The Role of Education in Development

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Introduction

The potential for education to engender development and therefore to provide individuals and communities with opportunities to lift themselves out of poverty is, correctly, stressed throughout contemporary development literature. From the Millennium Development Goals (MDGs) to the Education For All (EFA) initiative it is clear that education has been placed at the forefront of the fight against poverty. This paper will highlight and analyze the importance of this role but will also probe and critique present approaches and policies which attempt to use education as a means to reduce poverty.

It is aimed that, after reading this paper, the reader will gain a broad understanding of where the developing world stands today with regard to education and of the gaps that exist between developed and developing countries in education (it will be argued that this gap is greater than is commonly envisaged merely by looking at comparative enrollment and attainment ratios). Furthermore, this paper will outline and discuss the complexities and nuances which must be considered in designing and implementing effective education policies.

More specifically, it will be argued that present policies and dialogue with respect to education in the developing world tend to over-emphasize the value of quantitative and conveniently measurable goals such as increasing net enrollment rates, resource levels, teacher training and general education expenditure; this is at the cost policies which focus on skills and proficiencies fostered in the learning process and which have greater potential to generate long-term economic and social gains.

Part One of this paper will establish the true nature of the relationship between education and macroeconomic growth, showing that internationally agreed upon goals and initiatives which focus on quantifiable measures in education miss a large part of the picture. It will also provide the reader
with an understanding of the gaps in education between developed and developing countries, which are significantly larger than is revealed through any quantitative assessment. Part Two will then outline the potential losses to society involved with a failure to place qualitative aspects of education at the forefront of development policy. The third part of the paper will then discuss finding of available literature on quality is best achieved in education.

It is important to understand that the issue of educational quality is a multi-dimensional and complicated one. It is not easily measurable and this is, no doubt, largely responsible for its frequently being neglected in policy dialogues. In this paper, student outcomes as measured by international student achievement tests are used as a proxy for quality. However, the need to consider issues such as parity and equality are paramount in any assessment of educational quality; these aspects are key components of any quality educational system. Therefore, they will be considered in turn, and the cost of failing to provide equality, as well as parity in education will be given due attention and recognized in their importance to the issue of educational quality.

**Part 1  Education and Economic Outcomes**

**1.1 Education and Macroeconomic Outcomes**

Studies have generally shown a positive relationship between educational attainment (commonly measured by average years of education of the population in question) and long-term real GDP per capita growth. Cohen and Soto find a significant positive relationship between education and growth (more on this study shortly), as do Stevens and Weale and Nehru et al. (as cited in Hanushek and Wobmann 2007 p20-22.). This is in line with endogenous growth models in economics literature which stress the role of human capital in promoting long-term growth. Thus, it is expected that by expanding education enrolment and attainment, in line with MDG 2 and the EFA initiative,
long-term economic gains will occur, thereby ensuring greater economic well-being for future
generations living in today’s developing countries.

1.2 A Note of Caution

Unfortunately, the reality is unlikely to be so simple. Initially, it’s important to understand the
econometric shortcomings of the above cited studies and others which report a positive relationship
between educational attainment and growth. A couple of points must be outlined to this end.

Firstly, it’s not clear in which direction the causality is. Countries with higher levels of initial
school attainment are likely to have been relatively wealthier than those with lower levels and,
therefore, more able to carry out expenditures on infrastructure, public health, research and
development and so on needed to ensure high future growth rates. Consequently, results of the
impact of present education levels on future growth rates may have been exaggerated in some cases.

This hypothesis of reverse causality has been supported by Francis and Iyare (2006) who found
evidence of causality running from income to education in Jamaica (that is, higher income led to
higher growth, not the other way around as is commonly supposed).

