

# The role of technical and vocational education in the national development of Bangladesh

GAZI MAHABUBUL ALAM

Research and Evaluation Division, BRAC, Dhaka, Bangladesh

Received 23 May 2007; accepted in revised form 27 March 2008

---

Education is a basic human right and considered by many as a key tool for national development. However, this tenet has been challenged by several economists, especially Pritchett (1996). His empirical analysis suggests that many countries, whilst having a large educated population, remain unable to make significant progress. It is also claimed that third world development is sluggish. These findings generate the question: while education increases globally, what exactly is it that hinders a country's progression? There are no short answers, but a major area of concern is the type and quality of education available. Scholars argue that countries need a well-diversified education system in order to gain sustainable development through education. This paper explores the situation for Bangladesh for its development by providing technical and vocational education (*Asia-Pacific Journal of Cooperative Education*, 9(1), 25-44).

Key Words: Employment Pattern, Human Capital, Job Market, National Development, Person Power, Rate of Return, Technical and Vocational Education.

---

The World Bank (2002) described Bangladesh as lagging behind the economic growth of technical and technological modernization, but went on to note that "Bangladesh's greatest strength is its people. Ethnically homogeneous and firmly wedded after much turmoil to the intuitions, they are well known for hard work and resilience under stress" (World Bank, 2002, p. 6).

The World Bank also noted that Bangladesh has no more alternatives in order to gain development, except properly utilizing its population. The World Bank (2002), United Nations Development Programme (UNDP) (1999), United Nations Educational, Scientific and Cultural Organization (UNESCO) (2000) all suggest that Bangladesh urgently needs to utilize its over-crowded population and large labor market. To improve the quality of employees, Bangladesh's people need to be trained in modern professional-based and job-oriented technical, technological and vocational programs. World Bank (2002) data reveals that, in the last 25 years, Bangladesh's economy has only developed at a 4% annual gross rate for its domestic product (GDP), leaving it still poor and dependent on foreign aid for its development; particularly due to political instability. Local politicians and privileged people blame the continuing deprived state of Bangladesh on its relatively recent independence.

Again the World Bank (2002) report suggests that Bangladesh's economy and human development could have grown faster than its actual progression in the last 25 years (i.e., since independence in 1971), if it had earlier taken substantial steps in educational development. For example, the economy of South Korea, Thailand and Malaysia reached upper middle-income status within about 25 years after achieving political stability. This outstanding improvement in living standards and quality of life for the citizens was achieved

\*Correspondence to: Gazi Alam, email: alam.gm@brac.net

by securing an appropriate educational atmosphere in order to provide high quality education in different technical and professional fields (Figure 1).

Education is generally viewed as crucial for rapid economic growth, and essential if we wish to increase the productivity of the poor by reducing fertility and providing people with the skills they need to participate fully in the economy and in society (Fagerlind & Saha, 1989). Therefore, it is important for Bangladesh to offer different educational programs in terms of population, social requirements, and globalization, and so on. The Bangladesh Bureau of Educational Information and Statistics (BANBEIS) noted that, since independence many attempts have been made for the renewal educational policy, but that the desired development has yet to take place, because most of the educational policies and developmental steps were taken for ‘general education’ (BANBEIS, 2007).

Bennell (1996) observes that all countries, especially developing countries, need balanced development through *all* of the educational sectors in order to make significant progress in terms of national development. Presently Bangladesh is mainly offering education in ‘general subjects, but to achieve development, it must offer a variety of courses for disciplines such as technical, vocational, professional, agricultural, and so on, because the country needs a balanced distribution of manpower for all professions (Alam, 2003, 2007), so that the vast population of Bangladesh can contribute to economical growth by participating in different professions. Additionally, if people get involved in different professions naturally, they will may their own professions, and that may help in the development of social equity, respect and freedom.

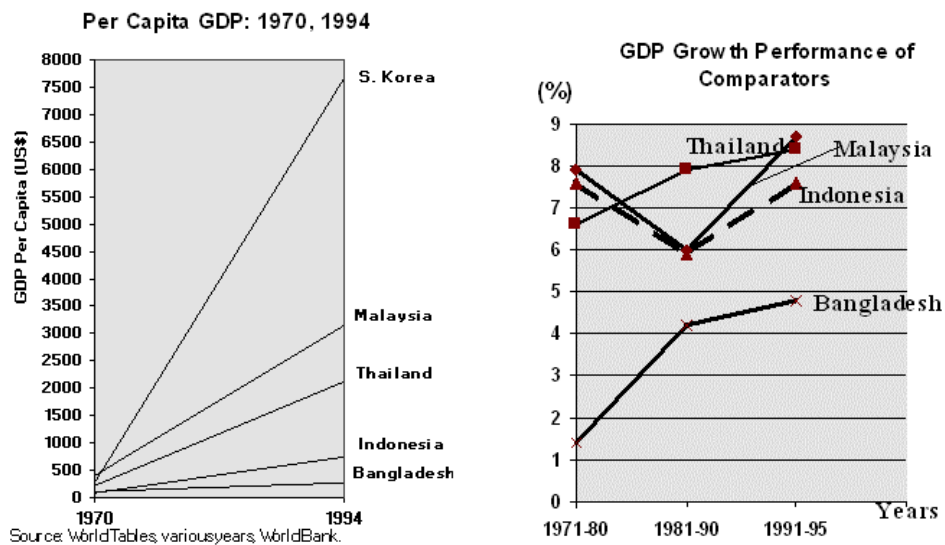


FIGURE 1  
A comparison of Bangladesh economic growth with some other Asian nations (World Bank, 2002)

## EDUCATION AND NATIONAL DEVELOPMENT

Before considering the role of *technical and vocational education* (TVE) in Bangladesh, initially the concept of national development and justification for the choice of both the economic and community development indicators are examined.

### *National Development*

Fagerlind and Saha (1989) argue that there is a value-free meaning contained in the notion of development over and above the ideological and political uses of the concept. This value-free meaning is thought to mean that:

Development can mean the actualization of an implicit potentiality, the simplest example being the patterned growth maturation of a seed or an initial germ-cell, to the full adult from the individual plant, or animal or human person. Without stipulating, at this point, anything too weighty or too precise, this can also certainly seem to apply to man and his social situations. (Fletcher, 1974, p. 43)

Thomas and Potter (1992), go on to argue that “All definitions of development contain the central notion of a process of change from a less desirable to a more desirable kind of society... development of what? How is what is desirable defined, and by whom? How is progression to be achieved?” (p. 18).

Thomas and Potter’s (1992) summary of the concept of development seems clear cut, but also raises questions. For example, since the 1950s there have been at least three main schools of thought on the definitions and approaches towards development. The first school is that of the *economists*. Economists such as Bernstein, Shultz and Psacharapoulos view development primarily in terms of a nation’s relative prosperity. A nation’s development is thus assessed by measuring any increase in its gross national product (GNP) (Thomas & Potter, 1992). Development here is seen as achieved through investing in human capital, and “raising the productivity capacities of societies” (Thomas & Potter, 1992, p. 18).

