingat and Tan 1996).

- The measurement of benefit is typically carried out by examining earnings differentials of workers with different levels and kinds of education.
- ROR uses data from cross-sectional surveys of earnings by education level and age of a given population at a given point. However, earnings profiles may vary over time, and current income streams may be poor predictors of future income.
- Emphasis on private returns suggests that individuals seek only pecuniary rewards, and ROR tends to define this as “rational behavior.” Yet work and income choices may depend on factors peculiar to individual values. Moreover, even if RORs are high for particular investments, people may value a different investment.
- When measuring ROR, unemployment is not taken into account; opportunity costs of households are ignored; and communication skills are not distinguished from technical knowledge.
- Even if individual productivity is increased by education, it is not known why. Reasons could include cognitive learning, personality, or increased cultural capital.
- ROR does not reflect the fact that individuals with the same level of education vary greatly in productivity.
- ROR calculations do not take into consideration externalities, even though externalities may strongly influence education decisions.

These characteristics suggest extreme caution in interpreting RORs. Yet, given the level of uncertainty about the behavior of education systems and the dynamic context in which they function, RORs are a legitimate input into policy dialogue (Birdsall 1996, Mingat and Tan 1996, Bennell 1996).

skills are now required, compared with inland regions where basic literacy suffices for traditional agricultural work.

UNDP’s *1997 Human Development Report* notes that adaptation to changing market conditions and the shift toward more sophisticated exports requires a sufficient pool of basic skills in the workforce, and

adds that “Today, competitiveness in trade and in attracting capital is more knowledge intensive than ever before” (p. 92). The impact of globalization, integration of the world economy, deregulation of markets, technological change, migration of labor, and the rate of accumulation of new knowledge all hasten the significant changes taking place in the technologies found in the labor markets in many countries and impose new demands on education. The knowledge-intensive aspects of labor, now well developed in a number of DMCs (especially in Groups 2 and 3, but found to a degree in all groups), require people with the highest levels of technical and managerial competence. To respond to such needs, increasing differentiation of education is necessary at higher levels, as well as availability of learning both with different foci and at different ages. Advanced learning opportunities for economically advanced DMCs will mean significant numbers of students enrolled in science, industrial and information technology, and management.

## **B. The Education Experience of Group 2 Developing Member Countries**

The recent evolution of education and broader economic conditions in the Group 2 DMCs (Table 1.8) stands in sharp contrast to that of many of the DMCs of South Asia. In the 1960s, all these economies were approximately at the same level of economic development. However, over the last three decades growth in per capita income in East Asia has been about four times as fast as that in South Asia. To some extent each government sets its own priorities and follows its own route to development. Thus, the histories of those economies that have undergone a sustained period of rapid economic growth may not represent the future of less-developed nations. Nevertheless, a brief review of the education experiences of the Group 2 DMCs can inform national and international discussions of education policies and practices, raise issues, and suggest directions and strategies worthy of examination.

The international research literature offers many, sometimes conflicting, reasons for the economic success of these five economies. Supporting national policies have been stressed, including outward-looking economic strategies, institutional reforms, land reforms, a reliable legal framework, political stability, savings and investment, and

good governance. Favorable demographic conditions produced an increasing and relatively healthy labor force and a decreasing population of school-age youth. Early and continued investment in education, forming a satisfactory threshold level of human capital accumulation, is also frequently cited as having a major impact on growth. “Primary education is the largest single contributor to the HPAEs’ economic growth rates” (World Bank 1995a, p. 5).<sup>16</sup> These HPAEs tended to emphasize “high quality primary education accompanied by a largely self-financed university system” (World Bank 1995a, p. 5). By contrast, as Haq (1997) points out, “South Asian countries spent much of their small budgets on subsidies to higher levels of education”.

The following is a summary of characteristics of Group 2 DMCs prior to or early on in the period of rapid economic growth (Adams and Boediono 1997).