Secondly, a large number of studies seeking to establish a relationship between education and
growth could have suffered from omitted variable bias. By failing to control for variables such as
openness to trade, protection of property rights and internal security it is not unreasonable to
suggest that the effects of such variables could have been absorbed by the education variable,
thereby over-estimating the strength of the relationship. As before, this may have led to the extent
of the relationship between education and growth being overstated (more on this in 1.3).
Subsequently, it must also be noted that it is not the case that the vast volume of research literature investigating the relationship between education and economic growth has unanimously shown a positive relationship. Indeed, there have been plenty of mixed and ambiguous results. Examples include Oulton and Young (1996) who failed to find a significant relationship between education and growth and Berthelemy et al (as cited in Oulton and Young, 1996) who, similarly, found no evidence of a positive relationship.

What can be concluded then? What is the true nature of the relationship between education and growth? To answer this question it is necessary to adjust the focus slightly. Clearly, the overriding purpose of education is to endow students with the necessary skills and proficiencies to be productive members of society in the future, thereby adding to a nation’s stock of human capital. Logically, it follows that an education system which fails to sufficiently empower students in this regard will fail to positively impact on the future well-being of students and, by extension, society as a whole. Thus, by measuring the success of schooling with respect to its ability to equip students with the skills need to be future productive members of society, that is the quality of schooling, a clearer understanding of the relationship between education and growth can be gained.

**1.3 Skills and Growth**

**1.3.1 Quantity vs Quality**

Skill levels of students from different countries can be conveniently gauged and compared through international achievement test results. In many studies these test scores act as a proxy indicator for education quality between countries. Shortcoming in this approach obviously exist; the influence of non-school factors such as extra-curricula activities and parental involvement on student test performance is ignored, similarly, the degree to which material taught may be deemed to be relevant given specific idiosyncratic differences in student locations is not taken into account, nor is
the extent of gender bias in enrolment and teaching (the latter two issues will be discussed later in this section). However, in the absence of an indicator able to take account of all of these complex and difficult to measure issues, it can be recognised that international achievement test scores serve as a reasonable indicator of the success of schools in equipping students with the cognitive skills needed to be productive workers in the future.

Data on international student achievement tests from fifty countries and economic growth rates from the period 1960 to 2000 are available in a study conducted by Hanushek and Wobmann (2007, page 6-7)). The average rate of annual real GDP growth over the forty year period is regressed against average annual test scores in 1960. The results are instructive: national average test scores that were one standard deviation above the mean were associated with a growth rate that is 2% above the sample mean over the forty year period. The significance of this result is not to be underestimated, as any growth economist will testify, a 2% higher growth rate maintained over a period of forty years is potentially colossal in its impact on the economic fortunes of a nation (for example, this almost precise growth rate has transformed South Korea from a relatively poor nation in 1960 into one of the economic powerhouses of the 21st century).

Moreover, when institutional factors such as openness to trade and security of property rights were added to the above model, the relationship between quality (as measured by test scores) and growth proved robust, though of slightly smaller in magnitude (average growth rates over the period associated with a one standard deviation above the mean outcome in test scores were reduced from 2% to a still substantial 1.26%). Contrastingly, when these institutional factors were added to the quantity of schooling-growth model, the relationship between years of schooling and economic growth turned insignificant. Most revealing of all, when quality was added to the quantity of schooling-growth model, years of schooling became an insignificant determinant of growth. These results clearly demonstrate the relative importance of education quality in determining long-term economic fortunes when compared to quantitative factors.
1.3.2 The State of Education in the Developing World Today

Before proceeding further, it may be prudent to at this point to gain an appreciation of where the developing world stands today with respect to education. How large are the deficits between education in the developed and the developing world?

The Millennium Development Goals Report (2008) reported the net enrolment ratio in the developing world as a whole as being 88%. This compares to 96% in developed countries. An 8% differential (down from 18% in 1990) between developed and developing countries may be viewed as surprisingly small and indicative of solid recent quantitative gains in education by the latter. The gap is larger in Sub-Saharan Africa, which has a primary net enrolment ratio of 71%, but this figure is also drastically improved from 1990 when it stood at 54%. Currently 73 million children of primary school age are out of school in developing countries, down from 103 million in 1990. Overall then, progress looks to be too slow to reach MDG 2, but, quantitatively, clearly improvement are being made and there is reason for cautious optimism.