The second school of thought is that of the *sociologists* such as McClelland, Weber, Inkeles, and Smith. They propose that modernizing a country leads to economic development, and a modern society. With modernization as the main goal, the emphasis is placed on education; technology and industrialization are seen as the agents of transformation. Underdeveloped countries can, they say, be transformed into modern countries with similar economies, societies and politics as those in the prosperous West (Little, 1999; Thomas & Potter, 1992).

In the 1960s and 1970s, another group of *theorists* such as Seers, Sen and Edwards began to consider development from a human needs perspective. The emphasis here was not so heavily focused on economic growth as the primary indicator of development, but more on assessing the needs of individuals: their freedom, equity, participation and empowerment to fulfill their potential capabilities (Thomas & Potter, 1992). Sen (1999), for example, argues that:

If, instead, the focus is ultimately on the expansion of human freedom to live the kind of lives that people have reason to value, then the role of economic growth in expanding these opportunities has to be integrated into that more foundational understanding of the process of development as expansion of human capability to lead more worthwhile and more free lives. (p. 295)

TABLE 1  
Some indexes of development for five underdeveloped countries including Bangladesh

Country	HDI rank	GDP per Capita (PPP\$)	Adult literacy	Education index rate	Life expectancy	Corrupt country index placing <sup>1</sup>
Bangladesh	145	1,602	41.3	0.40	0.57	01
Nigeria	148	896	63.9	0.58	0.44	01
Angola	161	2,187	42.0	0.36	0.34	03
Madagascar	147	840	66.5	0.59	0.46	03
Kenya	134	1,022	82.4	0.72	0.43	04

<sup>1</sup> Corrupt country index placing according to Transparency International

TABLE 2  
Some indexes of development for five developed countries (UNDP, 2005)

Country	HDI rank	GDP per Capita (PPP\$)	Adult literacy rate	Education index	Life expectancy index	Transparency country placing <sup>2</sup>
Finland	10	24,996	..1	0.99	0.77	01
Denmark	14	27,627	..1	0.98	0.85	02
Iceland	7	29,581	..1	0.96	0.90	03
Sweden	2	24,277	..1	0.99	0.91	04
Canada	3	27,840	..1	0.98	0.90	05

<sup>2</sup> Transparency rating according to Transparency International

Before the 1990s, the economists carried the strongest voice. The argument for investing in human capital through investment in education was considered to lead to higher rates of return (both private and social) that would far outweigh the initial investment. Education policies in both developing and underdeveloped countries reacted to this by implementing programs which led to massive expansion in the provision of education. In some countries, this approach seemed to work (e.g., in East Asia) (World Bank, 1995) resulting in industrialization and, to some degree, modernization. But in other countries, such as Bangladesh, the results in terms of economic indicators have been disappointing (World Bank, 2002).

By the 1990s, a more holistic view of development was beginning to take centre stage, especially in organizations such as UNESCO and UNDP. From this perspective, human development is not just measured in terms of the economy but also in terms of freedom, equity (access to education, health), participation and quality of life. The UNDP (2002, p. 2) defines this wider meaning thus:

Human development is about much more than the raising of national incomes. It is about creating an environment in which people can develop their full potential and lead productive, creative lives in accordance with their needs and interests. People are the real wealth of nations. Development is thus about expanding the choices people have to lead lives that they value. And it is thus about more than economic growth, which is only a means – if a very important one – of enlarging people's choices.

The author support the view that national development must be a country's development in terms of its economic and social freedom. He also considers that economic freedom and social freedom are interrelated ; one cannot succeed without the other (Thomson, 1981). To increase national economic development, a country must have social freedom and, to achieve social development, a country must have economic freedom. Data will be provided to support this assertion.

It is important to note that this comparison does not consider the *quality* of education provided in the countries included. Furthermore, GDP has been calculated so as to include foreign aid received by underdeveloped countries from developed countries. In some countries, a lower income (GNP) produces a better quality of life, due to a good balance between income and the purchasing power controlling the value of basic goods. The placing of corruption and transparency column (Tables 1 & 2) is a key indicator, as transparency is an aspect of social development that can help to achieve economic development, and also human development. Conversely, corruption is an aspect of social decadence that will hinder any level of national development (Alam, 2003).

The tables indicate that underdeveloped countries have a low GDP as well as a low Human Development Index (HDI), while developed countries have a higher GDP and also a higher HDI. Therefore, economic freedom and social freedom seem to be interrelated. Nevertheless, Lewin (1993), Fagerlind and Saha (1989), and Knight and Sabot (1990) believe that education can play a vital role in national development as we shall see.

#### *The Role of Education in National Development*

The three theoretical perspectives outlined in the previous section consider education to be a key agent of national development, either as a way of developing human capacity, increasing the skilled workforce for modernization, or as a matter of personal freedom, developing capability and empowerment. From the 1940s onwards, and as noted above, education

provision was either considered in terms of producing the requisite 'person power', which the country needed as an investment and which would yield both social and private rates of return, or as a response to social demand (Thomson, 1981). However, due to the popularity of more humanistic theories of development in the 1990s, the World Conference on Education for All (WCEFA) noted that there was a general realization that education was not only the key to economic development and human capacity/productivity building, but that it was also a basic human right (WCEFA, 1990).

In summary, above all, education is a human right and, as such, should receive priority in the allocation of national resources. It is very short-sighted to keep education bound and 'gagged to the role of manufacturing skilled manpower, or to judge one's success by the number of either children or adults who have efficiently undertaken a 'learning package' (Hallak, 1990).

Education was previously seen as fundamental, not only to the economic development, but also to the social and political development within nations and for individuals. Hallak (1990) argues that education is also linked to human resources development, and that this has an impact on more than just economic growth, but also an impact on the wider development of individuals and societies. Education, he argues, contributes to:

- Individual creativity, improved participation in the economic, social and cultural roles in society;
- improved understanding of an individual and their respect for others, thus promoting social cohesion and mutual understanding;
- improvement in health and nutrition;
- improved chances of economic development;
- improved technological development;
- socio-cultural change;
- democracy and equality; and
- ecological development/quality of life (increasing people's awareness of their environments).

Examining this list, it seems clear that for Hallak, modernization and economic development, although desirable, are not the only aspects of human development that are, and should be, enhanced by the provision of education. Participation in social, political and cultural activities and improvements in health as education goals are equally important. Alam (2007) notes that investment in education and training produces benefits for the individual and for society as a whole. Moreover, Alam (2007) observes that education not only benefits those who gain it through increased income, but also helps *overall* social development. The return on investment for society will be a skilled workforce that will enable global competitiveness *and* economic growth, while the return for the individual will be an improved career path, increased earning power *and* a better quality of life. According to Fagerlind and Saha (1989), the concept of 'human capital' suggests that education and training raises the productivity of workers and increases their earnings over their lifetime. But this is not always true for the high proportion of learners and trainees who have gain education leaving certificates. It is the people with the highest level of education, Fagerlind and Saha (1989) observe, who are most likely to benefit from human capital investment.

## THE ROLE OF TECHNICAL AND VOCATIONAL EDUCATION IN NATIONAL DEVELOPMENT

According to Alam (2007), human capital theory has powerful influence on the analysis of labor market. Alam notes that investment in education and training produces benefit both to the individual and to society as a whole. The return on investment for society will be a skilled workforce that will enable global competitiveness and economic growth, while the return of the individual will be a better career path, increased earning and a better quality of life.

