

# Education of women and socio-economic development

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**Abstract:** This paper presents the findings of some recent research on the social and the economic benefits of female education and considers the pathways through which women's schooling leads to social gains. These findings may provide insights as to why Bahá'u'lláh stressed the importance of women's education.

## Introduction

In the Bahá'í teachings there are two extraordinary statements about the education of women. First, that women's education is of greater importance than men's education and, secondly, that not until the equality of opportunity in education for the two sexes is established will the foundations of war be removed.<sup>(1)</sup> These challenging ideas deserve study in order for us to understand their meaning and ramifications.

The principle of sexual equality in education - one facet of the general principle of the equality of the sexes - was revolutionary when given by Bahá'u'lláh in the mid 1800s.<sup>(2)</sup> It was set forth more than half a century before western thought added sexual equality to its list of rationally-based moral principles of relevance to political life, such as democracy, secularism, and the rights of the individual, and long before it became enshrined in numerous national and international documents as a politically correct, universal value.

The signs of the rapid convergence between the ideas of the secular world and the teachings of the Bahá'í Faith are abundant. In the political and economic spheres, for example, this is conspicuous presently in the enthusiasm for global governance among thinkers, academics, and international institutions.<sup>(3)</sup> It can also be seen in the acceptance, among many influential opinion-makers, of the need for a world currency and for international economic policy coordination.<sup>(4)</sup> Many other ideas and institutions prescribed by Bahá'u'lláh in the last century have been embraced by the world in the past few decades. The recognition of the wisdom of the Bahá'í emphasis on women's education is a recent addition to the list of areas of convergence.

## Women's status

Women account for roughly half the world's population, perform two-thirds of the hours worked, receive one-tenth of the world's income, and have less than one hundredth of the world's property registered in their names.<sup>(5)</sup> Female deprivation is particularly acute in the developing countries with high levels of poverty, though in affluent nations women also suffer low status due to conservative attitudes.

The most dramatic and telling statistic of women's status is the sex-ratio in the population, that is, the number of females per 100 males. It is a well-known fact that life-expectancy at birth favours females. This appears to be a biological constant. Yet, the proportion of females to males varies greatly across different regions of the world. For example, the proportion of females is 52.5% in the industrialised world but in sub-Saharan Africa women account for only 51% of the population. The figures are 48% of the population in East Asia and less than 47% in South Asia. From figures such as these, economist Amartya Sen<sup>(6)</sup> has estimated that there are 100 million women "missing" in the world. Sen describes the fate of these women as "one of the more momentous problems facing the contemporary world." This is a moral as well as a development-related problem.

The overwhelming reason why 100 million women are missing in the world is excess female mortality. In the developed world, women outlive men by an average of six years; by contrast, in large parts of South Asia, men can expect to live longer than women.

Differential mortality is only the most dramatic manifestation of systematic discrimination against females. Women and girls are more likely to be impoverished than men and boys. Also, studies have found that girls are fed less than their brothers and that their illnesses are less likely to be treated. It should come as no surprise then that, in most regions of the world, female literacy and education fall far short of male literacy and education, as shown in Table 1. While poverty and cultural factors must surely influence the extent of female deprivation, they do not explain it entirely. For example, sub-Saharan Africa is one of the poorest regions of the world but the problem of excess mortality of females is much less severe there than in South Asia.

<b>Region</b>	<b>Adult Literacy</b>	<b>Primary enrolment</b>	<b>Secondary enrolment</b>	<b>Tertiary enrolment</b>
Nordic countries	—	100	101	121
OECD	—	99	98	103
All Developing Countries	73	88	78	70
Least Developed Countries	57	84	67	44
Arab states	61	92	77	65
East Asia	80	96	79	73
Latin America and Caribbean	97	98	98	70
South Asia	55	75	60	48
SE Asia and the Pacific	90	97	95	73
sub-Saharan Africa	66	85	72	46

**Source:** Human Development Report 1995, Annex table A2.6,

page 68.

**Notes:** The figures relate to women's education in relation to men's, the index for men being 100. Thus, for example, in least developed countries, the adult literacy rate for women was only 57% that of men, while in Latin America and in the Caribbean, it was 97% that of men.