Crucially though, the above quantitative analysis tells only a small part of the story. By considering only easily measurable indicators such as primary net enrolment ratios (PNER) the true purpose of education and the degree to which it is being fulfilled is lost. Only through consideration and comparison of international achievement test results can one begin to gain insights into the differences in cognitive skills and, hence, human capital which are engendered in the education processes between developed and developing countries. As will be seen below, these results point to a gap that is far wider than that which is revealed in any quantitative assessment.

A score of 400 in international achievement tests is regarded as being the minimum for a student to be considered to be literate and numerate. In developed countries more than 90% of 15-19 year old
students are typically able to reach this mark (more than 97% in the Netherlands and Japan, the lowest reported developed country results were 80% in Greece and Portugal). The chasm between these figures and those reported in developing countries is immense, with the majority of the latter countries seeing under 50% of its 15-19 year old students reaching levels of basic literacy and numeracy. When these results are coupled with student drop-out rates between grades one and nine in developing country schools, it emerges that in many developed countries, less than 1 person in 10 reaches basic literacy and numeracy levels (Hanushek & Wobmann, 2007, page 13).

To gain an appreciation of the situation, consider the case of Ghana. In Ghana, 88% of children enrol in school at some point (that is 12% never enrol in any form of education). Half of these children progress through the grades to complete grade 9. However, with only 40% of grade 9 students able to achieve the minimum 400 score, this leaves Ghana with up to 95% of its population being functionally illiterate. The scope and consequences of this fact could never have been hinted at merely by looking at Ghana’s PNER which, at 75%, has shown signs of solid improvement and is above the Sub-Saharan average (Hanusheck & Wobmann, 2007, page 13).

Subsequently and as a consequence of the above analysis two key points can be understood. Firstly, the difference in education between the developed and the developing world is more alarming and more pronounced than is commonly recognised in large parts of development literature. Secondly, to focus solely on quantitative factors as stressed in the MDGs and the EFA initiative is to miss the core of the issues in education in development. This leads neatly to the second part of this report which will outline and discuss the consequences and opportunity costs involved in an approach to education which is overly focussed on easily measurable quantifiable factors.
Part 2 The Opportunity Costs of a Quantitative Approach

Opportunity costs with respect to macroeconomic welfare were established in the previous section. However, to only consider macroeconomic aggregates when considering potential losses to society would be to downplay the scope of the potential benefits to society and to individuals of promoting quality in education. Other key issues are given their due consideration in this section.

2.1 The Interrelationship Between Quantity and Quality

In developing countries, the decision by parents of whether or not to send their children to school is influenced by a myriad of factors. The costs of schooling (fees, uniforms, transport), culture, provision of free lunches by the school and the economic situation of the family all play a role. Additionally, and crucially in the context of this paper, the expected returns to education is a key factor. Obviously parents who anticipate low returns to education for their children will be less likely to enrol them in school.

Expected returns to education are broadly comprised of two aspects. Firstly, whether social and economic institutions are in place at a national level to provide educated citizens with an opportunity to convert their skills and knowledge into higher earnings in the workplace. Secondly, the perceived ability of local schools to equip students with these skills and knowledge in the first place. The former aspect, whilst absolutely vital, falls outside the scope of this paper, however the second relates specifically to the discussion at hand. By failing to provide effective and high quality schooling, countries provide disincentives for parents to enrol their children in school. It follows then that efforts to improve enrolment statistics set out in the MDGs and the EFA initiative are subsequently impeded. Thus, paradoxically, an overemphasis on quantitative goals is likely to, in itself, hamper the potential of achieving these very same goals.
As an important aside, this argument can be extended to the problem of child labour. Low expected returns from education resulting from poor quality schooling serves to reduce the incentives of parents to send their children to school against the possibility of involving them in productive labour. With education playing a leading role in the fight against child labour it is crucial that policy makers pay due attention to qualitative, not solely quantitative factors in education.

It also must be noted that poor quality of instruction is found to have a greater adverse impact on female students than their male counterparts. Whilst high drop-out rates generally in regions with poor quality of education support the above arguments, it has been observed in various studies that the contribution of poor quality schooling to student drop-outs is particularly pronounced in the case of girls (USAID 2008). With this in mind it is appropriate to consider education quality from a gender perspective.