According to Fagerlind and Shah (1989) the concept of 'human capital' suggests that education and training raises the productivity of workers, and increases their lifetime earning capacity. According to Alam (2007), governments perceive increased demands for skills when the labor supply shows rapid growth, when employment grows quickly, or when employment increases significantly. They argue that governments have called upon *vocational education and training* (VET) systems to help unemployed young people and older workers get jobs, reduce the burden on higher education, attract foreign investment ensure rapid growth of earnings and employment, and reduce the inequality of earnings between the rich and the poor. But Zymelman (1976) Paschorpoulos (1987) and Tilak (1998) argue that TVE provides a lower *rate of return* (ROR) than general education. However, Bennell (1996) rebuts this ,arguing that even if TVE students are less 'academically brilliant', the ROR for TVE is still high. Colin (1999) suggests that TVE not only prepares skilled labor but also provides general education to the students. Foster also (1965) aggressively criticizes that vocational school is a fallacy in development planning, and points out that vocational education can be effective if the acquired skills are utilized properly. Colin (1999) likewise says that TVE can play vital role for development planning, but he warns that if the policy makers do not make it up-to-date, and TVE schools do not have enough qualified teaching faculty and sufficient facilities to offer quality TVE, it will not be useful. He also claims that these are not limitations of TVE per se, but limitations of the educational policy of the country. Bennell (1996) says that though TVE has been a powerful influence in development planning; indiscriminately offering TVE may have negative impact on development. Arriagada and Ziderman (1992) criticize TVE, saying does not pay an appropriate role in development and claim that the higher investment needed for TVE does not seem to be compensated for by high return. However his definition of TVE can explain a good significant role of TVE in development: "Vocationalization refers to effort by school to include in their curriculum those practical subjects which are likely to generate among the students some basic knowledge, skills and dispositions that might prepare them to think becoming skilled worker or to enter other manual occupations". The World Bank Policy Paper on TVE (1991), says that to get the maximum benefit to national development from TVE certain factors must be considered:

- Well-timed modern courses linked of local and global demand;
- relevant and up-to-date TVE courses need to be developed;
- proper justification in respect of individual country that at which level of schooling is best in offering TVE courses; and
- wider range of TVE courses need to be developed in terms of demand and cost effectiveness (not only for offering various courses but also for duration of the courses, for student classification in terms of their merit, ages, job market, etc.).



Lewin (1993, p. 14) claims that TVE seems to allow us to “kill several birds with the same stone.” Akyeampong (2002) points out that TVE in national educational system not only for its economic contribution but also for its cultural, social and political contribution. International Labor Organization (ILO) (2001) claims that TVE is intended as a bold and courageous step to undertake, with the changing scenario for economic life by developing human capital.

From the discussions above, it seems clear that from the economic, social and political standpoint, national development requires education which is intended to meet a range of different national needs. These include those associated with building an appropriate workforce, and stronger economy, as well a cohesive, literate and healthy society. Economical freedom and social freedom are interrelated; one cannot thrive without the others. Alam (2007) says that without economical growth, social freedom cannot be achieved. Therefore the purpose of education is to provide adequate knowledge to the local community to cope with the professions, and that education will also provide social value, so that people can achieve two developmental things. Moreover, if education programs offered do not provide employment, parents will perceive that investment in education as not worthwhile, because their children do not achieve anything promising for their future as a result of their schooling. Under circumstances where there is no effective enforcement of law to makes primary and secondary schooling compulsory, the number of school-going people will likely decrease. Though this decline might not initially hurt the employment market since there are few job opportunities in Bangladesh, it will impact in terms of social development predominantly in the health and other sensitive sectors through a drop in general literacy and it will hamper future economic growth.

#### *Context Present Situation of Technical and Vocational Education in Bangladesh*

The discussion above indicate that offering different TVE programs may have a significant role to play in achieving national development, but suggest still Bangladesh has not made an ‘epoch-making development’ of TVE. In this section, I discuss the current situation of TVE in Bangladesh.

Jeong (1999) claims that before joining at the labor force, workers need to be trained to be more productive and to perform their tasks properly. Atcharena and Caillods (1999) say that workers need the training before joining the labor force, and also need in-service training to maintain up-to-date skills. But Bangladesh has taken the decision to build more traditional educational institutions rather than TVE institutions, which has resulted in producing graduates rather than skilled person power. TVE is inherently multidisciplinary in nature, and depends to a significant extent on specialists from relevant disciplines in the country, as well as those in developed countries where development has been progressed through multidisciplinary activities (Watts, 1985). So the multidisciplinary nature of TVE may help the students to reach the labor market and further education, with a solid foundation. Under such circumstances, there are many unemployed young people in Bangladesh. Such people engage in socially-undesirable activities such as drug-taking resulting in social problems. The present drop-out rate is high at secondary level (Grades 9-10); about 52% for males, and 58% for females (BANBEIS, 2007). These drop-out students try to join the labor force without any requisite training or skills, because general school curriculum does not have a TVE component. Under the control of Bangladesh Technical Education Board (BTEB), there are only a few schools providing TVE to the local community. Most of the schools are non-

government, and are regulated by NGOs. Though the drop-out rate is high at the secondary school level, polytechnic institutions (of which there are 20-government and 7-Non-government options) offer diploma-level education using an out-dated TVE program to their local community and with limited resources (Oxtoby, 1997).

So drop-out students remain untrained for employment. The number of polytechnic institutions is also low in comparison with most other countries, and the Bangladesh population. One government vocational teachers training institute offers in-service training for the teachers, but its effectiveness is questionable (World Bank, 1990). This brings question how effectively TVE teachers are performing in teaching. Additionally, the present TVE system does not provide any in-service training for workers. So secondary school-leaver workers have little chance to undertake professional training in their lifetime, and instead gain experience from work. Hyland (1999) considers that workers need training before and also need 'inside' training. Hyland highlights the importance of lifelong learning if the worker is to cope with changes. Figures 2 and 3 show that enrollees are rapidly decreasing at the secondary level, which supports the drop-out situation. Below I will discuss the present status of offered TVE programs by a few TVE schools and institutions.

The above discussion about the role TVE might play in national development, especially mentioned points noted in a World Bank Policy Paper on TVE, and implies that to maximize gains in sustainable development via TVE, modern and well-timed TVE programs should be offered to students, and these need to provide the best practical knowledge in relevant programs. Colin (1999) insists that TVE needs to offer most up-to-date technical, professional and job-oriented courses in order to meet the challenges of the twenty first century labor market. He also says that even if providing modern up-to-date TVE program is expensive, developing countries must make this investment, because such investment will help build the appropriate human resources which will contribute to national development and participation of labor market. But it seems that Bangladesh has not made desired progress to moderate and to innovate and provide up-to-date TVE programs (Rafique, 1996; World Bank, 1990).