## **The economic and social gains from female education**

Equality of the sexes - in terms of men and women's command over resources, their access to education and health, and in terms of freedom to develop their potential - has an intrinsic value in its own right. The equal treatment of the sexes for intrinsic reasons is, in the parlance of welfare economics, the equity reason for reducing gender-imbalances. A second important reason in favour of reducing gender-imbalances is what might be termed the instrumental reason, that is, the gains to be had from granting equality. For example, if with equal education, women's contribution to economic development (or to other desirable goals) is comparable to men's, then reducing gender-imbalances in education will enhance women's capacity to contribute to economic progress. This is the efficiency reason for reducing gender inequality in areas where women are currently deprived. Both the intrinsic (equity) and instrumental (efficiency) based reasons for gender equality are emphasised in the teachings of Bahá'u'lláh.<sup>(7)</sup>

### *Economic efficiency*

Human capital theory suggests that just as physical capital (machines) augments people's economic productivity, so human capital acquired through education improves the productivity of individuals. Studies of the sources of economic growth demonstrate persuasively that education plays a major role as a factor in the rise of output per worker. The new growth theories in economics place education and human resource development at the centre of their explanation for long-term economic growth.<sup>(8)</sup> Confidence has grown in the belief that education affects economic growth because many studies have shown the positive correlation between a country's educational effort and its economic status, and causality has been attributed to education. Prominent examples of this are the so-called "miracle" economies of East Asia.

If female schooling raises human capital, productivity, and economic growth as much as male schooling does, then women's disadvantage in education is economically inefficient. Research world-wide shows that, in general, the economic benefits from women's education - calculated as the economic rate of return to education - are comparable to those from men's education.<sup>(9)</sup> Thus, from the point of view of economic efficiency, the gender gap in education is undesirable.

### *Social efficiency*

While the economic benefits of educating girls are similar in size to the economic benefits of educating boys, recent findings suggest that the social benefits from investing in female education are far greater than those from investing in male education. Specifically, female education has powerful effects on the total fertility rate (and hence on population growth), the infant mortality rate,<sup>(10)</sup> the female disadvantage in child survival, and on child health and nutrition. By contrast, statistical analyses show that male schooling has relatively much smaller effects on these important social outcomes.<sup>(11)</sup>

For example, a recent study by Subbarao and Raney (1995)<sup>(12)</sup> using national aggregate data from 72 countries regressed the total fertility rate of 1985 on the male and female secondary school enrolment

rates lagged by 10 years, i.e. on the enrolment rates of 1975. The objective was to examine the effect of education on fertility, controlling for a number of other factors such as family planning service provision and per capita income. The results show that female secondary school enrolment (lagged by 10 years) is inversely correlated with the total fertility rate but that male secondary school enrolment shows no strong correlation. Similarly, a regression of the 1985 infant mortality rate on 10 year lagged male and female secondary school enrolment rates shows that while female education is associated with lower infant mortality, male education has no statistically significant effect.

A similar exercise by Murthi, Guio, and Drèze<sup>(13)</sup> for India using district level aggregated data shows that whereas the district female literacy rate had a strong inverse correlation on the district average total fertility rate, on under-five child mortality rate, and on the female disadvantage in child survival, the district male literacy rate had no significant effect on each of these outcomes. Moreover, district per capita income, urbanisation, and the spread of medical facilities were not statistically significant determinants of total fertility rate. While these latter three variables do have positive effects on child survival levels, their effects were relatively small compared with the powerful effect of female literacy.

Numerous studies have been carried out using household-level data that confirm the findings from studies using aggregate data. To cite one example, an examination of the determinants of fertility in fourteen countries of sub-Saharan Africa by Ainsworth, Beegle, and Nyamete (1996)<sup>(14)</sup> using household survey data shows an inverse correlation between female schooling and fertility in virtually all of the countries, though the relationship is non-linear: female primary schooling has an inverse relation with fertility in about half of the countries only but female secondary schooling is universally associated with lower fertility, and the strength of the correlation increases with increasing years of schooling. Among ever-married women, husband's schooling has no significant relation with fertility in about one-third of the countries. Moreover, in cases where both women's and men's schooling matter, women's schooling exerts a much larger negative effect on fertility than men's schooling.

Simulations show that the benefits from expanding female education are far greater than the benefits from other public interventions such as improving family planning service provision or increasing the number of physicians in the population. For example, Subbarao and Raney (footnote 12) found that a doubling of the 1975 average secondary school enrolment ratio in the 72 sample countries from 19% to 38% would have reduced the average number of births in 1985 by 29% compared to the actual number in 1985, whereas a doubling of the family planning provision would have reduced the number of births by only 3.5%.