2.2 Quality and Equality: the Cost of Failing to Educate Girls

In Section 1 of this paper cognitive skills, as measured by scores in international achievement tests, was used as a proxy for educational quality. In order to measure the relationship between educational quality and economic outcomes this indicator is appropriate and useful. However, to gain a broader understanding of key issues in education in development at a country level it is necessary to expand the concept of quality from this slightly one-dimensional measure. In this section, the issue of equality is, along with capacity to promote cognitive skills, recognised as being a key component the quality of an educational system and one which can’t be ignored. If a schooling system is to be regarded as being of high quality it seems fundamental that it must provide equal learning opportunities to all students.

Before beginning the analysis a note on terminology is needed. In the context of education from a gender perspective equality refers to a situation where girls and boys are given the same
opportunities to realise their educational potential. It is distinct from parity, which relates specifically to the state of enrolment rates between boys and girls being equal. Parity then may be seen as the first, but by no means final step, in achieving equality. The degree of equality present in an education system must be regarded as a key component of the quality of that system, and indeed is regarded as such in this paper.

2.2.1 Lack of Parity and Economic Costs

Before considering the more complicated issues of equality and relevance, an initial concept of the costs of the failure to provide parity in education should be attained. Using a study by Dollar and Gatti (1999), the World Bank has estimated the cost of failing to educate girls to the same standard as boys to the developing world as $92 Billion (Plan, 2008, page 3). This compares to $103 Billion in annual overseas development aid to developing countries. This result is staggering and indicative of the massive cost to all of society of failing to educate girls. Clearly, the issue of equality in education is one that relates not only to the fundamental human rights of girls but to the welfare of all members of society\(^1\).

Bearing in mind that the above figure was calculated using attainment statistics which relate to parity (the only practical way a study of this scope could conceivably be carried out) and not to equality, it could be supposed that the estimate is likely to be an under-estimate. In any event, the existence of empirical evidence of the scope of the loss to developing economies by failing to provide parity and therefore equality and, by extension, quality, in education is worthy of attention.

\(^1\) Results were obtained by multiplying the scope of the effect of a single percentage point lower secondary attainment of girls, estimated using Dollar and Gatti’s 100 country study, by actual percentage point differences in attainment in individual countries and then again by national economic output.
**2.2.2 Parity But Not Necessarily Equality**

Progress in achieving parity in education has been solid across the developing world, putting the achievement of MDG 3 (parity in enrolment between boys and girls at all levels of education by 2015) within reach. However, equality, which is much more difficult to measure but no less significant, has not always followed on the heels of gains in more easily measurable quantifiable gains in parity.

Specifically, girls’ abilities to realize their full human rights and enjoy the same opportunities as boys to achieve their full academic potential has been mitigated by various factors throughout the developing world, aside from the obvious issue of (lack of) parity. Expectations of girls as less-capable students by teachers and their male peers, learning materials which perpetuate gender stereotypes and lack of allowances in the teaching process for the different learning styles of girls have all seen female students placed at a disadvantage over their male counterparts. An evaluation of a USAID project in Malawi illustrates these problems. It was revealed that female students were generally thought of as “second-rate students incapable of answering questions” and were typically assigned low-status tasks within the school such as sweeping the floor and arranging furniture whilst boys were charged with more “prestigious” jobs such as ringing the school bell (USAID 2008). Having established a broader perspective of the problems relating to equality in education from a gender perspective, an analysis of the social costs of this shortcoming can be conducted.

**2.2.3 The Social Costs of Inequality**

The social costs of failing to provide the same educational opportunities to girls as boys are well documented and immense. Firstly, consider the fight against HIV/AIDS, a battle which must be won if large swathes of the developing world are to have an opportunity to work their way out of poverty. Women who have been educated have been shown to be more likely to know how to
protect themselves against the disease, less likely to engage in risky behaviour, subsequently less likely to become infected by the disease and therefore also less likely to have children who are born with, or later become infected by HIV/AIDS (Sen, 1998, Ch 8 Women’s Agency and Social Change). Thus, the battle to provide equality in education must be recognized in its interlinkage with the fight against HIV/AIDS.

