

Human Capital and Inclusive Growth: The Challenges for Bangladesh

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By

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1. Introduction

The role of human capital³ in promoting economic growth is well recognized in the development literature. This has also been borne out by the experience of countries that have been successful in achieving high rates of sustained and broad based economic growth. The countries of East and South East Asia are particularly notable in this respect⁴.

Theories of economic growth have long acknowledged that the entire growth of output in an economy cannot be explained by the quantities of the factors of production employed⁵, and that technical progress plays an important role in explaining the part that cannot be ascribed to the physical inputs like capital and labour. In trying to understand the process of technical progress, it has been recognized that the intellect and efforts of human beings play an important role. And it is in that context that the idea of human capital emerged.

While labour is regarded as a factor of production along with capital, it is not homogeneous; the quality of labour can vary depending on the levels and types of education and training received by the members of the labour force. Individuals and a country can build up its human capital base by investing their savings in education and training. And human capital can make contributions in production that are different from that made by unskilled labour⁶. Shortage of human capital may emerge as a constraint on economic growth in developing countries.

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³The term human capital may be conceptualized in a broad sense to include education, skills and health of workers that determine their overall ability. However, in the present context, education and skill of a worker will be used as a surrogate for human capital; and hence, these terms will be used interchangeably.

⁴World Bank (1993) points out that education and skill development played an important role in the high rate of economic growth achieved by the countries of East and South East Asia region during the 1970s and 1980s.

⁵Kuznets (1966), for example, pointed out that for developed countries, only a portion of economic growth can be explained by the growth in the quantity of capital and labour, and that quality of the inputs is one major explanatory factor of the unexplained residual.

⁶There is a large body of literature on the contribution of human capital to economic growth. An excellent survey is provided by Schultz (1991). For an exposition of how human capital can be incorporated in growth models, see Ray (1999).

However, from the point of view of inclusive development, it is important to look at the role of human capital not only on the rate of economic growth but also on elements that make growth more inclusive. Since inclusive growth involves reduction of poverty and inequality and broad based participation through productive employment, it would be important to ask whether in addition to raising economic growth, education and skill training help reduce poverty and inequality and improve the employability of potential job-seekers⁷.

Another issue that has not yet received detailed analysis in development literature is how the pattern of demand for education and skills changes with the level of economic development. For example, a country with a good base of elementary education may be able to achieve economic growth up to a certain level and yet face constraints arising from the shortage of skilled workers at a higher level of development. If that is the case, countries would need to keep upgrading the level of their human capital as they achieve higher levels of economic development.

The purpose of the present paper is to analyze the role of human capital in attaining inclusive development combining economic growth with productive employment and improvement in the employability of the labour force. In doing so, particular attention will be given to differential education and skill requirement at different levels of development. However, since Bangladesh is still at a stage of development where its surplus labour is not yet fully exhausted, full utilization of that surplus through higher rate and a different pattern of economic growth should be a priority for the country. The present paper, therefore, starts (section 2) with a quantitative analysis of the magnitude of the employment challenge that the country faces now and is likely to face during the next decade and a half. Section 3 deals with the linkage between education and economic growth while section 4 analyzes the link between education and employment including the issue of evolution of education and skill requirement with economic growth. Section 5 addresses the challenge faced by Bangladesh in the area of human capital development. Some concluding observations are made in section 6.

2. The Employment Situation in Bangladesh and the Challenge for Future

2.1. Unemployment and underemployment

Unemployment is regarded as an important indicator of the labour market situation of a country. However, in a developing country like Bangladesh, open unemployment usually does not provide a real picture of the labour market situation because of a variety of reasons. First, given the standard definition and measurement of unemployment, it is not unusual to see very low rates of open unemployment in developing countries. Only those members of the labour force who have not worked even an hour during the reference week and have been actively looking for work are categorized as unemployed. In developing countries where poverty is widespread, there is no unemployment benefit and social safety nets have at best limited coverage and effectiveness, very few can afford to remain without work. Moreover, in the absence of organized methods of job search, the notion of “looking for

⁷The present paper does not deal with the role of human capital in reducing poverty and inequality. Those issues are discussed in Islam and Islam (forthcoming). There are empirical studies (for example, Islam, 2006 a and country studies in Islam, 2006 b) indicating the role of education in reducing poverty.

work” is rather ambiguous. So, it is not unusual to find unemployment rates to be low. And the same is the case with Bangladesh.

Open unemployment rate in Bangladesh has remained between 4 and 5 per cent of the labour force since the 1990s. In fact, the figure remained unchanged at 4.3 per cent during three consecutive surveys _ 1999-2000, 2003-03 and 2005-06, and then inched up to 4.5 per cent in 2010. Thus it seems that not only is the rate of unemployment low, it has remained surprisingly stable for a long period. Hence, in any serious discussion on employment and labour market, one has to go beyond open unemployment.

Given the existence of surplus labour in developing countries, underemployment is considered to be a useful alternative indicator of the labour market situation. However, the concept of underemployment is also not without complexity, and hence measures also vary. Two alternatives that are often suggested are visible and invisible underemployment. Visible underemployment refers to the underutilization of the available labour time of an individual and willingness of the individual to work longer. This is also referred to as the time measure of underemployment. Invisible underemployment is an analytical concept referring to the productivity and income generating capacity of work in which one is engaged. There is no universally accepted measure of such underemployment. It could be measured in terms of productivity associated with or income generated by employment. The labour force surveys of Bangladesh provide a measure of visible underemployment in terms of the time measure and categorize those working less than 35 hours a week as underemployed. Relevant data are presented in Tables 1 and 2.

Before coming to the data in tables 1 and 2, it may be useful to sound a note of warning about using them to draw straightforward conclusions. For example, a comparison of the figures for 1999-2000 and 2002-03 indicates more than a doubling of the rate of underemployment. It is very difficult to explain such a sharp increase, especially since the economy was not doing so badly during those years. Likewise, the sharp decline in the years after 2002-03 also defies logical explanation.

Table 1: Underemployment in Bangladesh (% of labour force)

	1999-2000	2002-03	2005-06	2010
National	16.6	34.2	24.5	20.3
Rural	17.8	36.4	27.8	22.7
Urban	12.2	26.7	13.9	12.4

Source: BBS: Labour Force Survey (various years).

Some clue for the observed volatility of the figures on underemployment could perhaps be found when the overall figures are broken down by gender and location⁸. Figures presented in Table 2 indicate that the rate of underemployment shows much more volatility for women compared to men. For example, female underemployment increase sharply between 1999-2000 and 2005-06 and fell sharply thereafter. On the other hand, male underemployment shows secular increase over the entire period of these three labour force surveys. One may be tempted to conclude from these figures that after a sharp increase in female underemployment, it has declined after 2005, and that should be regarded as a positive sign. In this context, it may be useful to look at the difference in trend in female underemployment between rural and urban areas. The volatility is much higher for rural women than urban women. And that gives rise to the suspicion that the observed figures may reflect differences in inclusion in and exclusion from the labour force. For example, in 2005-06, many more rural women who work for short periods (particularly as unpaid workers) may have been included as members of the labour force, and that may have pushed the female underemployment rate to a very high level. In 2010, the opposite may have happened. Thus, how responses regarding female employment are recorded in the questionnaires can have serious implications for the results.

Table 2: Underemployment in Bangladesh by Location and Gender (% of labour force)

	1999-2000	2005-06	2010
National	16.6	24.5	20.3
Male	7.4	10.9	14.4
Female	52.8	68.3	34.1
Rural	17.8	27.8	22.7
Male	8.1	12.4	16.7
Female	57.7	77.0	36.6
Urban	12.2	13.9	12.4
Male	4.7	5.9	6.9
Female	38.2	39.8	25.6

Source: Same as in Table 1.

⁸Of course, one needs to note an important point regarding the timing and methods used in the labour force surveys. The survey of 2002-03 was undertaken as a one-shot exercise during the lean season of agriculture. Likewise, the survey of 2010 was also a one-shot exercise, while the other surveys have been undertaken over a period of one full year. Thus, the data obtained from the 2002-03 and 2010 surveys are not seasonally adjusted while that for other years are. This could be one reason for the figure of underemployment in 2002-03 to be so much higher than those in other years. The survey of 2010 was in May which is not the lean season.

