COMMENTARY

Make secondary education universal

The time is right to push global learning beyond primary-school level, says **Joel E. Cohen**. The benefits could include a dramatically smaller increase in world population by 2050.

R. GILING/STILL PICTURES

Next week, the representatives of the countries that fund the World Bank's programmes to promote universal education in developing regions will hold a planning meeting in Oslo. These leaders, and the developing countries they support, should make global secondary education a major objective.

Social, political and economic arguments for the importance of education to societies and individuals are well known[1]. For example, in developing countries, every additional year of schooling increases an individual's income, on average, by 10% or more. Secondary education is a minimum prerequisite for creating the new technologies that developing countries need. These are good reasons to provide access to high-quality education for at least 10–12 years. But other demographic and environmental arguments deserve far more public attention than they currently receive.

Secondary education increases people's capacity and motivation to reduce their own fertility, improve the survival of their children, and care for their own and their families' health. Education promotes a shift from the quantity of children in favour of the quality of children. This transition reduces the future number of people using environmental resources and enhances the capacity of individuals and societies to cope with environmental change.

Earth's population is growing. The United Nations Population Division projects, as a medium scenario, that there will be 9.2 billion people by 2050 if fertility continues to follow its current declining trend (Fig. 1). If women have, on average, half a child more, or half a child less, per lifetime than assumed in that projection, world population in 2050 could be as high as 10.8 billion or as low as 7.8 billion. Thus, a difference in fertility of a single child per woman between now and 2050 alters the 2050 estimate by 3 billion, a difference equal to the entire world population in 1960.

Secondary education has the potential to influence that outcome dramatically. Although there are other factors at work, in many developing countries, women who complete secondary school average at least one child fewer per lifetime than women who complete primary school only[2] (Fig. 2). In Niger in 1998, for example, women who completed secondary education had 31% fewer children (on average, 4.6 per lifetime) than those who completed only primary education (6.7). In Yemen in 1997, women who completed primary school had 4.6 children on average whereas women who completed secondary school had 3.1 children on average. In some sub-Saharan African societies, lifetime fertility is reduced only among girls who have had 10 or more years of schooling[3]. But different societies have different thresholds for reaping the demographic benefits of reduced fertility and lower population growth.

Promisingly, a woman's fertility decisions are influenced not just by her own education level, but also by that of the reproductive-age women around her. In one study, for clusters of 25 women of reproductive age in 22 countries of sub-Saharan Africa, higher average levels of education for the women around a given individual reduced her birth rate, independent of urbanization and her individual education level[4]. Ignoring this effect, if one were to increase education from the region average level of 3.8 years of schooling to that of, say, Kenya (6.9 years) it would lower the average total fertility rate for these countries by 0.52 children. Taking into account the effect provided by educated clusters of women lowers the predicted fertility by nearly twice that. Again, education of the surrounding community reduces the total fertility rate only when the average length of education reaches four or more years, so minimum thresholds of education are required to reap the benefits of an educated social milieu.

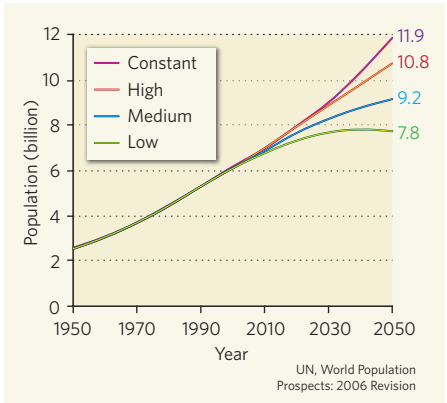

Figure 1 | Population estimates. A difference of one child per woman from now until 2050 could mean a difference of 3 billion to the global population.

Focus on the children

One of the mechanisms by which education leads to lower fertility is likely to be reductions in child mortality. Parents who are more confident of the survival of their children have reduced incentives to have many children. And the community's level of education contributes to improved survival in addition to influencing fertility[5]. Moreover, because better education in youth is associated with better health in old age, an investment in educating young people will yield reduced disability as populations age[6].

Achieving universal secondary education will be difficult. Worldwide, among young people aged 15–24 years in 2000, more than one-half completed primary school but fewer than one-quarter completed secondary school[1].

Fewer girls than boys get secondary schooling. In 2000–04, the percentages of girls and boys in the appropriate age groups who were enrolled in secondary school were, in Benin, 17% and 38%; in Ethiopia, 16% and 28%; in Yemen, 29% and 65%; in India, 47% and 58%, respectively[7]. The deficits in schooling are concentrated in south Asia and sub-Saharan Africa. By contrast, in the more developed countries, primary completion rate exceeded 80% and secondary completion rate was close to half.