Secondly, the benefits in terms of reduced fertility rates are large. Higher levels of education among women have been associated with significantly lower fertility rates throughout the developed and developing world (Sen, 1998, Chapter 8). With the greater range of opportunities and freedoms available to them, educated women frequently marry later, have greater say in household decisions and generally exercise their increased freedom to choose to have fewer children. The subsequent benefits to society at large, in the form of lower fertility rates, form a crucial component of the development process.

Thirdly, a strongly negative relationship has been shown to exist between childhood mortality and the education of level of women. Educated women are found to be much more likely to have their children immunized against preventable childhood diseases such as measles and polio and to take appropriate precautions against malaria (through the use of bed-nets). The children of educated mothers also see their chances of becoming healthy adults raised further by experiencing the benefits of higher nutrition. The greater influence in family decisions enjoyed by educated women sees household spending decisions more geared towards the interests of children, which includes a higher proportion of family income frequently being diverted to nutritional food for the children (and a lower proportion on entertainment for the father). (Lewis, 2005, Chapter 4).

Consequently, it is critical that equality be seen to be a vital part of quality in education and that it is emphasized and advanced through educational programs which tend, at present, to mitigate the potential to realize the full potential of the above mentioned benefits of equality (and therefore
(quality) by focusing on easier to measure quantifiable goals as set out in the MDG Goals and the EFA Initiative.

2.2.4 Relating to Income Distribution

Stark dispersions in income distribution in developing countries exacerbate poverty levels and serve as an obstacle in the development process. The poorest of the poor are frequently denied the opportunity to provide adequate nutrition for their children, receive quality medical care or to save and invest in their children’s futures. It is therefore pertinent to assess the role of education in alleviating barriers to the capabilities of the poor which exist through inequitable income distribution.

Though it has been generally assumed by policy-makers over the years that an expansion in education has the effect of providing a country with a more equitable distribution of income, empirical studies have revealed an ambiguous and complicated relationship between educational attainment and income distribution. Dollar and Kray (2001) found that an expansion in education did not have an influence on the income levels of the poor beyond the effect on average income (that is, education facilitated growth but not equity). Knight and Sabot (1983) also found no relationship between education and income distributional equity. The latter study identified two effects of an expansion in education. Firstly, as the group with a relatively high level of education is expanded, income inequality increases in the short and medium-term before eventually declining. This “composition” effect implies an inverted U-shape (Kuznets) curve between educational attainment and income inequality. Secondly, the “compression” effect serves to reduce the premium on education in the labour market and thereby decrease income inequality. It has generally been
unclear as to which effect dominates, leading to much debate and ambiguity on the true nature of the relationship between education and income distribution.

The extent of this ambiguity has been lessened, however, by a study by Gundlack, Navarro de Pablo and Weisert (2001). Using a quality index which estimated the quality of schooling, the authors found that the effect of an expansion of quality adjusted education had an impact on the poorest quintile of the population which was over and above the impact on average income. It was revealed that a 10 per cent increase in the quality adjusted human capital of a country (as measured by years of quality-adjusted education) was associated with an additional 3.2 per cent increase in the income of the poorest quintile, additional to the one-for-one increase resulting from higher overall average national income (page 6). These results indicate that, whilst pure quantitative increases in education may have positive or negative effects on the incomes of the poor, qualitative increases are associated with unambiguously positive results. Hence, a focus on educational quality, and away from quantity, benefits society not only on its effect on economic growth but on income inequality as well.