As for male underemployment, figures in Table 2 point to a secular increase over the entire period. The increase is more noticeable for rural men.

2.2. Vulnerable employment

As mentioned earlier, open unemployment in Bangladesh is low because people cannot simply afford to remain unemployed and thus try to eke out a living from some work. As a result, a large proportion of the employed are engaged in work that can be called “vulnerable”. There is no universally accepted definition of vulnerability in this context, but the sense that is being conveyed is the vulnerability of workers engaged in such employment from various perspectives like stability of the job and income earned from it. The ILO identifies vulnerable employment as the self-employed and own account workers as well as those engaged in unpaid family work⁹. Data relating to this kind of employment are presented in Table 3. A few aspects relating to the trend in vulnerable employment emerge from this table.

First, between 2005-06 and 2010, no significant change appears to have taken place in the proportion of self-employed and own account workers and those in unpaid family work. In other words, the degree of vulnerable employment has not improved during this period.

Second, if one looks at a longer period, viz., between 1999-2000 and 2010, there has been a substantial decline in the proportion of self-employment and own account work. But there has been a similar increase in the share of unpaid family work _ indicating that many of the own-account workers may simply have reverted to becoming unpaid family helper. In fact, the degree of vulnerable employment on the whole appears to have increased over the long term period. Moreover, if the proportion of paid employees is regarded as a proxy for regular employment, the situation appears to have worsened during the decade ending in 2010. In other words, with regard to the MDG 1B target of reducing the proportion of own account workers and contributing family workers in total employment, Bangladesh has a long way to go, and the progress during the 2000s has not been in the right direction.

⁹This is also used as one of the indicators of MDG 1B relating to employment and labour market. It needs to be recognized that associating vulnerability with all own-account work (or self-employment) is not fully justifiable. For a critique of the definition of vulnerable employment suggested by the ILO and adopted in MDG 1B, see Islam (2014a).

Table 3: Changes in the Structure of Employment by Status in Employment

Status	1999-2000	2002-03	2005-06	2010
Self-employed/own account workers	46.67	44.70	41.98	40.8
Employee	16.67	13.77	13.92	14.6
Unpaid family helper	12.05	18.28	21.73	21.8
Day labourers	24.36	20.09	18.14	19.7

Source: Calculated from Bangladesh Bureau of Statistics: *Labour Force Survey*, various years.

Another indicator of vulnerable employment is the proportion of engaged in the informal sector of the economy. When labour force growth is high and growth in formal sector jobs is insufficient to absorb all the new addition to the labour force, the informal sector performs the role of last resort. Although a segment of the informal sector may exhibit characteristics of dynamic growth of economic activities, a large proportion basically acts as the sponge for absorbing surplus labour. In Bangladesh, the share of employment in the informal sector has increased substantially from 78.48 per cent in 2005-06 to 87.43 per cent in 2010. In fact, the number employed in the informal sector grew at a higher rate (6.19 per cent per annum) between 2005-06 and 2010 compared to the earlier inter-survey period of 2002-03 to 2005-06 when annual growth was 1.96 per cent. It is thus clear that there has been a tendency towards informalization of employment in the country.

Table 4: Employment in the informal sector

Year	Employment in the informal sector (million)	Share of informal sector employment in total employment (%)
2002-03	35.1	79.23
2005-06	37.2	78.48
2010	47.3	87.43

Source: BBS: *Labour Force Survey*, various years

2.3. The magnitude of the employment challenge: A quantitative estimate

In an economy like that of Bangladesh where unemployment is low and people somehow manage to eke out a living, jobs required may not provide a true indicator of the real challenge in the area of employment. In addition to numbers, it would be important to look at the type of employment (in terms of sectors, skill requirement, etc.) that needs to be created. An attempt is being made here to present some numbers as an indicator of the basic quantitative aspect of the employment challenge. But the numbers presented also take into account the possibility making a dent on the situation regarding unemployment and underemployment. In that sense, the qualitative aspect of employment is also addressed to some extent.

The methodology applied

It would be in order to note a few basic aspects of the projection being presented. First, the terminal year is taken as 2015 (which is also the terminal year for the Sixth Five Year Plan of the Government of Bangladesh). Second, to get a picture of the supply side, projection of labour force is made by using the growth of labour force observed during the inter-survey period of 2005-10. Third, an aggregate projection model will be used (elaborated further below) which involves the use of elasticity of employment with respect to output and projected GDP growth. As for the former, the observed (estimated) elasticity for the period 2005-2010 will be used. As for projected GDP growth, three alternative scenarios will be used. The first would be 6.5 per cent which we consider to be realistic considering the growth record of the economy in recent years. The second scenario would be a GDP growth of 7 per cent per annum which we consider to be “optimistic”. The third scenario would be based on GDP growth of 7.3 per cent per annum which is the average growth projected for the Sixth Plan period and which we consider to be “very optimistic”.

The model used for projections is presented below:

$$E_t = E_0(1 + r_e)^t \quad (1)$$

where

E_t represents total employment in the terminal year of the projection period,

E_0 represents total employment in the base year, and

r_e represents the annual rate of growth of employment during the projection period.

$$r_e = \eta r_g \quad (2)$$

where

η represents elasticity of employment with respect to output, and

r_g represents growth of output

$$\eta = r_e \div r_g \quad (3)$$

Results of projections

Labour force

Applying the growth rate of 3.45 per cent per annum (the observed growth of labour force during 2005-10), one gets a projected labour force of 67.18 million for 2015. This gives one an additional labour force of 10.48 million during 2010-15 or about 2.1 million per year.

To the new labour force, one has to add the backlog of unemployment (2.6 million in 2010) that exists and for whom employment needs to be found. Allowing for some unemployment to remain, one could assume that the target should be to absorb about half of those by 2015. That would mean an additional 400,000 has to be added to the yearly target for employment.

Given the fact that international migration of workers is an important source of employment for the labour force of Bangladesh, it would be appropriate to take that into account in estimating the number of jobs that would be required in the domestic labour market. Given the recent as well as long terms trends in the outflow of workers, it may be realistic to assume that about 400,000 people would find employment abroad every year.

Thus, taking into account the addition to labour force, the need to absorb some of the unemployed, and the possibility of international migration for employment, it would be appropriate to take 2.1 million per year as the minimum quantitative target for employment during the next few years.

Employment

The annual rate of growth of employment has been projected by using an employment elasticity of 0.55 which is the figure estimated for the period 2005-10 (Islam, 2014 c, forthcoming) and alternative rates of GDP growth of 6.5, 7 and 7.3 per cent per annum. The results are presented in Table 5.

If 2.1 million jobs are regarded as the minimum quantitative target as explained above, a GDP growth of 6.5 per cent per annum would be the required growth rate for the economy as a whole. However, with economic growth remaining at that level, the labour market will continue to remain at its present state with a large proportion of workers underemployed and poor despite being at work. In order to make a real dent on underemployment and the number of working poor, the number of additional employment per year will have to be substantially higher than the 2.1 million mentioned above so that the available surplus labour can gradually move to new jobs with higher productivity. As Table 5 shows, that process would start happening when economic growth exceeds 6.5 per cent. But even with GDP growth of 7 to 7.3 per cent, the additional employment created is not much higher than the minimum requirement of 2.1 million. A question that may be asked in this regard is: what level of economic growth would be required for the economy to be able to absorb its surplus labour within a reasonable time frame (say ten to fifteen years)?

**Table 5: Employment Projections under Alternative Assumptions about GDP growth
(With employment elasticity of 0.55)**

	Alternative assumptions regarding GDP growth (% per annum)		
	6.5%	7.0%	7.3%
Total employment in 2015 (million)	64.5	65.4	65.9
Additional employment (2010-15) (million)	10.4	11.3	11.8
Additional employment per year (million)	2.08	2.25	2.36

In order to address the question of absorbing surplus labour mentioned above, one would first need an estimate of that and then make projections of employment needed to absorb that. In the absence of a national estimate of surplus labour based on some rigorous methodology, an attempt is made here to provide an illustrative estimate of surplus labour and GDP growth required to absorb that within a 15 year period.

