Session 5:
Knowledge producing partnerships and collaborative ventures between the academy and industry

Building Human Resource Highways through Vocational Training

By
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INTRODUCTION

Education has always been visualized as one of the most efficient vehicles for economic emancipation, social mobility and political stability. Being educated means having greater access to certain levels of employment, salary, responsibility, prestige and social capital. Presumably, the higher the educational attainment, the greater will be the chance to access the just-mentioned opportunities.

Education, whether formal, non-formal or informal, is the central pillar for a decent work. Unfortunately, past impressions would tell us that education has attended mainly to the formal education sector along general subject areas. There has been much preference for intellectual activities over manual work, white collar over blue collar jobs and academic education over training for work.

With the emerging issues of globalization, advancement in technology, mobility of workforce, etc. however, the situation was drastically changed bringing vocational and technical education to the forefront. Quisumbing (2005) averred that: “If education is the key to development, vocational and technical education is the master key that opens the door to the world of work and the economy, alleviate poverty, save the environment and improve the quality of life.”

Technical and vocational education and training (TVET) is the systematic and orderly transmission of knowledge, skills and values to develop a workforce that is able to enhance productivity and sustain competitiveness in the global economy. It encompasses the ability to accelerate economic growth, provide marketable labor supply, minimize unemployment and underemployment, infuse technical knowledge, and reduce poverty.

For many countries in the Asia Pacific region, TVET is not merely an option but a necessity. Education alone is democracy but with technology, it becomes power. Balogh as cited by Tilak (1994) stated that: “As a purposive factor for rural development, prosperity and progress, education must be technical, vocational and democratic.” It goes without saying that TVET is both democracy and power. It is democracy because it liberates the learner or the trainee from the bondage of
ignorance and illiteracy. It is considered power because it brings technological superiority thereby breeding competitiveness and productivity to a country.

TVET aims to build a highly efficient human resource highway which allows technology and people to circulate and move around the Asia Pacific region without significant hindrances or delays. With the acquired power and democracy, the human resource highway will lead us to a life of durable economies and healthy communities.

**STATUS OF TVET IN ASIA AND THE PACIFIC REGION**

Technical and vocational education and training (TVET) refers to all measures whereby people acquire skills and provide them better access to employment and income. It enables enhanced skills to be acquired so that individuals will be more productive as they generate higher incomes. It makes enterprises more profitable and helps national economies raise the level of production and creates wealth.

In Asia and the Pacific region, TVET in each country is fragmented by separate administrative arrangements, operates at many levels and areas, incorporates fundamentally different delivery systems, uses a wide variety of teaching-training institutions, and has established many different examinations and qualifications.

Although private vocational centers exist, the national governments remain to be the major provider of finances to run vocational training systems. Table 1 presents the public expenditure for education and secondary education which includes vocational training. Based on the data available, Iran spent 21.7% of its total budget for education from 1999-2001. Malaysia apportioned 20% while Fiji, Myanmar, Papua New Guinea and Korea apportioned respective percentages of 19.4%, 18.1%, 17.5% and 17.4%.

The same table discloses how the budget for education was chunked into pre-primary and primary, secondary and tertiary. Singapore, Malaysia, Fiji, Iran, Indonesia, India and Bangladesh apportioned the highest percentage for secondary education, which included vocational training. The other group, consisting of Korea, Philippines, Nepal, Myanmar and Papua New Guinea dished out their education budget giving a higher share for pre-primary and primary over secondary education.

<table>
<thead>
<tr>
<th>Country</th>
<th>Public Expenditure</th>
<th>Pre-Primary &amp; Primary</th>
<th>Secondary</th>
<th>Tertiary</th>
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</thead>
<tbody>
<tr>
<td>Singapore</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Korea</td>
<td>22.4</td>
<td>17.4</td>
<td>44.4</td>
<td>42.3</td>
</tr>
<tr>
<td>Malaysia</td>
<td>18.3</td>
<td>20.0</td>
<td>34.3</td>
<td>28.1</td>
</tr>
<tr>
<td>Fiji</td>
<td>..</td>
<td>19.4</td>
<td>35.0</td>
<td>48.9</td>
</tr>
<tr>
<td>Philippines</td>
<td>10.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maldives</td>
<td>10.0</td>
<td></td>
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</tbody>
</table>
## STREAMS OF VOCATIONAL AND TECHNICAL EDUCATION