At an intuitive level, it is important to stress the critical role quality in education plays in equalising the opportunities of individual students. Students from the poorest backgrounds typically suffer from a relative lack of learning opportunities outside the school. Their parents are less likely to be educated, they’re less likely to have access to books and other learning materials at home and have relatively fewer opportunities to supplement their learning through extra-curricula classes. As such, these students are more reliant on the existence of high quality instruction in class with the result that poor quality teaching inevitable perpetuates pre-existing differences in the learning opportunities of students (USAID 2005). If equity is to be promoted at a society level, the equalisation of educational opportunities must play a key role and it must begin with the provision of high quality schooling.
Part 3 The Promotion of Quality in Education

Focus on the importance of quality in education has been a relatively recent development and unfortunately, as this paper has highlighted, still too often takes a back seat to debates on quantitative issues in public debate on education. The consequence of this has been a relative dearth of literature which seeks to contribute to existing knowledge on effective strategies of promoting quality in education. Work in this field must be expanded if countries are to be given the opportunity to realise the potential benefits of education in the development process. Nonetheless a number of existing studies have outlined a number of strategies which have been found to increase the qualitative aspect of education in both developed and developing countries.

Significantly, strategies providing participants in the education process (students, teachers, administrators) with relevant incentives have been found to be highly effective (Hanushek and Wobmann, 2007). Benefits flowing from incentives are best realised by a system in which local autonomy exists over teachers’ salaries and course content in conjunction with a central school exit examination system. In a study by Wobmann (2005) this system was found to increase students’ performances in international maths exams by 36 per cent, after family, student and school factors were controlled for. Though effective, the widespread adoption of this strategy is threatened by teachers’ unions general resistance to incentive-related salary systems.

Similarly, the effect of the existence of the availability of choice among schools to local parents has been found to have the effect of providing schools with adequate incentives to increase their effectiveness in terms of student outcomes. Studies in Columbia, Tanzania and Chile have generally supported this view (Hanushek and Wobmann, 2007). Care must be taken to ensure, however, that
schools are not segregated in an undesirable way and additional study is need on this, as in many other, strategic areas relating to the promotion of effective student outcomes in education.

Lastly, and predictably, teacher quality has been found to be hugely important in the learning process. However, understanding of exactly what constitutes a good teacher is incomplete and insufficient at present. Available evidence does not suggest the existence of a relationship between effective teachers and the extent of teachers’ experience, qualifications or training. Again, further research is necessary to shed light on exactly what qualities make an effective teacher and how these qualities can be best fostered.

Factors which have not (surprisingly) been found to impact on student outcomes have been resources (above a certain minimum level) and class sizes. A shift in focus to a student-outcomes based approach would see an expansion of research and, subsequently, knowledge on this issues which are critical to the future role of education as one of the key drivers of the development process.

Summary

- The relationship between educational expansion and economic welfare is not as clear cut as is frequently imagined. Variables such as economic openness, security of property rights and national security, when controlled for have been found to mitigate most or all of the economic benefits of increased access to education.

- When quality of education is taken into account, the above relationship becomes larger and more robust, even when security and openness are controlled for.
• The gaps between the developed and the developing world is larger than is commonly envisaged when quality of education is considered

• An overemphasis on quantitative aspects of education, as is encouraged through present global initiatives such as the MDGs and the EFA Initiative carries with it significant opportunity costs for developing countries. These costs relate to economic growth, income distribution, the battle against HIV/AIDS, fertility, nutrition the fight against child labour and human rights.

• The international community must adjust its focus towards a more outcome based, or qualitative approach, to educational promotion. In order to ensure that the effect of this approach is maximised there is a pressing need for research into qualitative issues in education to deepen knowledge of policies and strategies which serve to increase the effectiveness of education.

References

Primary Sources

A useful analysis on the extent to which educational expansion has been found to provide more equitable income distributions.

Assesses a study by Dollar and Kray (2001) which stated that higher primary enrolment carried no additional benefits to the poor, over and above the effect on overall average income, finding substantial additional benefits when quality of education was included in the model.

Examines in depth the relationship between education quality and economic growth in developed and developing countries.

Secondary Sources

Studies the relationship between education and growth in the Caribbean, and notes potential problems with the results associated with reverse causality.


Analyses the key role of women in African societies and the potential social and economic benefits of their empowerment.


Provides quantifiable estimates of the loss to developing economies of present gender inequalities in education.


Outlines social and economic benefits associated with the empowerment of women in developing societies.