One approach (albeit rather crude) would be to apply the current rate of underemployment (20 per cent) to the employed labour force in agriculture (25.7 million) and arrive at an estimate of surplus labour in that sector. This gives one a figure 5.2 million. Assuming the rate of underemployment to be 10 per cent for the rest of the rural labour force (18 million) and 5 per cent for the urban labour force (13.3 million), one gets 1.8 million and 0.66 million respective. So, the total number of surplus labour would work out to be 7.66 million¹⁰. If this surplus labour is to be absorbed in 15 years, the number of additional jobs that would be required per year works out to be a little over 500,000. Hence for a period of five years, the number of additional jobs required would be: (i) 10.5 million to absorb the new additions to the labour force (at the rate of 2.1 million per year as explained earlier), and (ii) 2.5 million as contribution to absorbing the existing surplus labour. Thus a total of 13 million jobs would be required over a five year period. Using an employment elasticity of 0.55 and the projection model

¹⁰Another way of estimating surplus labour could be to use the idea of working poor. Given the facts that open unemployment rate is only 4 per cent of the labour force and the incidence of poverty is about 31 per cent of the population, it is clear that a large proportion of those who are employed are poor despite being employed. Clearly, their income needs to increase either through improvement in productivity and returns within their existing work or move to new work with higher productivity and returns. Applying the same percentage of poverty to the employed labour force (54.1 million), one gets 16.8 million as an estimate of working poor. Clearly this is much higher than the estimate obtained by using the underemployment rate, and it may not be realistic to use this for purposes of estimating surplus labour in the economy.

presented above, the required GDP growth for creating 13 million jobs works out to be 8 per cent per annum.

To sum up the results of the labour force and employment projections presented above, an economic growth of 6.5 per cent is the minimum requirement merely to absorb all the new additions to the labour force in the medium term and to make some dent in the current rate of unemployment. Higher rate of economic growth would be required in order to absorb the surplus labour that currently exists in the economy, and that process can start when GDP growth reaches and exceeds 7 per cent per annum. However, in order to be able to exhaust the surplus labour within a reasonable period of time (say 15 years), GDP growth in the range of 8 per cent would be required¹¹.

Alternative scenarios with higher employment intensity of growth

One must have noticed that in making the projections presented above, no variation has been made in the elasticity of employment although different assumptions have been made with regard to GDP growth. Isn't it possible to think of higher employment growth through higher employment intensity of growth? Actually, the elasticity of employment observed for the major sectors (except services) during 2005-10 appears to be quite high. Any further increase in employment intensity for those sectors may not be desirable, at least from the point of view of productivity. However, the overall elasticity of employment with respect to GDP growth could be higher if the more employment intensive sectors grow at higher rates than at present. For example, manufacturing sector is seen to have higher employment elasticity compared to agriculture and services. Hence, if manufacturing grows at much higher rate than those sectors, it is not impossible to think of a situation where the overall employment elasticity could be higher than observed during 2005-10. For example, even 6.5 per cent GDP growth could be consistent with say, 12-13 per cent growth of manufacturing. Although the sector in Bangladesh has not attained such high growth, it is not impossible¹². With growth in that range and no decline in the employment intensity of growth in the sector, employment in the sector could increase at 9-10 per cent per annum. The overall employment elasticity with respect to GDP could also be higher than observed. In order to illustrate the likely scenario with such growth in the manufacturing sector, an alternative set of projections have been made by using an overall employment elasticity of 0.65. The results are presented in Table 6.

¹¹ While such a high growth rate may appear unrealistic in the context of Bangladesh, at least looking at recent trends and considering its medium-term prospects, there are those who think that such high growth is possible. See, for example, Alamgir (2014).

¹² For example, in Republic of Korea and Malaysia, manufacturing output grew at such (or even higher) rates for a long period of time. The graph in the annex to this paper shows the growth of manufacturing output and of GDP in Bangladesh during the period 1990-91 to 2009-10. It is clear from that figure that growth of manufacturing output has been quite volatile. It did exceed double-digit figure in 2006-07 but then declined sharply. From the point of overall growth of the economy as well as of employment, a sustained high growth of manufacturing output is essential.

Table 6: Employment Projection with Employment Elasticity of 0.65

	GDP growth (% per annum)		
	6.5	7.0	7.3
Total employment in 2015 (million)	66.54	67.58	68.21
Additional employment (2010-15) (million)	12.44	13.48	14.11
Additional employment per year (million)	2.49	2.70	2.82

What is worth noting from the figures in Table 6 is that even with a GDP growth of 6.5 per cent much higher growth of employment is possible if the weight of manufacturing in that growth increases. In fact if manufacturing grows at the rate 12-13 per cent per year and if labour intensive industries like garments, shoes, furniture, electronics, leather products, etc. feature in that growth, it is possible for employment in manufacturing to grow at 9-10 per cent per annum. That would imply an additional employment in the sector of approximately 600,000 per year (instead of less than 400,000 at present). Such growth in the manufacturing sector will have linkage effects with other sectors, especially transport and service sectors. Hence, the employment outcome could be substantially better than the one presented earlier if a different pattern of growth (with substantially higher growth of the manufacturing sector) could be achieved.

3. Education and Economic Growth

3.1. Channels of transmission of the effect of education on economic growth

The contribution that education makes to economic growth can be viewed from both micro and macro perspectives. At the micro level, education is expected to play a positive role in at least two ways. First, by raising the productivity of individuals it can help them increase their earnings. Second, by lowering the fertility of women, education can contribute to an increase in labour force participation. Education can result in a number of externalities that may make an indirect contribution to economic growth. In addition to its impact on fertility, education can contribute to an improvement of health, especially of children. Furthermore, educated parents are more likely to send their children to school, thus raising the overall level of education of the future generation. Education and skills of members of the labour force may also improve the ability of neighbours as people often learn through observation. This may apply in

a wide range of activities including simple measures leading to an improvement in health and hygiene to the adoption of improved technology and practices in economic activities, especially farming¹³.

At the macro level, higher and better education is expected to contribute to higher growth of labour productivity. Two more channels of interaction between human capital and economic growth include the positive impact of education on both domestic and foreign investment, and its role in fostering higher levels of product variety and innovation (Hawkes and Ugur, 2012).

It needs to be underscored that human capital plays a critical role in raising productivity and growth not only in the relatively more modern sectors of the economy, but also in sectors like agriculture. Even before biotechnology and genetic complexities started playing a role in raising productivity in agriculture, studies demonstrated the role of education of farmers in raising farm productivity (Schultz, 1991). With genetic and environmental considerations becoming increasingly important in agricultural operations, and with the growing importance of diversification, emerging management practices (e.g., contract farming), and commercialization, education has become even more important in achieving the real potential of the agricultural sector (Chadha, 2003). Education has also been found to be important in improving the mobility of the workforce from farm to non-farm activities (Schultz, 1991).

In manufacturing, even in relatively more labour-intensive sectors like ready-made garments manufacturing, etc., the use of computer-based techniques is becoming increasingly frequent. Likewise, effective and efficient management of micro and small enterprises in an increasingly commercialized and competitive environment would require a minimum level of education that is necessary for applying basic accounting and management practices. And the same goes for services, especially if one goes beyond the rudimentary and traditional type of services.

The analysis of the link between education and productivity has its foundation in the notion of rate of return to education. The basic argument goes as follows. In a competitive situation, wages paid to a worker is expected to be equal to his marginal revenue product. On the other hand, the standard wage (or earnings) equation exhibits a positive relationship between wages and education¹⁴. That, in turn, implies that educated workers have higher marginal revenue product of labour as they are more productive. This positive relationship between education, productivity of labour and higher output is expected to hold at the macroeconomic level as well.

In addition to analysis based on rate of return to investment in education, two other approaches have been adopted in the literature on linkage between education and economic growth: (i) growth accounting where the approach is to split the growth of output into the contributions of various inputs,

¹³Drèze and Sen (2013) enumerates a number of ways in which education plays a role in process of development and social progress that include ability to communicate better and be better informed, giving a voice, especially to women, tackling the health problem, providing greater access to economic opportunities and reducing inequality. See, also, Gemmel (1996) and Hanushek, et al. (2008).