The gains in terms of deaths averted are also striking. Simulations predict that doubling the female secondary school enrolment ratio from 19% to 38% in 1975 reduces infant deaths in 1985 by 64% while doubling the number of physicians reduces the number of infant deaths by a mere 2.5%. Doubling per capita income (or GDP) from the average of \$650 in the 72 sample countries to \$1300 would have no effect on the number of infant deaths!

Subbarao and Raney also reported data on desired family size from the World Fertility Survey for 37 countries. Econometric analysis of this data suggested that after controlling for per capita income, female secondary school enrolment was a highly significant determinant of desired family size (and therefore of the total fertility rate and population growth rate). Male school enrolment ratio, however, had no impact on desired family size.

Finally, a large body of microeconomic evidence shows that increases in women's education generally lead to increases in their labour force participation as well as in their earnings.<sup>(15)</sup> Educated women's greater participation in labour market work and their higher earnings are thought to be good for their own

status (economic models say "bargaining power") within the household, and are good for their children because it appears that a greater proportion of women's income than men's is spent on child goods.<sup>(16)</sup> On the down side, it may be thought that educated women's greater labour force participation takes them away from their children for longer periods of time (than is the case for uneducated or less educated women) and this may disadvantage educated women's children through neglect. At present this is a relatively unresearched issue. However, limited evidence suggests that children whose mothers work have just as good or better educational outcomes than children whose mothers do not work.

The findings in the studies cited above are corroborated by international as well as national studies, and they demonstrate the powerful role of women's agency and women's educational empowerment in reducing desired family size, fertility, population growth, child morbidity, child mortality, and gender-bias in child mortality, while at the same time showing that men's education mattered comparatively less to these important social outcomes.

### **Pathways through which education affects social outcomes**

Why should education of females significantly reduce the fertility and mortality rates and improve child health? What are the pathways through which girls' education leads to these social gains? Bahá'ís have tended to focus importantly, though not exclusively, on the value of an educated woman for the upbringing and education of her offspring. This benefit is now prominently recognised outside the religion.

Economists tend to focus on the role of incentives as a way of understanding phenomena. They reason that female education lowers the fertility rate by reducing desired family size and that this, in turn, is because education raises the value of women's economic activities by raising the labour market rewards from going out of the home for work. In other words, the opportunity-cost of staying at home for child bearing and rearing increases as women become more educated and, so, educated women desire smaller families. Education may also change women's preferences about the quantity versus the quality of children, with educated women choosing fewer children but of better "quality". Moreover, as mentioned earlier, recent research suggests that a greater proportion of women's cash income than men's is spent on child goods,<sup>(17)</sup> so that women's education and the consequent increase in women's income would appear to have particular benefits for child quality.

Education of women improves child health because of educated mothers' greater knowledge of the importance of hygiene and of simple remedies. All this lowers infant mortality, which in turn means that a family does not need to have a large number of children in order to hedge against the possibility of premature death of some children. Further, it appears that education of females increases the age at marriage (or at cohabitation) and through this delay, lowers the total fertility rate, i.e. number of children ever born to a woman.<sup>(18)</sup>

Finally, some studies find that mother's education has a greater impact on the educational attainment and school achievement of children than father's education. This is plausible given the greater interaction between mother and children in most families since, in most countries, fathers are usually the main earners in the household. In this way, education of females contributes more significantly (than the education of males) to increases in human capital, productivity, and economic growth not only in their own generation but also in the next generation.

### **Gender equality in education: a universal value?**

It appears that there is an increasing challenge to the principle of gender equality not only from religious

fundamentalists but also from a broader current, particularly in Asia, that questions the universality of the principle, contesting it as a "western value". For example, when a recent study found that Pakistan had forgone much economic growth between 1970 and 1985 because of its large scale failure to invest in the education of its females,<sup>(19)</sup> a large group of angry Pakistani economics academics called education of females a "western value" and argued that education of females had led to increased incidence of divorce, family breakdown and social problems in western countries. As Fred Halliday, professor of International Relations at London School of Economics, says, perhaps the most pervasive and difficult of all the moral issues confronting the world at the moment is that of universal versus particular values.<sup>(20)</sup>

Indeed, the Pakistani detractors who questioned the usefulness of women's education and claimed that it had wrought family breakdown in western countries might have a valid argument. Access to education *per se* is not sufficient; the content of education is also important, as emphasised in the Bahá'í writings. Could recognition that content of education is fundamentally important be the next stage in the convergence of secular and Bahá'í thinking?