The challenges are set to increase. The number of children aged 5–14 years, all of whom will need secondary education, is predicted to rise from 1.2 billion in 2000 to a peak of less than 1.3 billion around 2025 and then decline gradually[8] to 1.2 billion by 2050. This relatively stable number conceals important differences. During this half century, the number of children aged 5–14 years will grow dramatically in the least-developed countries — with the least means to fund education — whereas the numbers of children will be steady or declining almost everywhere else.

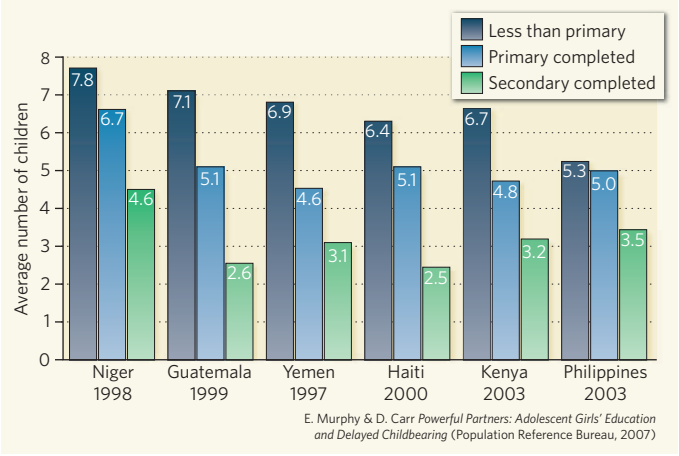

Figure 2 | Education and children. In many countries at early stages of economic development, women who complete secondary school average at least one child fewer per lifetime than women who complete primary school only. The absolute levels of fertility vary widely from country to country.

Pinning down costs

The costs of providing secondary education are difficult to estimate for three reasons. First, the cost per child currently in school differs from that for children not currently in school, who are more likely to be in remote locations, poor, of minority cultures and disadvantaged. Second, the quality of some schools is so inadequate that, even if education is available, parents may choose not to send their children. Third, the means of education are changing, moving from conventional schools to include information centres, homes and places of work. The costs of these and other unconventional means of education are unknown.

In developing countries, the average cost per child per year of providing secondary schooling to all eligible children is estimated at $198 (in constant 2002 US dollars). In low-income countries, the average annual cost per child is $125, whereas it is $912 in the middle-income countries[1].

The aggregate annual costs of universal secondary schooling depend on how quickly universal enrolment is to be achieved and on the repetition rate — the proportion of students who repeat a grade each year. The estimated cost under present repetition rates (which average about 9% but vary widely) to achieve universal secondary education immediately would be $62 billion annually. Although unrealistic, the figure provides a useful upper limit. If the expansion of a full secondary education to 90% of children worldwide is stretched out over 25 years and repetition is reduced to 7%, then the average annual costs for the first five years are $5.4 billion. In this scenario, much of a generation would miss the benefits of secondary education and the demographic impacts would be smaller. Shrinking the timeline to 15 years with no change in present levels of repetition, the average annual cost for the first five years would be $12.5 billion, and that number would go up in the remaining ten years. Whether the world can afford additional annual costs of up to $70 billion depends on who pays. That amount would be approximately 7% of the total gross national income of all low-income countries but less than 0.3% of that of all high-income countries.

Cost is not the only obstacle[9]. Families may value more highly the time children spend working for income or doing chores. Education competes for scarce national resources with roads, medical care and defence. Returns on investment in education are difficult to measure persuasively. Internationally comparable data on the quality of primary and secondary education are scarce or absent, so incentives to provide education of high quality are limited. The benefits of schooling accrue too slowly to boost political incumbents. Political violence disrupts schooling. Cultural discrimination inhibits schooling for girls and minorities (linguistic, religious or ethnic). The history of education in a country affects the success of externally proposed solutions to educational deficits.

"Universal, high-quality primary and secondary education is achievable within 25 years."

To prepare to deal with these challenges, the international community needs to make a commitment now to high-quality secondary education for all. This political vision needs to be backed with more money and higher priority for education from donor and developing countries. Educators need to improve effectiveness and economic efficiency of education by using data on what and how children learn and on alternative pedagogy and technologies. Case studies of countries that perform well with the funding available to them are needed, region by region. The diversity of educational systems in different countries needs to be recognized in aid policies and educational assessments. And the goals of primary and secondary education, whether to foster nationalism and religious fundamentalism or to embrace diversity, need to be discussed nationally and internationally[10].

For the next several decades, virtually all rises in numbers of people will occur in the cities of the less-developed regions[8]. This vast shift presents an opportunity: it will be easier to reach the added children, and to attract and retain their teachers. Universal, high-quality primary and secondary education is achievable within 25 years. Educating all children well is a worthwhile, affordable and achievable strategy to develop people who can cope with problems foreseen and unforeseen. ■

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