¹⁴ This is the famous Mincerian wage equation (due to Mincer, 1974) that postulates wage as a function of years of education, years of work experience and ability of an individual. At the micro level, private rate of return to education can be estimated by regressing an individual's income on the level of education and other characteristics.

e.g., capital, labour, quality adjusted labour, etc., and (ii) growth regressions where cross-country data are used to estimate the relationship between education and economic growth¹⁵.

3.2. Empirical evidence of the link between education and economic growth

Notwithstanding the difficulties of providing statistical evidence on the role of education and skills in raising productivity, a large number of studies have been undertaken on linkages among education, productivity and development. Studies on rate of return carried out in the 1970s, 1980s, and 1990s (Blaug, 1976; Psacharopoulos, 1985, and 1994, for example) brought out a number of points that have important implications for possible policies on education in relation to economic growth in developing countries. It may, therefore, be useful to recount them:

- Rate of return to education tends to be higher in low income countries
- Rate of return is usually found to be higher for primary education, and especially so in developing countries
- Rate of return tends to decline with the level of schooling and the country's per capita income
- Investment in girls' education tends to yield a higher rate of return than investment in boy's education

After reviewing a number of such studies, Schultz (1991) concluded that there are strong empirical regularities between educational attainment of populations and their productivity and performance in both market and non-market production activities. Likewise, Behrman (1990) also notes the critical role of schooling in increasing labour productivity. After reviewing a number of growth models that incorporated the human resource factor and empirical studies containing analysis of the contribution of human capital to productivity and economic growth, Behrman (1990) concluded: "Even though it is difficult to quantify the contribution of human capital to economic growth, there is virtually unanimity regarding its critical role" (p. xiv).

Of course, subsequent studies on rates of return put into question some of the earlier conclusions, especially the one on the relative rates of return of primary versus higher levels of education. For example, the private rate of return to investment in higher education in low income countries is found to be slightly higher than that of primary education (Table 7). Likewise, in Rwanda, Ghana, India, Kenya, South Africa and Tanzania, returns to higher education is found to be higher than that of primary education (Table 8). In some countries, returns to secondary education is also found to be higher than that of primary education. These results imply that at some stage of development, primary education is no longer adequate for many jobs in the labour market, especially those that yield higher earnings. This has started happening in countries like South Africa (Palmer, et al. 2007). This needs to be borne in mind when planning human capital development in Bangladesh with a long term perspective.

¹⁵ For formal expressions that are used in these two approaches and references to the relevant literature, see Stevens and Weale (2003).

Table 7: International Averages of Rates of Return to Education

Regions	Social rate of return			Private rate of return		
	Primary	Secondary	Higher	Primary	Secondary	Higher
Low income	21.3	15.7	11.2	25.8	19.9	26.0
Sub-Saharan Africa	25.4	18.4	11.3	37.6	24.6	27.8
Asia	16.2	11.1	11.0	20.0	15.8	18.2
World	18.9	13.1	10.8	26.6	17.0	19.0

Source: Psacharopoulos and Patrinos (2004) and Palmer, et al. (2007)

Table 8: Private Rates of Return from Country Studies

Country	Primary	Secondary	Higher
Rwanda	13.2	21.3	46.9
Ghana	19.4	13.5 (Junior) 19.5 (senior)	9.1
Ghana	24.5	17.0	37.0
India	2.6	17.6	18.2
South Africa	2.9	9.7	60
Kenya	25	7	35
Tanzania	3.6	6.9	9.0

Note: The figures quoted in this table are from various country studies that have been mentioned in Palmer et al. (2007). The two sets of figures reported are from two different studies.

Source: Same as for Table 7.

4. Education and Employment

4.1. Education, employment and mobility in the labour market

Better educated and trained people have a greater probability of being employed because education and training can raise qualifications and make labour force more productive. This should be reflected in (i) higher rate of employment _ measured, for example, by the ratio between employed and working

age population, and (ii) a lower rate of unemployment for those with higher levels of education. But such a positive relationship between education and employment may hold better in situations where the labour market as a whole seeks educated people and sectors that are larger and grow at higher rates seek more educated workers. This may not be the case in developing countries where labour markets are often found to be segmented and the educated find jobs only in certain segments of the economy.

For example, in a dual economy with a predominantly traditional segment that consists of agriculture and allied activities, educated workers are likely to find jobs only in the modern sector which is typically small _ especially at the early stages of development. Such sectors may not require much educated worker except perhaps in research, extension service, etc. Likewise, construction, traditional crafts and other informal sector activities also may not require formally educated and trained worker. As an economy grows, the modern sector is also likely to grow in size, thus raising demand for a more educated and skilled workforce. Hence, in developing countries, one may not find a clear positive relationship between education and employment in terms of the simple indicators mentioned above.

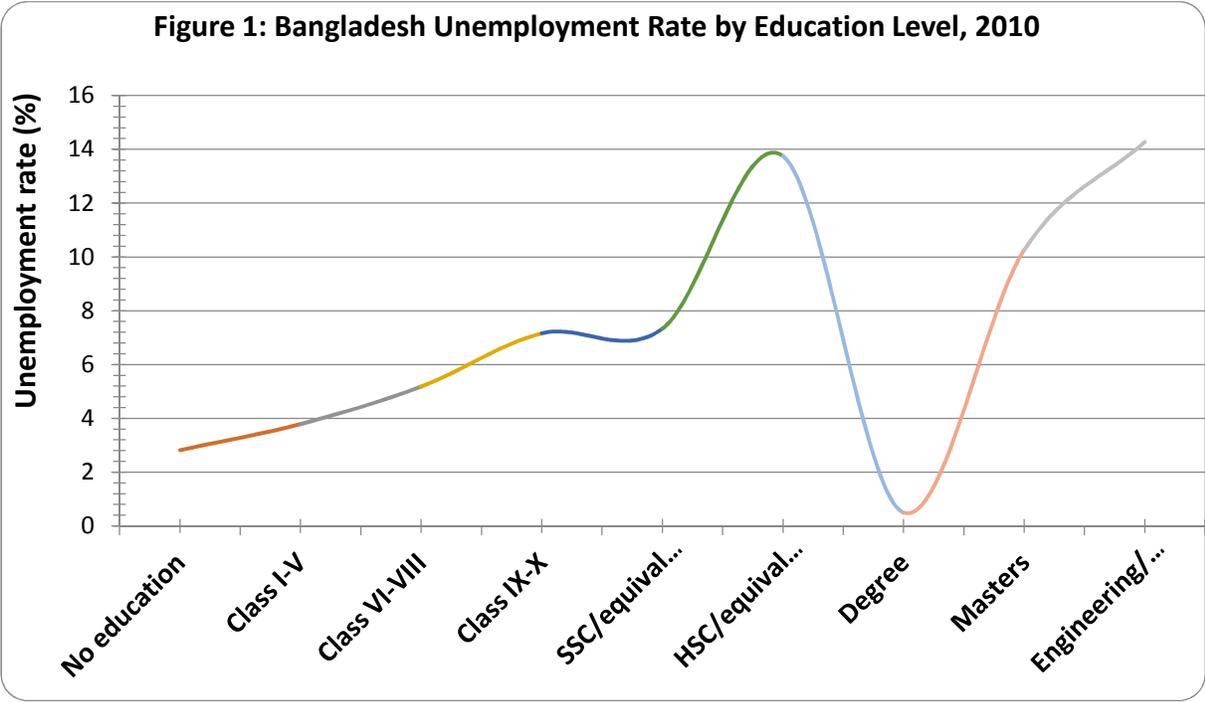
How, then, is the importance of education for the labour market of developing economies likely to be manifested? As mentioned above, with economic growth, a dual economy is likely to witness expansion of its modern sectors which in turn is expected to lead to increased demand for educated and skilled labour. In such a situation education and skill training would be important to facilitate mobility of workers from the traditional to the modern segments of the economy. Likewise, developing countries are expected to witness changes in the composition of labour force in terms of the status of employment _ for example, from casual workers in agriculture to regular wage and salaried workers in manufacturing and other modern sectors. This may also imply a greater demand for more educated people. All these developments are likely to mean higher wages and earnings of workers with more education.

Looking at the actual situation with respect to education and employment, one finds a negative relationship between average years of schooling and youth unemployment rate in developed countries, and the opposite in developing countries (Islam, 2013). For overall employment also, a positive relationship is found between education and employment in developed countries. A study on OECD countries (OECD, 2011) finds that 84 per cent of the population with tertiary education is employed, and it falls to 74 per cent for people with upper secondary and post-secondary non-tertiary education. For those without upper secondary education, the figure goes down to just above 56 per cent.