- Each of these five economies, as it entered its period of sustained economic growth, already had in place a well-developed system of basic education that provided a minimum of six years of education for nearly all boys and girls. Some of them—e.g., Korea and Taipei, China—had developed extensive secondary and higher education systems early in their industrialization.
- National commitment to, and political support for, education were demonstrated in all of these economies through enabling laws, national policies, and adequate central financing. Government expenditure on education, however, was not necessarily high prior to economic takeoff, and in terms of education expenditure as a share of GNP, a significant variation can be found among them. However, government efforts were often complemented by private education institutions and by significant financial and labor contributions by parents at the local school level.
- All levels of government and education bureaucracies, including the school, community, and family levels, had high expectations for basic education. Teacher and pupil absenteeism was low, and teacher quality comparatively high. These economies tended to be pragmatic and opportunistic in their attempts to address problems of efficiency, quality, and equity in education. Innovations ran the technological gamut and covered a wide range of uses of personnel

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<sup>16</sup> The World Bank defines HPAEs as the high-performing Asian economies of Japan, the NIEs, Indonesia, Malaysia, and Thailand (World Bank 1993).

and facilities, including large classes. The education role of government in some of these five DMCs—e.g., Korea—incrementally changed as development proceeded. In the earlier period of growth, the central government acted essentially as a regulatory authority, mandating changes and reforms. Subsequently, the government acted more as a facilitator, sponsoring and advocating exemplary programs.

- The record of Group 2 DMCs in terms of provision of equal education opportunities to females has been mixed. Near-universal primary education for girls was quickly achieved. At higher levels of education, however, some disparity in enrollment rates has persisted and in postschool work opportunities, discriminatory practices favoring males remain the norm.

It should be noted that these rapidly expanding economies have not been without education, social, and economic problems. Following a sustained period of “catch-up”, educators in the NIEs (and to some extent in the rapidly growing economies of Southeast Asia as well) are increasingly questioning the quality of their education systems. There is little argument that school systems in the NIEs dramatically contributed to past growth by providing a solid human capital base for modernization. However, as these economies become more technologically oriented, new challenges are emerging. Can the schools better assist in students’ acquisition of higher-order skills and the development of creativity to sustain economic and social change? Moreover, at least some older adults are contemplating the price of recent successes. Visible along with the several attractive results of economic vitality are less attractive accompaniments, such as intergenerational contrasts in lifestyles and lack of communication, youth alienation and violence, intense competition for elite institutions, and overemphasis on consumerism. Nor has economic growth taken a linear upward path. A variety of conditions, including global competition and bad investments—with subsequent large debts by major industries—resulted in an economic downturn in the late 1990s.

Several attempts have been made to discern economic and education lessons from the experience of the Group 2 DMCs. The macroeconomic policies applied to human capital development, and the priority it received, have been applauded by international agencies and emulated by other DMCs. However, a complete replication of the experience of any of the Group 2 DMCs is, of course, impossible.

## C. Education and Poverty Reduction

There is an old proverb that predicts “a rising tide lifts all boats.” Family income tends to be strongly associated with a reduction in the incidence of poverty. Likewise, economic growth is a powerful weapon against poverty, although growth does not necessarily eliminate poverty. As with education and economic growth, there is a two-way relationship between education and poverty. Family income has a strong positive association with education attainment, while “low earnings of the poor result partly from lower human capital endowments and partly from labor market discrimination” (Quibria 1994). Data from the Philippines, for example, indicate that children in poor and rural families have higher dropout rates and lower scores on achievement tests, in part reflecting inadequate access to textbooks and other educational resources (Gerson 1998). Poor communities also often find it difficult to recruit and retain quality teachers.

Poverty (measured by a percentage of the population below a “poverty line,” or by average household income) reduces the opportunity for education attainment and acquisition of education outcomes, e.g., advanced education and preferred employment. Tilak’s (1994, p. 122) analysis shows a clear correlation between poverty and illiteracy in Asia—i.e., the higher the percentage of poverty in a country, the lower the literacy rate. Tilak further concludes that almost 99 percent of the poor in Thailand have no education or less than middle secondary education; nearly all of the poor in Pakistan are illiterate; education and incidence of poverty are inversely related in Malaysia, with a large drop in poverty occurring between primary and secondary school graduates; and that poverty varies inversely with education, training, and household income in India (Tilak 1994, pp. 114–5). Although data are lacking for many DMCs on the percentage of population living in poverty, available data are consistent with other social and demographic indicators. For example, 53 percent of the population in Nepal lived on less than \$1 a day in PPP terms in 1995, with poverty rates in the other Group 5 countries unlikely to be below this level. By contrast, population-weighted estimates, using data from Table A1.1, indicate that roughly 13.5 percent of the total population in Group 5 countries are in poverty. In general, the proportion of the income-poor appears to be declining slowly in East and South Asia. But the “big five” in Asia—Bangladesh, India, Indonesia, Pakistan, and