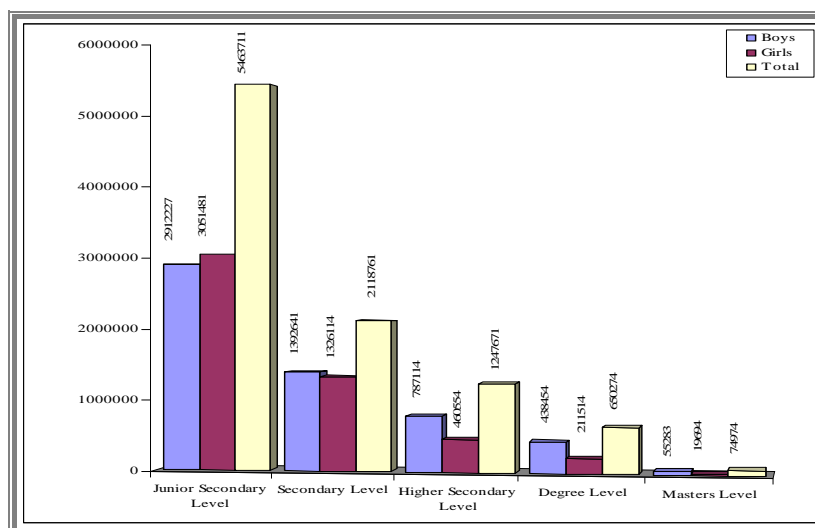


FIGURE 2  
Educational enrolment of Bangladesh people by level of education and gender (BANBEIS, 2007)

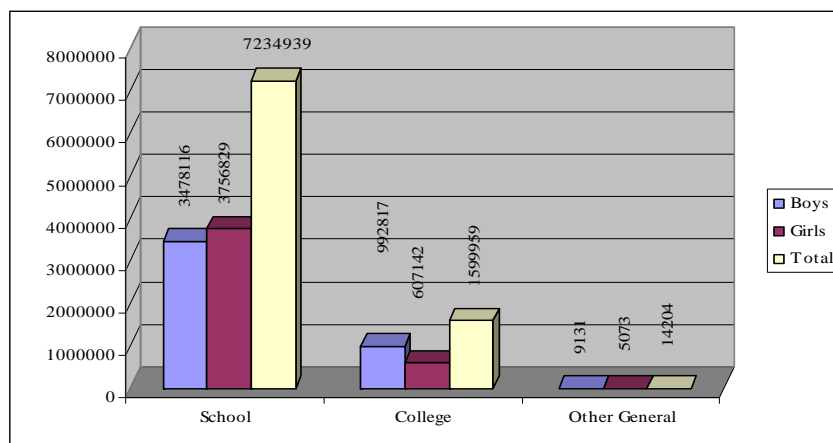


FIGURE 3  
Number of Bangladesh students in general education, by gender (BANBEIS, 2007)

Rafique (1996) says that present status of TVE in Bangladesh is such that we only offer old programs and topics. He suggests that Bangladesh needs to offer up-to-date programs such as information technology, computer science, e-commerce and so on. Oxtoby (1997) likewise says that Bangladesh not only needs to restructure its TVE facilities, but also needs to restructure the TVE programs. Rafique (1996) reports that in Bangladesh 64% of technician level jobs are held by people without any formal education or training, and suggest that that if TVE in Bangladesh fails provide good programs with an up-to-date curriculum; they will likely lose credibility with the employers. Rafique’s arguments raise the question as to whether trained people can meet employer demands, or if employers feel a need to be involved in training people themselves. However, Moenjak and Worswick (2001) claim that although in some circumstances some employers do not bother recruiting trained people, the importance of skilled person power is unquestionable.

The data and analysis then suggest that TVE in Bangladesh is not developed sufficiently to meet the challenge of building appropriate human resources. Having discussed the present situation of TVE in Bangladesh, I now discuss barriers to the development of TVE in Bangladesh.

#### BARRIERS TO TECHNICAL AND VOCATIONAL EDUCATION IN BANGLADESH

There are many barriers to the development of TVE in Bangladesh and these are summarized below:

- Most elite parents think that their children should not become a laborer. Even if their children are less academically able, parents try to push their children into higher education - disobeying the law. Social elites and political leaders in Bangladesh do not bother much about the law. They also send their children to study abroad. In such circumstances, poor parents become disappointed about their children’s education (Alam, 2003, 2007);
- The quality of TVE is poor and cannot provide sufficient significant knowledge for jobs. Most of TVE schools are also located far from rural areas; meaning village students cannot have access to them easily (World Bank, 1991);

- Gallart (1988) claims students of TVE suffer anxiety about the purpose of TVE, being only preparing laborers to get more profit from them, saying it is a moral obligation to eradicate such anxiousness and help them understand that TVE has two roles - preparing skilled manpower for the world of work, and opening the door for TVE students to pursue higher education with a solid foundation. Unfortunately, higher education is very limited for TVE school graduates in Bangladesh. In addition, once a student has a gap of two years academic study, he/she cannot enroll in further higher education. In these circumstances if a TVE graduate joins his/her job after completion of secondary and higher secondary education, he/she cannot come back into further education (Rafique, 1996);
- Higher educated people in general discipline areas can work at any place but higher educated people from TVE can only work in TV related placements, which is low in terms of social prestige. All boards, educational enterprises, and other organizations are under the control of their mother organization named ministry. The head of the ministries is the honorable minister who is appointed politically so he/she does not need prerequisite qualifications. The second head of the ministries is the secretary, who must have the general educational background and mainly secretary controls the ministries even if it is 'Ministry of Science and Technology. Therefore the top authorities enjoy the respect and favor of general graduates rather than TVE graduates. In these circumstances TVE graduates are socially neglected so bright students do not have much interest in studying TVE (Rafique, 1996); and
- Providing good TVE needs more money for practical workshop facilities, and also demands industrial attachments for internships (World Bank, 1990). Lauglo and Lillis (1988) say that vocational and practical subjects 'pedagogic systems have unusually multifarious expensive requirements (such as equipments materials, resources, curriculum, support system, personnel, managements requirements, etc.), which are not easily met. As a poor country, achieving a high budget for education is a real challenge for Bangladesh. It is also added that budget for TVE is very low in comparison with other sectors of education (BANBEIS, 2007). The present distribution of government revenue budget on TVE is a lowly 1.4% and development budget is only 4.3% (see Figures 4 and 5).

The World Bank (2002) notes that political leaders of Bangladesh have no strong commitment to develop the country or providing appropriate training. Since a certain level of TVE is emerging at secondary and higher secondary education for national development but as elite children do not have any problem in build their careers, so the concepts of TVE seems only for speeches. The above mentioned barriers to the development of TVE produce a serious, detrimental impact on enrolments in TVE as Figure 6 illustrates.