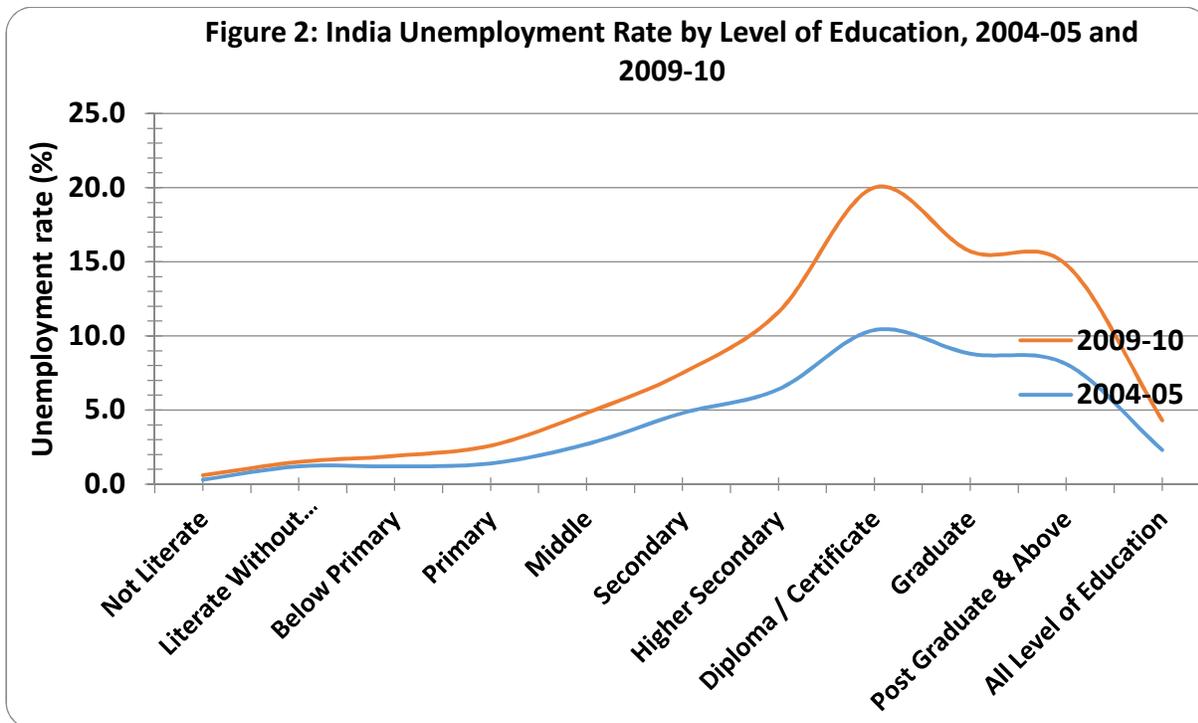
In OECD countries, an upper secondary education is typically considered the minimum needed to be competitive in the labour market. The average unemployment rate among those who have completed this level of education is close to 5 percentage points lower than among those who do not have (OECD, 2011).

In contrast with developed countries, the relationship between unemployment amongst the youth and average years of schooling is positive in developing countries (Islam, 2013). This apparently perverse result may not appear very surprising if one remembers the observations made above about the nature

of the labour market in such countries, especially the segmented nature of the labour market and the demand for educated labour being limited mainly to the modern sectors of an economy. In such a situation, an expansion of education, especially at the secondary and tertiary levels may not correspond directly with the demand for the products. This becomes clear from country level data on unemployment by levels of education. For purposes of illustration, such data for Bangladesh, and India are presented in figures 1, and 2.



Source: Constructed by using data from BBS (2010)



Source: Constructed by using data from the National Sample Survey data reported in Government of India (2013)

For Bangladesh, if one ignores the inexplicable dip in the rate of unemployment for degree holders, one can see a positive relationship between the rate of unemployment and level of education _ those with higher education suffer from higher rate of unemployment! The relationship is similar in the case of India, with of course some variation in details. In India, the rate of unemployment is particularly high for diploma/certificate holders. But more significantly, those with secondary and tertiary education suffer from higher unemployment rates than those who are illiterate or have only primary education¹⁶. Do these data imply that education is not of much use in employment? Why then is there so much demand for higher education? In order to understand this, it may be useful to look at some more data relating to employment and education.

Table 9 presents data on the distribution of various sectors' employment by level of education as well as the share of the sectors in total employment for Bangladesh. It is clear from this data that employment in the major sectors of the economy like agriculture, trade, manufacturing, and construction is dominated by workers who are either illiterate or have less than primary education. On the other hand,

¹⁶ A positive relationship between the rate of unemployment and level of education is found for Sri Lanka as well. See World Bank(2012). See Mahmud (2014) for possible explanations of the positive relationship between the rate of unemployment and level of education.

Table 9: Bangladesh: Distribution of Employed Persons (15 years and over) by Sector and Level of Education, 2010

Industry	Total	No education	Class I-V	Class VI-VIII	Class IX-X	SSC	HSC	Degree and higher	Share in total employment (%) ¹⁷
Agriculture, forestry and fishing	100	46.5	23.3	13.0	9.0	5.0	2.1	1.1	47.56
Manufacturing	100	35.4	26.0	17.1	9.0	6.5	3.1	2.9	12.47
Electricity, gas, etc.	100	8.2	11.6	32.4	13.2	12.1	10.3	12.2	0.18
Water supply, sewerage, etc.	100	38.2	15.0	27.1	2.4	3.4	0	14.0	0.05
Construction	100	46.3	28.7	13.4	5.7	2.7	1.6	1.4	4.84
Wholesale and retail trade	100	36.1	22.9	15.0	9.9	8.3	4.1	3.7	13.97
Transportation and storage	100	53.9	24.3	10.9	5.0	3.2	1.6	1.0	7.36
Hotel and food	100	35.9	31.2	13.6	10.1	5.3	1.9	2.0	1.54
Information, and communication	100	10.2	10.1	38.5	5.6	10.6	7.7	17.5	0.10
Financial services	100	4.0	7.2	13.7	9.2	9.9	16.7	39.3	0.67
Real estate	100	26.4	20.5	11.2	14.0	14.1	3.0	10.8	0.06
Professional, scientific and technical	100	13.4	11.4	9.7	8.5	17.4	8.3	31.3	0.21
Administration and support services	100	6.2	5.1	16.7	11.3	15.3	15.9	29.5	0.90
Public administration	100	5.4	3.6	27.0	11.7	21.6	15.1	15.8	1.0
Education	100	6.0	2.6	10.0	5.1	12.6	17.8	45.9	2.38
Health and social work	100	17.5	11.0	13.7	10.4	13.3	13.7	20.3	0.80
Other services	100	26.2	26.8	19.7	11.7	6.5	3.3	5.8	4.36
Total	100	40.8	23.0	14.1	8.7	6.0	3.4	4.0	100

Source: Bangladesh Bureau of Statistics (2010).

¹⁷ The figures in this column do not add up to 100 because some minor sectors like mining and quarrying, recycling, entertainment and recreation, household employment, etc. have not been included in the table.

sectors where the proportion of employment with secondary and higher levels of education is high (say at least 20 per cent), e.g., electricity and gas, information and communication, professional and scientific work, administration including public administration, education, real estate, financial services, etc. account for very small proportions of total employment. In the circumstances, it is possible to hypothesize that those with secondary or higher levels of education would look for work outside sectors like agriculture, transport, construction, etc. and keep waiting until they find a job that matches their aspiration. And that, in turn, may, at least partly, explain the observed relationship between education and unemployment. Education _ especially secondary and higher level _ is most likely being used as a mechanism for getting jobs in the modern sectors of the economy.