### **The way forward**

In order to see how more girls can be educated, it is essential to ask what holds them back from gaining education currently. There are many reasons why women's education seriously lags behind men's education, particularly in developing countries as seen in Table 1. The most commonly cited is that in certain societies many parents continue to envisage a strict gender division of labour. If for most of her adult life a daughter will be a housewife, it seems pointless to educate her. The immense contribution that education can make to women's efficiency in child rearing and in domestic tasks is insufficiently recognised. In some countries, societal norms such as early age marriage or the dowry system militate against girls' education. But, most importantly, when people live on low incomes - as in rural areas of all developing countries - it is the mismatch between the costs and benefits of girls' schooling that causes the gender gap in education to persist. In most developing countries, where typically there is no social security or state pension, male children still provide old age support to their parents but female children do not, any benefits of a daughter's education being reaped by her in-laws. Thus the expenditure on boys' schooling results in benefits for the parents but not expenditure on girls' schooling. In other words, there is an asymmetry in parental incentives to educate sons and daughters.

These explanations of the gender disadvantage in schooling have important policy implications. First, they suggest the need for public education about the intrinsic and instrumental value of women's education. Such a policy step would aim to change conservative attitudes towards girls' schooling. Secondly, they suggest that public policy should compensate for the asymmetry in parental incentives to educate girls and boys by giving extra subsidies for girls' schooling. This makes sense because many of the benefits of girls' education are public benefits, i.e. they accrue not only to the educated individual and her family but also to society in general - for example, lower infant mortality and fertility rates. One further policy suggestion is that governments should improve the economic incentives for women's education by attempting to reduce job and wage discrimination against women in the labour market, for example, through stricter labour legislation. This would raise the economic returns to women's education. Evidence suggests that cultural inhibitions can be overcome if the labour market (i.e. economic) incentives for acquiring education are strong enough.

### **Summary and conclusions**

In this paper I have summarised the findings of recent research showing that the social gains from female schooling are generally far greater than those from male schooling. These findings have led, in recent years, to a widespread recognition of the importance of women's education, though the principle still

faces challenges from certain quarters. International agencies that provide development assistance to economically less developed countries have come to realise the momentous advantages of expanding girls' access to schooling and are now enthusiastically championing the cause.<sup>(21)</sup> This convergence of secular and Bahá'í thinking on a key issue like education is welcome indeed.

The main policy prescriptions of this paper are that governments and other organisations should attempt to educate people about the equity and efficiency benefits of female education and that public policy should encourage girls' access to schooling by extra subsidies in order to compensate for the asymmetry in parental incentives to educate sons and daughters in poor societies. I have also argued that education *per se* is not sufficient. It is clear that societies which have achieved universal education are currently extremely deficient socially despite their economic prosperity. The next step in the evolution of secular thinking will, it is hoped, be in the important area of the content of education.

## Endnotes

1. "The education of women is more important than the education of men... When all mankind shall receive the same opportunity of education and the equality of men and women be realised, the foundations of war will be utterly destroyed. Without equality, this will be impossible...." ('Abdu'l-Bahá, *The Promulgation of Universal Peace* [Wilmette: Bahá'í Publishing Trust, 1982] 175).
2. Indeed, the early Bahá'ís of Iran suffered persecution partly for their belief in this principle. For example, analysing the causes of the persecution of Bábís and Bahá'ís, Lord Curzon, a British diplomat in Tehran in the 1880s, notes that "the charge of immorality [against Bábís and Bahá'ís] seems to have arisen partly from the malignant invention of opponents, [and] partly from the much greater freedom claimed for women by the Báb, which in the oriental mind is scarcely dissociable from profligacy of conduct" (quoted in Shoghi Effendi, *God Passes By* [Wilmette: Bahá'í Publishing Trust, 1974] and taken from *A Question of Persia* by Lord Curzon of Kedleston). See the article on persecutions of Bahá'ís in this volume, page 1.
3. For example, see Paul Streeten's paper "Global Institutions for an Interdependent World," *World Development* (Sept 1989). Also, see "Global Governance for Human Development," Occasional Paper No. 4, Human Development Report Office, United Nations Development Programme, 1992.
4. For example, see the lead article "Get Ready for World Currency," *The Economist* (9 Jan 1988). See also contributions by Rupert Pennant-Rea (then Governor of Bank of England) and Fred Bergsten (Director of the Institute for International Economics) in "The Future Surveyed," *The Economist* (11 Sept 1993). Both authors believe in the inevitability of a world currency and in the idea that global co-operative economic management will become the norm in the next century.
5. Janet Momsen, *Women and Development in the Third World* (London: Routledge, 1991) 1-2.
6. Amartya Sen, "Women's Survival as a Development Problem," *Bulletin of the American Academy of Arts and Sciences* 43 (1989): 14-29. Also see A. Sen, "Missing Women," *British Medical Journal* 304 (1992): 587-8.
7. For instance, 'Abdu'l Bahá underlines the equity argument when he states that "men and women are equal in the sight of God and that there is no distinction to be made between them" (*Promulgation of Universal Peace* 174). The instrumental benefits of female education are also elaborated in many Bahá'í writings. For example, there is a strong focus on the beneficial effects of mother's education for the quality of her children.
8. The new or 'endogenous' growth theories initially set forth by P.M. Romer, "Increasing Returns and Long-run Growth," *Journal of Political Economy* 94 (1986): 1002-37; and R.E. Lucas, "On the Mechanics of Economic Development," *Journal of Monetary Economics* 22 (1988). See also