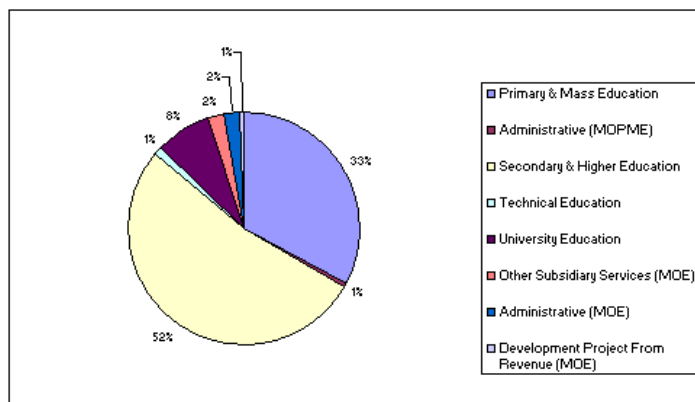


FIGURE 4  
Distribution of Bangladesh government budget on education by sub-sector (BANBEIS 2007)

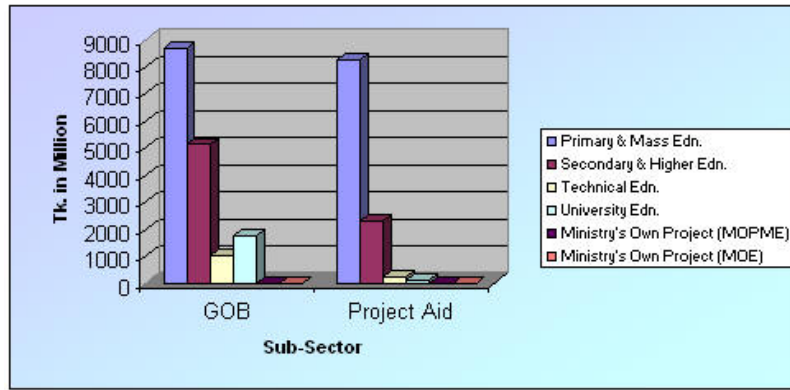


FIGURE 5  
Distribution of Bangladesh government education development budget by sub-sector (BANBEIS, 2007)

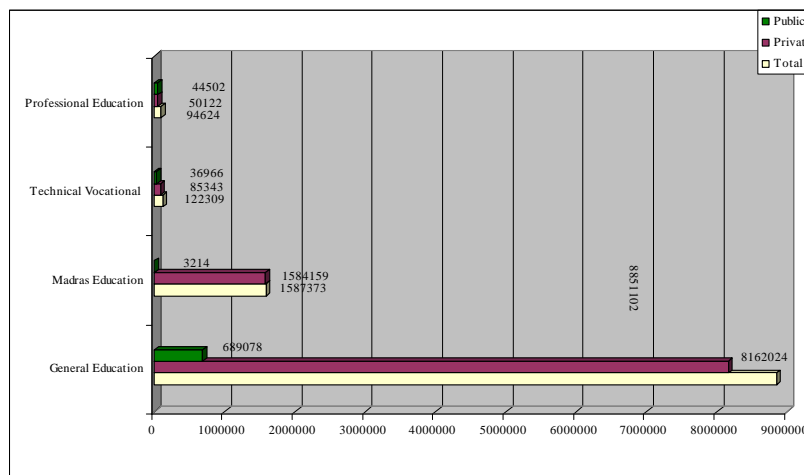


FIGURE 6  
Number and percentage of Bangladesh students by type of education, level, management and gender (BANBEIS, 2007)

*Job Market for Skilled Persons*

The World Bank report of 2002 notes the present population of Bangladesh is more than 140 million, with density of 1050 persons per square kilometer. Over-population can be a barrier to economic growth for a nation, but if the people are trained and are more productive, they may not a burden on society, but instead a source of skilled person power. They can perform their task efficiently with best professionalism, and they can also contribute for national development by participating global labor market.

Now I discuss how the country can benefit by the use of trained human resources (if the country can develop trained human resources in various professions). Though, there are many sectors, which might be progressed by skilled person power, I will discuss the agriculture, garments and leather sectors, and consider the impact of the exportability of skilled person power.

*Comparison of Employed Skilled Person Power and Employment Patterns*

Before discussing this issue in respect of Bangladesh, I first make comparison of employed skilled person power employment pattern found in the study of job market for TVE graduates with South Korea and Germany/Japan. Table 3 explores the employment pattern, but before discussing the analysis of the data in Table 3, it is worthwhile to note that position of skilled worker of Bangladesh is an official agenda but the position is occupied by unskilled worker who do not have either TVE or general education (Rafique, 1996; ILO, 1993). As a point of concern, it should be noted that this comparison does not take into consideration the quality and level of skill possessed by the skilled person power of the countries included.

TABLE 3

Comparison of employment patterns (% of workers in a given employment classification), compiled data

Category	Bangladesh	Germany/Japan	South Korea
Professional	2.2	4.5	6
Technician	1.8	16.7	58
Skilled worker	73	68.6	36
Unskilled	20	13	-

The World Bank Report of 2004 indicates that the per capita GNP in Bangladesh is US\$370; in South Korea it is US\$13,300; in Germany US\$27,890 and Japan US\$31,250. Within the limits of the available data on skilled person power, it seems that the employment pattern changes with increasing proportion of technicians and decreasing proportion of skilled workers spectrums as can be seen in Figure 7.

It should be noted that in transitory stages of an economy, the absolute number of skilled workers increases because an economy is unlikely to get to a higher level without increasing its base of skilled person power.

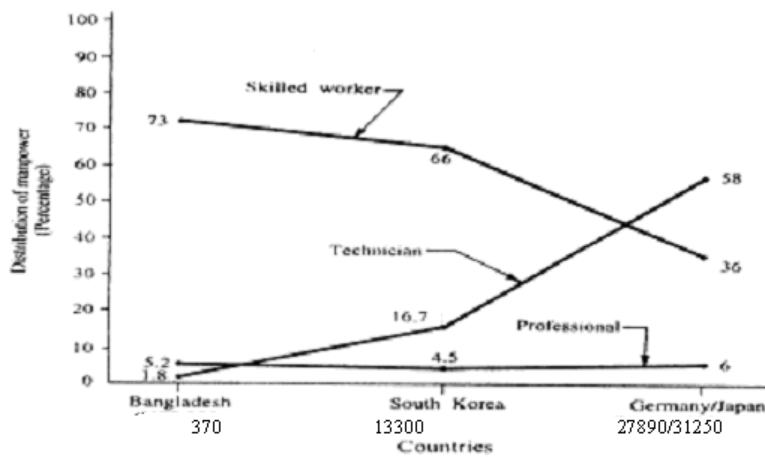


FIGURE 7

Distribution of Bangladesh skilled person power (compiled from UNESCO, 1999)

This implies automatically that a large number of employed skilled workers are required to be trained to assume higher-level duties and also assume the responsibility as industrial technician that warns that skilled workers must have a sound base of general and vocational education. But due to improper initiative, Bangladesh is lagging behind.

*Agricultural Sector*

The USA Food and Agriculture Organization (FAO) opines that agriculture can build national economic development, slowly but strongly, with a solid foundation (FAO, 1997; see <http://www.fao.org/es/ESA/sofa.htm>). The FAO (1997) emphasizes that agricultural revolution of a recently independent country not only helps it to be sound in managing own food, but also helps to build infrastructure for industrial revolution by exporting and by producing raw material for industrial uses. But Nikiko (2001) says agriculture means both cultivation of crops and producing necessary goods for industrial raw materials, as well as the livestock. The FAO (1997) argues that agricultural research and the invention of modern agricultural machineries is worthy unless farmers are skilled enough to process and handle them accordingly. However, Nikiko (2001) considers that to prepare productive farmers, well-timed training and education need to be provided if they are to accomplish such the professional objectives. According to the Bangladesh Government’s Fifth Five Year Plan (1997-2002) (see, Government of Bangladesh, 1997, p. 57): “Agriculture plays a vital role in the growth and stability of the country’s economy as is indicated by its share in GDP, employment and export earnings.” But Rafique (1996) argues that agriculture contributes only 30% of the GNP, which is very low in comparison with its work force because 70% of working people are involved in this sector. Figure 8 illustrates the proportion of different goods Bangladesh exported during 1997-1998. From this figure it can be seen that the contribution of agriculture is not that high compared with other sectors, especially the garment sector. Therefore there is almost unlimited scope to expand this sector, especially in the post-harvest stage, and in the processing and preservation of food products and other agricultural products.