That education may provide a means of another type of mobility is indicated by data on the distribution of employment by status and level of education for Bangladesh that are presented in Table 10. It may be noted from that data that for those who have no education or less than primary level, the major categories of employment are self-employment and day labourer in both agriculture and non-agriculture. On the other hand, even for those with just secondary education, regular paid employee accounts for the highest share followed by unpaid family work. For this level of education, the share of day labourer and other irregular paid worker is very low (and falls drastically compared to those with no or primary education). If one looks at those with post secondary level education, the share of regular paid employee shows a big jump (nearly two-thirds or more for those with degree and higher level education). Thus it seems that education provides one with entry to salaried jobs, and one perhaps is willing to accept a period of unemployment in order to get one. Moreover, the fact that the rate of return to education is quite significant, and in some cases is found to be higher for higher levels of education implies that it must be economically worthwhile to accept a period of unemployment.

Apart from mobility in terms of the sector and status in employment, education also brings direct income benefit which is already apparent from the rate of return estimates. The income premium due to education can be seen by direct comparison of incomes associated with different levels of education. Data on other developing countries (e.g., Malawi and Tanzania) serve to illustrate the point. In Malawi, for example, education at each level yields an income premium ranging from 44 per cent between literates without primary level certificate and those with primary certificate to a staggering 200 per cent difference between secondary certificate and higher degrees. Similar differences can be seen in the case of paid employment in Tanzania. Data on Tanzania shows that the education premium can be earned in self-employment also, although the difference is much lower than in paid employment (Islam and Islam, forthcoming, 2015).

Table 10: Bangladesh: Distribution of Employed Persons by Status in Employment and Education, 2010

Status in employment	Total	No education	Class I-V	Class VI-VIII	Class IX-X	SSC	HSC	Bachelor Degree	Master	Technical and vocational
Regular paid employee	14.6	5.1	10.1	21.9	17.1	27.4	40.6	63.0	70.7	48.7
Employer	0.2	0.2	0.2	0.1	0.3	0.3	0.6	0.7	0.9	0
Self-employed (agr)	22.8	28.6	21.3	17.4	19.8	19.0	15.9	10.0	6.1	7.5
Self-employed (non-agr)	18.0	17.7	19.5	16.7	15.9	19.3	17.9	15.8	23.6	24.2
Unpaid family worker	21.8	16.9	23.9	27.7	34.9	25.8	18.6	9.3	0	16.3
Irregular paid worker	2.7	1.9	3.3	3.6	3.5	3.4	3.8	2.4	0	3.3
Day labourer (agr)	10.7	17.0	10.6	5.6	3.7	2.5	1.7	0	0	0
Day labourer (non-agr)	8.9	11.7	11.0	6.9	4.9	2.7	1.7	0	0	0

Source: BBS (2010)

4.2. Evolution of education and skill requirement with economic growth: some international experience

Two types of changes take place in the structure of economies that experience growth. First, changes occur in the sector composition of the economy through shifts in the relative contribution to GDP and employment of various sectors like agriculture, manufacturing, construction, trade, transport, and services. Second, changes also take place within sectors. For example, the composition of manufacturing changes as the share of simple labour intensive industries declines and that of more capital and skill intensive industries increases. Likewise, the composition of the service sector may also change towards more modern sectors like banking, insurance, communication, and personal and social services, etc. During the early stages of economic development, it is the first type of structural change

that is likely to predominate while in the subsequent stages, structural changes may be more within sectors.

In line with the structural changes outlined above, education and skill requirements of an economy are also likely to vary depending on its stage of development. For most jobs at the early stages of economic development (when traditional sectors like agriculture and simple manufacturing predominate), primary and secondary education may be adequate. For example, farmers with such education may be able to adopt new technologies and farming methods. Likewise, for production workers in simple manufacturing like textiles and garment making, food processing, etc. primary or secondary education may be adequate for them to be able to undergo necessary skill training.

As for skills, in economies at early stages of development, most jobs involve routine manual work that require more of cognitive skills and less of thinking and creativity. But as an economy grows into higher levels of development, the proportion of jobs that require some thinking and higher level skills starts rising. As a result, the need for workers with post secondary education and vocational and technical skills grows.

An illustration of how the nature of jobs and skills requirement of an economy changes is provided by the figures presented in Tables 11 and 12. In the US economy, during the last 30 years of the twentieth century, the proportion of blue collar workers declined from over a third to a quarter. On the other hand, the proportion of technicians, professionals and managers increased substantially _ from less than a fourth in 1969 to a third in 1999. Jobs relating to sales and services also increased. This obviously had implications for skill requirements. The demand for cognitive skills and routine manual work skills declined while that for expert thinking and complex communication increased. When demand for education and skill requirement undergoes such changes, the education and skill training system of a country has to undergo reforms to be able to cater to the changing demand. How some countries that attained economic growth in recent decades addressed this challenge is illustrated by the experiences of countries like Republic of Korea, and Taiwan (China) during the 1970s and 1980s and that of Malaysia since the 1980s.

Table 11: Changing Mix of Jobs in the US Economy, 1969-1999

Type of jobs	Percentage of adult employment	
	1969	1999
Blue collar workers	38	25
Administrative and support workers	18	14
Sales related occupations	8	12
Technicians, professionals, managers and administrators	22	33
Service workers	12	14

Source: Levy and Murnane (2004).

Table 12: Changing Skills Demand in the US Economy, 1969-1999

Type of skills	Percentage change during 1969-1999
Routine cognitive	-7.5
Routine manual	-2.9
Expert thinking	+8.4
Complex communication	+13.5

Source: Jerald (2009)

Republic of Korea once had a typical labour surplus economy, and the Government intervened selectively to promote industrialization. During the early phase of export oriented industrialization, it benefited from the availability of workers that had some basic education (as the country had already achieved universal primary education in 1960 (Tzannatos and Geraint, 1997). However, once the surplus was exhausted (by about mid-1970s), the Government embarked on a strategy of structural change towards heavy-chemical industries involving high technology. That created demand for higher level of education and skills.

Like in industrialization, the Government was playing an important role in education and training as well. During the 1960s, it expanded vocational education substantially. However, the formal vocational schools were not in a position to meet the changing demand for skilled manpower that emerged in the wake of structural change in industries. The Government responded to the situation by undertaking measures to strengthen technical and vocational education at the secondary level by expanding the number of public vocational training institutes and legally mandating in-plant vocational training in most private enterprises. By enacting a law for vocational training in 1976, large companies in certain industries were required to provide in-plant training for a certain proportion of their employees. Those companies were obliged to pay a training levy if they did not provide in-plant training¹⁸.

In line with the manpower needs of heavy and chemical industries, the government re-organized five-year junior technical colleges (comprising three years of secondary and two years of post-secondary) into two-year junior vocational colleges directed towards the preparation of technicians and engineers who would be able to perform specific technical tasks in the heavy and chemical industrial fields.

In the 1980s, the Government of Korea expanded opportunities for higher education in order to meet social demand. But there was a decline in enrolment in vocational secondary schools and in in-plant training. That resulted in a shortage of skilled workers in industries. Faced with that and in order to meet the changing demand, the Government introduced various measures to strengthen the vocational education and training system. The target was to increase the enrolment of vocational senior secondary

¹⁸This mandate initially applied to firms with more than 500 employees, and the number was gradually reduced to 150 and 100 in 1991 and 1995 respectively. For further details, see KRIVET (Undated).

schools and increase the the enrolment ratio of general versus vocational senior secondary schools from 68:32 to 50:50 by 1995.

Based on the performance of the reforms mentioned above, further reforms in the vocational education and training system were undertaken during the 1990s. In addition, private companies began to emphasize skill upgrading for their workers while placing less emphasis on the initial training for workers prior to employment. What is clear from the various reforms introduced by the Government of Korea and efforts by the private sector is that there was awareness about the changing skill requirements and steps were being taken to respond to the changes.

Taiwan (China) provides another good example of how the education and skill training system was modified to respond to the changing demand for education and skills as the country went through various stages of development. When industrialization started, the country benefited from an initial high literacy rate. As the composition of the industrial sector started changing during the 1960s, the government's emphasis shifted from compulsory primary education to compulsory secondary education¹⁹. Total expenditure on education increased from 2.1 per cent of GNP (11 per cent of the budget) in 1955 to 4.6 per cent of GNP (20 per cent of the budget) in 1970. Expenditure per student increased sixfold between 1960 and 1975.