PRC—have made impressive progress in reducing the number of people living in poverty in their countries (UNESCO 1997, p. 33).

Many of the poor are women. Although no single profile suffices to describe women in poverty, many poor females live in rural villages, are not active in the labor force, are illiterate or have a low level of education, have few marketable skills, and, as women, are subject to a variety of discriminatory laws and traditions that inhibit their opportunities for equitable participation in employment. Conditions vary across and within country groupings. However, no country has achieved full gender equity in the household, in education, or in the workplace. Indeed, in Group 6 DMCs, which are making a radical break with the past politically and economically, ethnic and religious traditions have resurfaced that are reducing female opportunities (Table 1.3).

Women participate less than men in labor markets, and wage rates for females are consistently lower than those for males. Women constitute the majority of unpaid family workers. Some increases in female labor force participation rates can be found in several DMCs and are attributed to several factors, including social and cultural transformations in societies that have altered women's attitudes; economic development; changes in family structure; and increases in education. Given the conditions of limited labor force involvement, self-employment may be the only realistic option for many urban women (and indeed men). Thus, policies to improve the productivity of self-employed and unpaid family workers are needed, as are efforts to create more employment opportunities to enable them to become wage earners.

The link between education and employment is not immediate: many factors mediate this relationship. Nonetheless, the provision of schooling and policies determining how education opportunities are distributed across social groups, clearly has far-reaching effects on opportunities for productive work. As noted below, schooling (particularly for girls) is also associated with changes in intra-family dynamics, increased access to information, better health and sanitation, and increased investment in subsequent generations (see, for example, studies in Schultz 1998). Education can thus contribute to the reduction of poverty, broadly defined. At the same time, the influences of education may not be immediately apparent. In some cases, the lag may be relatively short (i.e., the time required for poor individuals to find more profitable employment or entrepreneurial work). The benefits of

changes in family consumption and investment patterns, however, may only become evident in the next generation.

In considering the society-wide effects of expanding schooling provision at various levels, policymakers should also recognize that, at least in terms of employment outcomes, the marginal individual benefits of additional schooling tend to fall as increasing shares of the school-age population complete that level of attainment (Mingat and Tan 1996). In addition, particularly for the urban informal sector, debate persists as to the relative value of general education versus specific skills training (Lee 1998, Section 5).

Laws and policies supportive of equal opportunities for girls and women in the workplace are critically important but may not be sufficient to alter inhibiting gender traditions and culture. Governments and international agencies committed to gender equity should vigorously encourage equitable employment conditions at all institutional levels, from the family to the state. Within the education sector, strategies are necessary to promote more women to decision-making roles. The potential for both genders to escape poverty will increase over time as the status and education level of girls and women improve (United Nations 1991, World Bank 1994c).

In a study on education reform in Taipei, China, which extended tuition-free schooling through the junior high-level, Spohr (2000) finds evidence that girls' schooling has broad empowerment effects, and increases the likelihood that, as adults, they will hold formal sector wage jobs and provide kindergarten schooling for their children. Likewise, studies in Schultz (1998) find a strong link between females' schooling and later investment in children's education, household health and nutrition, sanitation, and other outcomes. Such findings suggest that the status and education level of females can exert particularly strong intergenerational effects, and are thus crucial for reducing poverty.

## **D. Education, Social Change, and Social Cohesion**

In addition to traditional economic measures, another language and new concepts have entered the discourse on national development in recent years. The newer terms include poverty reduction, social justice, environmental sustainability, human rights, and empowerment. This extended conceptualization of development is being translated into a

larger range of policies and programs to address new human and social dimensions. These changes are recognized by international agencies whose priorities focus increasingly on improving individual competencies and building institutional capacities, rather than concentrating only on physical infrastructure.