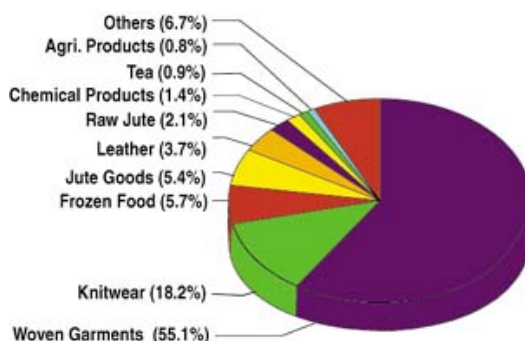


FIGURE 8  
Bangladesh exports from 1997 to 1998 (BGMEA, 2001)

It is worthwhile to mention that the agricultural work force does not have basic education about agriculture, because generally they are school leavers at secondary level, and so they are not using modern technology in terms of using fertilizer, chemicals, preparing soil for cultivation, making drains and canals for irrigation and pisciculture. As such workers are

not educated, they believe in superstition and use old purification and cultivation techniques, which may prevent modern practice of agricultural cultivation and hinder the country's agricultural performance. Ultimately, this situation restricts the agricultural sector in several ways:

- Although there are fertile lands, a large number of unskilled working people cannot produce necessary food for the vast population;
- as many farmers believe in superstition, they do not cultivate necessary raw materials (cotton, jute, rubber, etc.) for industrial use; and
- farmers do not cultivate livestock properly (fisheries, poultry, etc.) due to a lack of knowledge.

Nikiko (2001) sums up the situation, saying that if the farmers are trained properly, the present production of cultivation could be doubled, and they also could cultivate various crops and livestock because training may help them to come out from the previous generation's superstition meaning that the country can meet its local demands and increase exports. So, to save us from above situation, use of modern technology in agriculture, and diversity of cultivation are the urgent need of the country by creating skilled manpower in different sectors of agriculture and it will secure proper utilization of a huge labor force.

#### *Garment and Textile Sector*

According to the Bangladesh Garments Manufacturers and Exporters Association (BGMEA) (2001), in the year 1999-2000, the country exported readymade garments worth US\$3,592 million. A study in 1993 by International Labor Organization (ILO) on the Bangladesh garment industry reported an unusually rejection rate by the buyer's quality control authority. The BGMEA also observed that if this sector could develop better quality assurance, the total export value could be more than US\$ 4,500. In 2001, the garment industry employed more than 2 million people: 71% of them women and who had no formal training on garment manufacture (BGMEA, 2001). It is also worthwhile to note that the garments industry used approximately 3 billion yards of clothing material, 97% of which was imported. Thus some 75% of the total value of manufactured garments was spent importing and manufacturing (BGMEA, 2001). Smith, Baston, Boccock and Scoot (2002) observe that Bangladesh urgently needs to train employees in the garment industry to improve their skills, and improve the quality of their work and build the infrastructure of the sector. Smith et al. (2002) suggest that to remove the lot of the garment sector, the workers need proper training so that Bangladesh can supply the orders on time. Smith et al. summarize the situation, saying that by employing skilled manpower Bangladesh can meet the challenges of an international garment manufacturing business, and that if it fails to do so, then it will lose the business and high unemployment is likely especially for women. To face the challenge of local and global competition export-oriented industry the country must make significant investment in the garment sector in terms of education and training to provide the necessary skilled manpower.

#### *Leather Sector*

There is also a real shortage of skilled person power in the Bangladesh leather industry. Only one college offers graduate course, and then for few enrollees (BANBEIS, 2007). In 1997-98, Bangladesh earned more than US\$240 million exporting leather and leather products (Bangladesh Bank, 2004, see <http://www.bangladesh-bank.org/pub/monthly/econtrds/econtrds.html>). But out of the 210 million square feet of



leather used, some 85% was semi-furnished. If 100% leather could be exported in furnished form, the earnings would more than double, and if finished leather products could be exported, the earnings would 10 times the present. Again the restricting factor is unskilled labor.

#### *Export of Skilled People Power*

The data which have been used here were collected in 1993 and present a Middle East perspective there are no more up-to-date data available. During the 17 year period from 1976 to 1992, person power export increased by a factor of 31. Figure 9 shows the percentage distribution of exported person power (manpower) by level of skill (professional, skilled, semi-skilled and un-skilled). The same Figure also shows the level of remittance, Bangladesh received from the exported persons. The total person power exported from Bangladesh in 1993 was 244,508; of which 46.6% was unskilled, 14%, semi-skilled, 34.0% skilled, and 5.6% professional (Rafique, 1996). The UNDP human development report shows that Bangladesh received official remittances from exported person power of US\$0.8 billion in 1989, some was 4% of GNP, 59% of exports, 22% of imports and 43% of Overseas Development Administration (ODA). The country earned US\$ 1.01 billion from export person power in 1993, and US\$1.20 billion in 1995. The rise of person power export from 1988 to 1992 during the five years was thus 376% but the increase in remittances was 141% (BTEB, 1994). According to a BTEB study, the key reason for not increasing the remittances in proportion to the raising in export of person power is due to the export of a large proportion of unskilled person power in place of skilled people. The BBC also says that if the country can prepare different level of computer professional by providing them with appropriate training, it will gain the foreign currency as presently happens in India.

#### CONCLUDING REMARKS

Within the scope of this paper, it is not possible to present a full picture of TVE for Bangladesh. But it was possible to make an argument of the proposed topic. The following discussion represents some concluding remarks on the topic.

In the present circumstances, it is seems that drop-out rate at the secondary level is quite high. Furthermore, it is clear that inadvertently and haphazardly offering TVE programs not only increases the use of scarce educational resources, but also raises questions about the achievements of education, and may well make barrier to achieving national and individual educational aims. In addition to some other factors may be noted:

- To progress well in the face of increasing global competition, it is essential to provide modern up-to-date technological knowledge to students;
- On the other hand, it is notable that not all students have the academic ability or interest to gain technological knowledge; and
- In addition to the above issues, other professions such as agriculture, the garment industry and so on, can pay a vital role in country's developmental progress. After all, a balanced, skilled workforce can play a separate more holistic role in national development.

Considering the above, few TVE subjects such as agricultural science (in all its diversity), computer science, information technology, garments and textile technology, fashion and design, need to be offered especially at the secondary school level, and students should take several TVE subjects. This may help the drop-out students to become more skilled in a

variety of tasks, and in addition provide a solid foundation to continue into higher education.