When the economy was about to face a scarcity of skilled workers, emphasis was given to vocational training as opposed to academic education at the secondary level. As the share of labour in non-agricultural sector started increasing, vocational training increased sixfold between 1966 and 1974. Only 40 per cent of Taiwan's high school students were in the vocational track in 1963; by 1972, the figure rose to 52 per cent and by 1980, to almost 70 per cent. It is thus clear that like in the Republic of Korea, there was awareness in Taiwan about the changing nature of demand for human capital and the government responded flexibly by shifting the emphasis of the structure of education to keep it in line with the changing needs of the economy (Ranis, 1995, p. 524).

Malaysia is another country that attained rapid economic growth and underwent significant structural changes since the early 1980s. A few aspects of changes on the sector composition of employment are worth noting²⁰. First, there has been sharp decline in the share of agriculture. Second, and as is common with countries experiencing economic growth, the share of manufacturing increased initially and then declined. Third, the share of finance, real estate and various services increased substantially.

The structural change in the economy and employment got reflected in the occupational structure (Islam and Islam, forthcoming). As expected, the share of agriculture declined sharply from over a third to a little over 11 per cent. Likewise, the share of production workers also declined after an initial period of economic growth (i.e., since the 1990s). Occupations that registered substantial increase in their share include administrators and managers, professionals and technicians, service and sales workers and

¹⁹ The data presented in this and the next paragraph are from Ranis (1995).

²⁰ Relevant data are presented in Islam and Islam (forthcoming).

skilled workers (the last indicated by the increase in the share “craft and related trade workers”). There has thus been a clear change in the structure of occupations _first from agriculture to production workers (presumably in manufacturing), and then to more knowledge and skill oriented occupations.

How did policy makers in Malaysia respond to the changes in education and skill requirements that came along with the changes in the structure of employment and occupation described above? As in the Republic of Korea, the Government of Malaysia undertook steps to expand post-secondary education including vocational education and training. The result was a shift in the composition of the labour force from one of predominance of primary educated to that of secondary and tertiary educated (Table 13). In 2011 nearly one in four members of the labour force had tertiary education compared to just over six per cent in 1982 and less than one in ten in 1990. The proportion with secondary education increased to 55 per cent in 2000 and has remained at that level since then.

Table 13: Malaysia: Distribution of Labour Force by Educational Attainment, 1982-2011

Level of education	1982	1990	2000	2010
No formal education	15.44	9.60	5.57	3.17
Primary	41.92	33.79	24.91	16.86
Secondary	36.52	24.91	55.05	55.46
Tertiary	6.11	16.86	14.47	24.51

Source: Department of Statistics Malaysia: Labour Force Survey Time Series Data, 1982-2011.

It needs to be noted, however, that an increase in the proportion of labour force with secondary and tertiary education does not tell the whole story because the key question is what type of qualifications within those categories are needed in the economy and whether the education system of the country is capable of meeting that requirement. If fragmentary evidence is taken as an indicator, there is a mismatch between the supply of and demand for graduates in Malaysia. One study (Fleming and Soborg, 2012) quoting data from the Ministry of Higher Education reports that 50 per cent of the graduates in 2006 and 2007 had difficulty finding employment, and 28 per cent remained unemployed after one year of graduating while another 27 per cent went for further studies and re-training or were still waiting for jobs (p.14). The country thus faced the typical situation of employers having difficulty finding the right skills while graduates remained unemployed. That, in turn, created difficulties in the country’s transformation process from a middle income to higher income status and from a producer of basic industrial products to one producing high technology products.

The report of the National Economic Advisory Council titled New Economic Model for Malaysia (NEAC, 2010) recognized the problem mentioned above as the “middle income trap”, and underscored the need for a shift in the approach to education from “rote learning” to “creative and critical thinking” because an advanced economy needs more of the latter kind of skills. The report also pointed out the

importance of skill upgrading through continuous education and training and suggested partnership between industry and government in attaining that goal. It may be recalled in this context that Republic of Korea also adopted a policy of private sector participation in skill training when the economy moved from labour intensive manufacturing to heavy and chemical industries.

The need for emphasis on different levels (and types) of education in different economies is also illustrated by the projections of gap between demand and supply of manpower with various levels of education in China and India (Table 14). Projections for the year 2020 made by McKinsey Global Institute (2012) and presented in Table 14 point out interesting differences between the two countries that might otherwise seem to be at similar level of development. While China is projected to experience a shortage of manpower with tertiary education, India is projected to experience an excess of manpower with that level of education but a shortage of secondary level qualification. What is, however, common between the two countries is that they will have excess supply of primary educated manpower. It thus seems to be clear that both the countries need to move beyond producing manpower with just basic education because they need higher level of education and skills. With respect to post-primary education, India appears to need an expansion of secondary education more than its tertiary education. This may reflect two phenomena: while demand for manpower with secondary education may be growing at high rates, there may already have been a rapid expansion of tertiary education compared to what the economy can absorb. In China, the opposite may have happened, and the country now needs to move more towards expansion of tertiary education.

Table 14: Projected Demand and Supply of Manpower with Different Levels of Education, China and India, 2020 (million)

Level of education	Demand	Supply	Gap (%)
China			
Tertiary	140	117	-16
Secondary	509	514	+1
Primary	172	192	+10
India			
Tertiary	68	74	+8
Secondary	133	120	-10
Primary	319	346	+7

Source: McKinsey Global Institute (2012)

5. Looking Ahead: The Challenge of Human Capital Development in Bangladesh

The data and analysis presented in this paper should enable one to draw a few conclusions regarding the relationship between the requirement of manpower with different levels of education and skills at different levels of development. First, at the early stage of economic development of a country, basic

education may be adequate for many of the jobs that may open up in segments of the economy that register high growth (e.g., manufacturing, construction and services). However, as an economy attains higher levels of development and the composition of the sectors attaining higher growth changes, the requirements of education and skills are also likely to change. On the side of general education, there would be a growing need for people with post-primary education, and at a later stage, post-secondary education. On the side of skills, requirements evolve from basic cognitive skills to ones with ability to think and create. A country's education and skill development system must undertake reforms to gear itself to meeting such changing requirements. Experience also shows that there may often be a tendency to simply expand higher education or vocational education without due regard to the type of education and skills for which demand is expanding. The result often is unemployment of the educated. A careful examination of the factors responsible for such a situation may show that that is more due to the expansion of education and training that is not required rather than due to the inadequacy of education itself.

It may be useful to look at where Bangladesh is located today, especially in relation to the international experience reviewed above. A few indicators may be helpful. First, the distribution of labour force (or employed labour force) by levels of education. Data presented in Table 15 show that nearly two-thirds of the total labour force either have no education or only primary education. Only one in a thousand has vocational or technical education.

Table 15: Bangladesh: Distribution of Labour Force by Levels of Education, 2010

Levels of education	Percentage of labour force	Percentage of employment
No education	40.1	40.8
Primary	22.8	23.0
Secondary	33.2	32.2
Tertiary	3.7	3.8
Technical/vocational education	0.1	0.2

Source: BBS, Labour Force Survey, 2010.

What is the situation regarding educational efforts? Looking only at enrolment (which does not say anything about quality of education), one would note that important strides have been made in the area of primary education where enrolment has reached the maximum that can be targeted (Table 16). Progress has also been made in the areas of secondary and tertiary education, but there is a long way to go with regard to both those levels. More worrisome is the slow progress in the area of secondary enrolment after 2000. Even more disappointing is the proportion of technical and vocational education in total secondary education (Table 17). In 2007, this figure was less than three per cent in Bangladesh compared to over 12 and 18 per cent in Rep of Korea and China respectively.