Social changes may be seen as integral to, a prerequisite for, or a consequence of, economic development. Industrialization and globalization are making changes at the individual, family, and workplace levels. Gender has emerged internationally as a social and political issue, and questions are being asked by those concerned with gender equity about what rules govern access to, and control over, resources and labor, and how definitions of rules, rights, and obligations are reinforced and, on occasion, openly challenged. For example, policies and macroeconomic changes may affect intra-household political economy, differentially affecting household members and changing their status and role within the family.

Information and education are two ingredients for helping individuals and institutions participate in social change. Economies that rank comparatively high in circulation of newspapers and numbers of radios and television sets per 100 inhabitants tend to be more economically and educationally advanced. Among the DMCs, circulation of daily newspapers is extremely low in all groups, with the exception of Group 2 DMCs. Few data are available for Groups 5, 6, and 7. Groups 1, 3, and 4 cluster as a grouping distinct from Group 2, at a daily newspaper circulation ranging from one to four per 100 inhabitants, while Group 2 has a daily average circulation of 41 newspapers per 100 inhabitants. Most of the countries of South Asia (data are missing on three) have a daily circulation ranging from one to three per 100 inhabitants. Group 2 has a coverage of 32 television sets per 100 inhabitants, more than twice the average of any other group. Groups 1, 3, and 4 present a range of 6.5 to 15 television sets per 100 inhabitants. Generally, the number of television sets per 100 inhabitants is higher than the circulation of newspapers. Groups 4 and 5 cluster at the lower end, with little intragroup variance, but considerable variation on this indicator is found within other groups.

The social objectives for education are often ambitious and may include for students: developing a critical orientation toward institutions and social problems; eliminating discrimination and reducing elitism; promoting national unity; learning to work cooperatively with others; resolving conflicts nonviolently; and developing self-reliance. National

and family education objectives suggest that learning should be more than examination results on standardized achievement tests. Such tests, at best, measure a small fraction of acquired knowledge and hardly relate to many of the values, beliefs, and traditions that families and societies wish to perpetuate. Education may be seen as self-development or skills to cope with a wide variety of external problems, including the productivity of labor. As education systems develop, the education process may be expected to turn its attention to higher-order goals, such as problem solving and creativity, which themselves are processes and are seen as more enduring and widely applicable forms of learning.

Major education changes and reforms reflect the social, cultural, religious, and political contexts and traditions of a particular country. Extending the length of basic education and responding to demand for secondary and higher education are often stimulated as much by motivation to build political capital as a concern for improved human capital. However, education changes are also initiated through the regular processes of particular education bureaucracies in their attempts to adapt and improve the functioning of the system. (See the eight country sector studies for further information on this point.<sup>17</sup>) Formal education cannot eliminate problems associated with social and economic change, or even fully prepare the population to cope with these changes. However, an effective, equitable system of formal and nonformal education can promote intergroup parity (rural-urban, male-female), develop shared appreciation, bring school and home closer together, and increase community-level sharing of decisions affecting youth. Carnoy (1995) suggests that there are two opposing social views of education. One stresses capital accumulation, the other social equality: "There is an inherent conflict between schooling's role in preparing labor for a modernizing economy and its role in equalizing opportunity and providing social opportunity".

Carnoy's analysis may be valid, and much international literature justifies the priority on basic education on grounds of its contribution to productivity. However, shifts in priority from higher to lower levels of education can also be defended on equity and cultural grounds, e.g., social mobility. Emphasis on basic education allows the lowest-income groups education and social access. This priority further allows the targeting of remote areas and ignored populations (Lee 1998).

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<sup>17</sup> The eight country sector studies are: People's Republic of China (NCEDR 1997); Indonesia (OECD 1997); Kyrgyz Republic (RIHEP 1997); Nepal (RCEID 1997); Pakistan (PIDE 1997); Papua New Guinea (INA 1997); Philippines (DAP 1997); Viet Nam (NIED 1997).