It also should be noted that Bangladesh needs to provide in-service training programs at different levels, and for different subjects. This may help employees to cope with changes in TVE, and help primary-school-leavers to cope better with their jobs. In conclusion, the following overall recommendation is made. A well-timed TVE program may help Bangladesh to improve its economic growth, which may then aid social equity and freedom; the country urgently needs to take substantial steps (such as, increasing budgets, preparing modern course curriculum etc.) if it wants to develop TVE education.

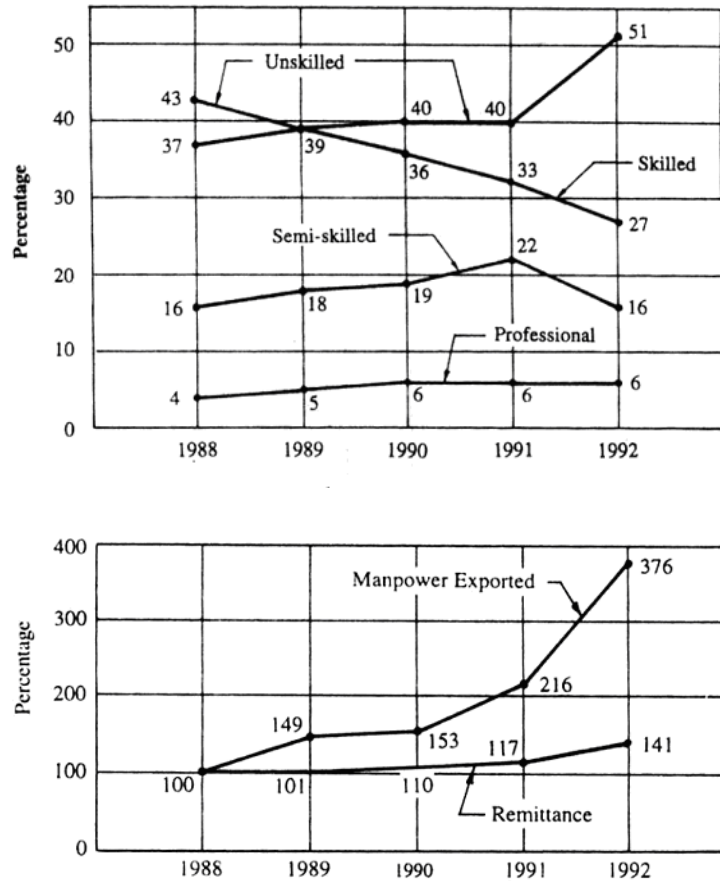


FIGURE 9  
The ratio of exporting person power and remittance for Bangladesh 1988-1992  
Compiled data from the Ministry of Labor and Employment, Bangladesh (2001)

## REFERENCES

- Akyempong, A.K. (2002). *Vocationalization on secondary education in Ghana*. Washington, DC: World Bank.
- Alam, G.M. (2003). *The impact of students' involvement in party politics on higher education and national development in Bangladesh*. Dhaka: Bangladesh.
- Alam, G.M. (2007). *Private HE in Bangladesh: the impact on HE governance & legislation*. Unpublished PhD thesis, University of Nottingham, United Kingdom.
- Arriagada, A., & Ziderman, J. (1992). *Vocational Secondary Schooling, occupational choices and earnings in Brazil*. Washington DC: World Bank.
- Atcharena, D., & Caillods, F. (1999). Technical education: A dead end or adapting to change? *Prospect*, 29(1), 67-87.
- Bangladesh Bureau of Educational Information and Statistics (BANBEIS). (2007). *Pocket book on educational statistics*. Dhaka, Bangladesh: BANBEIS Press.
- Bangladesh Bank (2004). Retrieved 13 December 2006 from, <http://www.bangladesh-bank.org/pub/monthly/econtrds/econtrds.html>
- Bangladesh Computer Council. (2001). Retrieved 13 December 2006 from, <http://www.bccbd.org/html/itpolicy.htm#3.1>
- Bennell, P. (1996). General versus vocational secondary education in developing Country: A review of rates of return evidence. *The Journal of Development Studies*, 33(2), 230-247.
- Bangladesh Garment Manufacturers and Exporters Association (BGMEA). (2001). *Statistics of export income and role of garments industries*. Dhaka, Bangladesh: Dhaka University Press.
- Bangladesh Technical Education Board (BTEB). (1994). *A study of job market for VTI graduates*. Dhaka, Bangladesh: BTEB Press.
- Colin, N.P. (1999). Technical and vocational education for the twenty first century. *Prospect*, 29(1), 29-36.
- Fagerlind, I., & Saha, L.J. (1989). *Education and national development: A comparative perspective*. Oxford, UK: Pergamon.
- Food and Agriculture Organization. (1997). Retrieved 19 March 2006 from <http://www.fao.org/es/ESA/sofa.htm>
- Fletcher, R. (1974). Evolutionary and developmental sociology. In R. John (Ed.). *Approaches to sociology* (pp. 39-69). London: Routledge & Kegan Paul.
- Foster, P.J. (1965). The vocational school fallacy in development planning. In J. Karabel & H. Hasey (Eds.), *Power and ideology in education* (pp. 142-166). Pennsylvania, PA: Oxford University Press.
- Gallart, M.A. (1988, May). The secondarization of technical education in Argentina and the professionalization of secondary education in Brazil in a comparative perspective. Paper presented at the Vocationalizing Education Conference. London.
- Government of Bangladesh. (1997). *The fifth five year plan*. Dhaka, Bangladesh: Bangladesh Government Press.
- Hallak, J. (1990). *Investing in the future: Setting educational priorities in the developmental world*. Paris: UNESCO.
- Hyland, T. (1999). *Vocational studies, lifelong learning and social values: Investigating education, training and NVQs under the New Deal - Monitoring change in Education*. Ashgate, UK: Brookfield.
- International Labor Organization (ILO). (1993). *Job descriptions in garments industries*. Dhaka, Bangladesh: ILO.
- International Labor Organization (ILO). (2001). *Revised recommendation concerning technical and vocational education - 2001*. Retrieved 21 March 2004 from [www.ilo.org/public/english/employment/skills/recomm/instr/unesco\\_3.htm](http://www.ilo.org/public/english/employment/skills/recomm/instr/unesco_3.htm)
- Jeong, K. (1999). Structural adjustment and vocational education in the Republic of Korea: The struggle between markets and intuitional system. *Prospects*, 29 (1), 89-104.
- Knight J.B., & Sabot, R.H. (1990). *Education, productivity and inequality: The East African Natural Experiment*. Washington DC: World Bank.
- Lauglo, J., & Lillis, K. (1988). Vocationalization in international perspective. *Comparative Education Review*, 34(3), 411-414.