Table 16: Bangladesh: Enrolment as Percentage of Population in Relevant Age Groups, 1980-2011

Levels	1980	1998	2011
Primary	61	122	114
Secondary	18	47	51
Tertiary	3	5	13

Source: World Bank: World Development Indicators, various years

Table 17: Enrolment in Vocational and Technical Education as Percentage of Secondary Enrolment

Country	2000	2007/2008
Bangladesh	1.02	2.43
China	15.1	18.64
Republic of Korea	19.0	12.31
Malaysia	5.96	6.31

Source: World Bank: World development Indicators, various years

Given the current situation in Bangladesh described above and future growth prospects (as well as potentials), what kind of targets can/should the country set for itself in the area of human capital for the next decade and a half? Some indicative figures are presented in Table 18. Before looking at these figures, it may be useful to note a few points. First, the figures in Table 18 are not projections based on any quantitative model. They are simply based on the review of international experiences (presented in the earlier section of the present paper) of countries that have gone through a process of economic development that Bangladesh is going through now and would like to see unfold in the future. More specifically, the question that have been used as a basis for the figures is whether Bangladesh can aim at attaining a level in 2030 that a country like Malaysia, for example, had a few years ago. This, combined with what Korea and Taiwan looked like at comparable levels of development should not be too unrealistic as a goal and as a basis for some planning and policy making for Bangladesh. The “targets” mentioned in Table 18 are thus merely “indicative”, and should be treated as just suggestions.

Second, although human capital represents the supply side of the growth equation and is an important factor, investment in education and skill development has to be in line with the rate and pattern of economic growth. It is in that respect that one has to look at the question very carefully. Whether it would be realistic for Bangladesh to aim at a different trajectory of human capital development would depend critically on what rate and pattern of economic growth unfolds. By a “different trajectory”, we mean a greater focus on secondary and tertiary education (without of course ignoring the importance of primary education, especially of raising quality at that level) as well as on vocational and technical education. If the rate of economic growth continues to hover around 6 per cent per annum and the

pattern of growth does not change much²¹, business as usual in human capital development may be good enough. However, if the economy changes gear with the growth trajectory shifting to one of 7-8 per cent per annum and the composition of the manufacturing and service sectors changes considerably, then the strategy for human capital development will also have to change accordingly, and the figures of Table 18 may start looking relevant.

Table 18: Bangladesh : Some Indicative Targets in Education and Skill Development for 2030

	Current	Possible target for 2030
Percentage of labour force with		
No formal education	40	10
Primary	23	20
Secondary	33	50
Tertiary	4	12
Technical/vocational education	0.1	8
Enrolment in education at		
Primary level	114	100
Secondary level	51	66*
Tertiary level	13	36*
Enrolment in vocational/technical education as percentage of secondary enrolment	1	10**

Notes: * These are levels prevailing in Malaysia in 2011. ** This is a bit lower than the level prevailing in Rep of Korea in 2008.

Third, even in high growth scenario, the limitations of a narrowly conceived supply side oriented strategy would need to be borne in mind. That education and training by themselves may not provide the solution is almost a banal remark. One simply has to recall (from data presented earlier in this paper) that the relationship between education and unemployment has been found positive, implying that the quantitative approach of providing more education and training cannot be the solution to the issue of human resource development. In this regard, it would be worth recalling a few points that emerged from a study (Rahman, et al., 2012) on growth oriented sectors and demand for skills in Bangladesh.

²¹ It may be noted that for almost two decades, growth in the manufacturing sector has been almost entirely driven by ready made garments and the rest of the economy remains focused on food grains and services. The sectors with growth potential identified by the Sixth Five Year Plan of Bangladesh (2011-2015) also include the familiar ones like RMG, leather and leather products, agro-processing, ship building, ICT, etc.

- In defining the level of skills of workers, certificates obtained from formal institutions of the technical and vocational education system (TVET) are regarded as only one _ and not even the major _ amongst several criteria. The other criteria (and those that are considered to be more important are the duration of on-the-job training, duration of overall work experience, an assessment of tasks that can be performed by a worker.
- Nearly two-thirds of the employers surveyed considered the quality of training offered by formal institutions as “inadequate”. A similar proportion of the employers found training to be **not** relevant for their needs.
- The above-mentioned study quoted a survey conducted by the World Bank in 2006 showing that only 9 per cent of those graduating from training institutions were employed (after a year), 45 per cent went for higher studies, and the rest (i.e., a little less than half) were unemployed.

The above findings concerning formal technical and vocational training imply that mere expansion of training capacity cannot be the solution to skill gaps that may exist²². It would be essential to reform the training system by taking into account the factors that are responsible for the situation mentioned above. For example, Rahman, et al. 2012) mentions that the poor performance of graduates of the TVET system is mainly due to the absence of linkage between the system and the labour market²³, outdated and often theoretical nature of the course curricula, outdated mode of teaching, etc.

Issues of quality and relevance to the labour market may be raised about general education as well. Hence, rather than talking generally about raising the level of education of the labour force, it is important to look at ways and means of providing more as well as better education to the population as a whole and to prospective members of the labour force.

6. Concluding Observations

The main purpose of the present paper has been to analyze the challenge of human capital development faced by Bangladesh in its quest for inclusive development. Two things have been done in that context. First, alternative projections of employment have been made by using an aggregate projection model that involves the use of employment elasticity with respect to output growth. By using the projections, it has been argued that two approaches may be adopted for making full use of the surplus labour that is available in the country. In the first approach, with the pattern of growth remaining unchanged, the country will need to attain a much higher rate of GDP growth (in the range of 8 per cent per annum) than at present if surplus labour were to be exhausted in about 15 years. Alternatively, if the pattern of growth can be changed, i.e., with a much higher rate of growth of manufacturing industries (in the range of 12-13 per cent per annum) without changing the current level of employment intensity, the same outcome can be achieved even with 6.5 per cent GDP growth per

²²In fact, the degree of capacity utilization in vocational education and training institutions is found to be low (Alamgir, 2013).

²³Other studies (e.g., World Bank, 2013; and EIU (2014) also note the disconnect between the education and skills training system and the labour market).

annum. Both the approaches will require much more active and innovative approach to policy making than has been seen in the country during the past couple of decades or so.

The second thing done in the paper is to provide a broad outline of the challenge in the area of education and skill development. This has been done by adopting a comparative approach and providing an indicative scenario with possible targets for 2030. This indicative scenario points out major challenges in the areas of secondary and post-secondary education and TVET. Furthermore, the challenge is not merely one of quantity but more importantly, one of making the education and training system more relevant to what is needed by the labour market. However, it has also been pointed out that the scenario outlined will be relevant only if the rate of economic growth and its pattern changes substantially in the medium to long term. It is, of course, possible to adopt different approaches to this issue. One may be to argue that unless the country moves to a higher growth path and the economy undergoes significant structural changes, the targets of human capital mentioned above may result in surpluses and wastages. The other approach may be to argue that the country should ready its human capital base to respond to the anticipated needs generated by a growing and changing economy. Whatever approach is adopted, there should be no disagreement on the need to attach priority to at least secondary education and vocational education and training so that supply of such manpower does not become a bottleneck. That returns to secondary education has started to exceed that of primary education in many developing countries is indicative of the importance of such education in a growing economy.

Once the broad direction outlined above are agreed upon, the details of needed policies and programmes can be worked out. It should be mentioned here that attaching priority to secondary education must not be at the expense of primary education. In fact, the achievement in the latter would need to be consolidated by improving the quality of education at that level. If increasing enrolment was equivalent to reaping the low-hanging fruits, improving quality would be like reaching the branches that are beyond easy reach. But serious efforts would have to be made to reach the required heights.

Increasing enrolment at the secondary level without compromising on quality will require action on a number of fronts (all of which cannot be exhaustively enumerated in a single paper like this). Had it been simply a matter of demand side intervention, stipends for students would have been adequate to attain the desired goal. But the availability of facilities, and more importantly, the quality of education and its relevance for the world of work are equally important elements in the equation; and it would be essential to address those issues²⁴.

As for vocational education and training, a few issues (e.g., the quality and relevance) have already been identified in the previous section. Here, apart from resources, the involvement of employers in financing as well as in designing and implementing the programmes would be an important consideration. They

²⁴It also needs to be noted that access to good quality education can be an important factor influencing inequality in access to opportunities as well as in outcomes in the form of income. The issue of income inequality can be addressed through the education route by improving the quality of education to which lower income people have access (Islam, 2014 b).

may naturally take a short term and somewhat myopic view of formal training, especially given the limited usefulness of the graduates from such systems. However, if the value of such training can be demonstrated, they may be more willing to participate in and share the costs of such training. There are demonstrated ways of making them share the costs, and the policy makers may easily look at alternative approaches that have worked in similar settings (i.e., in other countries like Korea, Malaysia, and Singapore). This, clearly is an area where public-private partnership can be tried out and where positive outcomes would not be difficult to achieve.

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