the subsequent vast literature sparked by these major contributions to economic growth theory. For example, see the *Economic Journal* (June 1996) for a collection of relevant papers.

9. See review of studies in T.P. Schultz, "Returns to women's education," chapter 2 in E. King and M. Hill (eds.), *Women's education in developing countries* (Washington D.C.: Johns Hopkins Press for the World Bank, 1993).
10. The total fertility rate (TFR) is simply the number of children ever born to a woman. In aggregated national data, the TFR of a country is the average number of children born per adult woman in the country. The infant mortality rate (IMR) is the number of children - per thousand born alive - that die before reaching the age of one.
11. See J. Strauss and D. Thomas, "Human Resources: Empirical modelling of household and family decisions," in J. Behrman and T.N. Srinivasan (eds.), *Handbook of Development Economics*, Vol III, 1995.
12. K. Subbarao and L. Raney, "Social Gains from Female Education: A Cross-National Study," *Economic Development and Cultural Change* 44.1 (October 1995): 105-128.
13. M. Murthi, A. Guio, and J. Drèze, "Mortality, fertility, and gender bias in India," in J. Drèze and A.Sen (eds.), *Indian Development: Selected Regional Perspectives* (Delhi: Oxford University Press, 1997).
14. M. Ainsworth, K. Beegle, and A. Nyamete, "The Impact of Women's Schooling on Fertility and Contraceptive Use: A Study of Fourteen Sub-Saharan African Countries," *World Bank Economic Review* 10.1 (January 1996): 85-122.
15. For a recent example of such a study, see Geeta Gandhi Kingdon, "Does the Labour Market Explain Lower Female Schooling in India?" Development Economics Research Programme, STICERD Discussion Paper No. 1 (New Series), London School of Economics, January 1997.
16. For example, see John Hoddinott and Lawrence Haddad, "Does Female Income Share Influence Household Expenditures?" *Oxford Bulletin of Economics and Statistics* 57.1 (1995): 77-96. This study finds that, in Cote D'Ivoire, raising wives' share of cash income increases the budget share of food and children's and adults' clothing, and reduces the budget share of alcohol and cigarettes.
17. See previous footnote.
18. For example, see Simon Appleton, "How Does Female Education Affect Fertility? A Structural Model for Cote D'Ivoire," *Oxford Bulletin of Economics and Statistics* 58.1 (February 1996): 139-66. It may be thought that education of females would cause them to recognise the advantages of choosing breast rather than bottle-feeding, or to increase the duration of breast-feeding, thereby suppressing fertility during the period of breast-feeding. However, Appleton (*op. cit.*) found that, in Cote d'Ivoire, educated women chose shorter duration of breast-feeding, leading to increased fertility.
19. N. Birdsall, D. Ross and R. Sabot, "Underinvestment in Education: How Much Growth Has Pakistan Forgone?" *Pakistan Development Review* 32.4 (Winter 1993): 453-92.
20. Fred Halliday, "The New World and its Discontents," Discussion Paper No. 4, Centre for the Study of Global Governance, London School of Economics, 1993.
21. For example, Lawrence Summers, Chief Economist at the World Bank, states "educating girls quite possibly yields a higher rate of return than any other investment available in the developing world" (see "The Most Influential Investment," *Scientific American* [August 1992] 108). Similar statements appear in many World Bank documents.