- Lewin, K.M. (1993). Education and development: The issues and the evidence research for the development for international development (No. 6). London: Department for International Development.
- Little, A.W., & Leach F.E. (1999). Development and education, culture and economics analysis: Education cultures and economics - Dilemmas for development. Brighton, UK: Falmer.
- Moenjaj, T., & Worswick, C. (2001). Vocational education in Thailand: A study of choice and return. *Economics of Education Review*, 22 (1), 99-107.
- Nikiko, S. (2001). Role of agriculture in development in Bangladesh. Dhaka, Bangladesh: Japan International Cooperation Agency.
- Oxtoby, R. (1997). Barriers of the provision of cost-effective technical education in Bangladesh. *International Journal of Educational Development*, 17(1), 91-97.
- Pritchett, L. (1996). Where has all the education gone? Washington, DC: World Bank.
- Psacharopoulos, G. (1987). To vocationalize or not to vocationalize? That is curriculum questions. *International Review of Education*, 33(2), 583-97.
- Rafique, A. (1996). The challenges of TVE for human resource development. Dhaka, Bangladesh: Bangladesh Technical Education Board Press.
- Sen, A. (1999). Development as freedom. Oxford, UK: Oxford University Press.
- Smith, D., Baston, L., Bocock, J., & Scoot, P. (2002). Americanization and UK higher education: Towards a history of transatlantic influence on policy and practice. *Journal of Education Policy*, 14(4), 443-461.
- Tailak, J. (1998). Economics of vocationalization: A review of the evidence. *Canadian and International Education*, 17(1), 227-236.
- Thomas, A., Potter, D., & Allen, T. (1992). Development, capitalism and the nation state: Poverty and development in the 1990s. Milton, Keynes: Open University Press.
- Thomson, A.R. (1981). Education and national development in Africa. Hong Kong: Macmillan.
- United Nations Development Programme (UNDP). (1999). Human development report. New York: UNDP.
- United Nations Development Programme (UNDP). (2002). Human development report. New York: UNDP.
- United Nations Development Programme (UNDP). (2005). Human development report. New York: UNDP.
- United Nations Educational, Scientific and Cultural Organization (UNESCO). (1999). Statistical yearbook. Paris: UNESCO.
- United Nations Educational, Scientific and Cultural Organization (UNESCO). (2001). Statistical yearbook. Paris: UNESCO.
- Watts, A.G. (1985). Education and employment. London: The Open University.
- World Bank. (1990). Bangladesh vocational and technical education. Washington, DC: World Bank.
- World Bank. (1991). Vocational and technical education and training. Washington, DC: World Bank.
- World Bank. (1995). Worker in an intergrading world: World development report. Washington, DC: World Bank.
- World Bank. (2002). Economic growth and public policy: The East Asian miracle. Washington, DC: World Bank.
- World Bank. (2004). The challenge of development: World development report. Washington, DC: World Bank.
- World Conference on Education for All (WCEFA). (1990). Meeting learning needs. Thailand: Jomtien.
- Ziderman, A., & Van, F. (2000). South Africa and skills development in vocational education and training reform: Matching skills to markets and budgets. Geneva: ILO.
- Zymelman, M. (1976). The economic evaluation of vocational training programs. Baltimore: Johns Hopkins University Press.

## ABOUT THE JOURNAL

The Asia-Pacific Journal of Cooperative education (APJCE) arose from a desire to produce an international forum for discussion of cooperative education issues for practitioners in the Asia-Pacific region and is intended to provide a mechanism for the dissemination of research, best practice and innovation in work-integrated learning. The journal maintains close links to the biennial Asia-Pacific regional conferences conducted by the World Association for Cooperative Education. In recognition of international trends in information technology, APJCE is produced solely in electronic form. Published papers are available as PDF files from the website, and manuscript submission, reviewing and publication is electronically based.

Cooperative education in the journal is taken to be work-based learning in which the time spent in the workplace forms an integrated part of an academic program of study. Essentially, cooperative education is a partnership between education and work, in which enhancement of student learning is a key outcome. More specifically, cooperative education can be described as a strategy of applied learning which is a structured program, developed and supervised either by an educational institution in collaboration with an employer or industry grouping, or by an employer or industry grouping in collaboration with an educational institution. An essential feature is that relevant, productive work is conducted as an integral part of a student's regular program, and the final assessment contains a work-based component. Cooperative education programs are commonly highly structured and possess formal (academic and employer) supervision and assessment. The work is productive, in that the student undertakes meaningful work that has economic value or definable benefit to the employer. The work should have clear linkages with, or add to, the knowledge and skill base of the academic program.

## INSTRUCTIONS FOR CONTRIBUTORS

The editorial board welcomes contributions from authors with an interest in cooperative education. Manuscripts should comprise reports of relevant research, or essays that discuss innovative programs, reviews of literature, or other matters of interest to researchers or practitioners. Manuscripts should be written in a formal, scholarly manner and avoid the use of sexist or other terminology that reinforces stereotypes. The excessive use of abbreviations and acronyms should be avoided. All manuscripts are reviewed by two members of the editorial board. APJCE is produced in web-only form and published articles are available as PDF files accessible from the website <http://www.apjce.org>.

Research reports should contain; an introduction that describes relevant literature and sets the context of the inquiry, a description and justification for the methodology employed, a description of the research findings-tabulated as appropriate, a discussion of the importance of the findings including their significance for practitioners, and a conclusion preferably incorporating suggestions for further research. Essays should contain a clear statement of the topic or issue under discussion, reference to, and discussion of, relevant literature, and a discussion of the importance of the topic for other researchers and practitioners. The final manuscript for both research reports and essay articles should include an abstract (word limit 300 words), and a list of keywords, one of which should be the national context for the study.

Manuscripts and cover sheets (available from the website) should be forwarded electronically to the Editor-in-Chief directly from the website. In order to ensure integrity of the review process authors' names should not appear on manuscripts. Manuscripts should include pagination, be double-spaced with ample margins in times new-roman 12-point font and follow the style of the Publication Manual of the American Psychological Association in citations, referencing, tables and figures (see also, <http://www.apa.org/journals/faq.html>). The intended location of figures and diagrams, provided separately as high-quality files (e.g., JPG, TIFF or PICT), should be indicated in the manuscript. Figure and table captions, listed on a separate page at the end of the document, should be clear and concise and be understood without reference to the text.

EDITORIAL BOARD

Editor-in-Chief

Assoc. Prof. Richard K. Coll

University of Waikato, New Zealand

Editorial Board

Dr. Mary Atchison

RMIT University, Australia

Dr. Richard Chapman

Soil & Land Evaluation Ltd, New Zealand

Dr. Chris Eames

University of Waikato, New Zealand

Dr. Gawie Engelbrecht

Technikon Pretoria, South Africa

Ms. Jenny Fleming

Auckland University of Technology, New Zealand

Dr. Thomas Groenewald

Technikon Southern Africa, Johannesburg, South Africa

Mr. Dave Hodges

UNITEC Institute of Technology, New Zealand

Assoc. Prof. Helen McGregor

UTS Sydney, Australia

Ms. Nancy Johnston

Simon Fraser University, Canada

Prof. Stephen F. Johnston

UTS Sydney, Australia

Assoc. Prof. David Jorgensen

Central Queensland University, Australia

Ms. Norah McRae

University of Victoria, Canada

Dr. T. Anthony Pickles

University of Bradford, England

Ms. Susanne Taylor

Technikon Witwatersrand, South Africa

Dr. Neil Taylor

University of New England, Australia

Dr. Neil Ward

University of Surrey, England

Dr. Miriam Weisz

RMIT University, Australia

Dr. Karsten Zegwaard

University of Waikato, New Zealand

© New Zealand Association for Cooperative Education

<http://www.apjce.org>

(ISSN: 1175-2882)