Vocational and technical education transcends the formal education systems, non-formal programs and informal in-plant and on-the-job trainings. It may be also classified based on where the training takes place: in school as part of the formal education system; in non-formal training centers outside the school system; and within enterprises. The streams of vocational and technical education are described in Table 2:

### Table 1. Public Expenditure on Education

<table>
<thead>
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<th></th>
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<tbody>
<tr>
<td>Sri Lanka</td>
<td>8.1</td>
<td>84.3</td>
<td>13.4</td>
<td></td>
</tr>
<tr>
<td>Iran</td>
<td>22.4</td>
<td>33.2</td>
<td>39.2</td>
<td>13.6</td>
</tr>
<tr>
<td>Indonesia</td>
<td>9.8</td>
<td>37.8</td>
<td>38.8</td>
<td>23.4</td>
</tr>
<tr>
<td>India</td>
<td>12.2</td>
<td>38.9</td>
<td>27.0</td>
<td>14.9</td>
</tr>
<tr>
<td>Myanmar</td>
<td>18.1</td>
<td>46.6</td>
<td>27.0</td>
<td>26.4</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>17.5</td>
<td>71.4</td>
<td>24.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Bhutan</td>
<td>12.9</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Bangladesh</td>
<td>10.3</td>
<td>45.6</td>
<td>42.2</td>
<td>8.7</td>
</tr>
<tr>
<td>Nepal</td>
<td>8.5</td>
<td>48.2</td>
<td>23.1</td>
<td>12.1</td>
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<tr>
<td>Pakistan</td>
<td>7.4</td>
<td>7.8</td>
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</table>

### Classification

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Covers programs or courses at the secondary, higher secondary, junior colleges, first-degree level, and job-oriented and application oriented first degree programs.</td>
</tr>
<tr>
<td>Aims to develop skilled manpower to prepare the people for the world of work. Major areas of study include agriculture, business and commerce, engineering and technology, health and paramedical, home science and humanities.</td>
</tr>
<tr>
<td>Emphasizes on practical education aimed at producing middle-level technicians. Not necessarily a terminal point of schooling because it is open for students who like to continue university education.</td>
</tr>
<tr>
<td>Refers to diplomas offered by polytechnics which may be categorized within or outside the mainstream of formal education but recognized by the university system. Diplomas include: engineering, information technology, electronics, machinery and metal, textile and crafts, jewelry making, fashion design, beauty culture, garments and trades, foods, office management and many others.</td>
</tr>
</tbody>
</table>
3. Lifelong Learning

<table>
<thead>
<tr>
<th><strong>3. Lifelong Learning</strong></th>
<th>Refers to alternative forms of formal education such as para-professional education, correspondence education, credit bank system and others. Train the industrial workforce and provide workers who missed the opportunity for higher education.</th>
</tr>
</thead>
</table>

Table 2. Streams of Vocational and Technical Education

Most national systems of skills development combine the three streams. Japan, for instance, has vocational schools in addition to informal training. In many Asian countries, such as Pakistan, Bangladesh, Indonesia and the Republic of Korea, non-formal education is provided by the ministries of education while the ministries of labor operate vocational schools.

An investigation made by the World Bank concluded that all types of trainings could be effective, given the sufficient employment demand. Singapore chose to implement vocational training outside the formal education system for the reason that it would be more flexible and faster method of addressing changing needs of the industry.

**Pressing Issues in Technical and Vocational Education and Training**

Three broad questions, relevance, effectiveness and efficiency, identify and analyze issues in TVET. Relevance is the extent to which the objectives meet the economic and social requirements. Effectiveness is the extent to which the outputs meet its objectives and efficiency is the relationship between inputs and outputs.

**Relevance**

The first issue concerns the responsiveness and flexibility of the training system in meeting the demands of the industry. Many Asia Pacific countries continue providing the same trainings year after year unmindful of the employment prospects. They tend to become supply-driven not demand-driven, and often spur obsolescence, insularity and improper orientation. One reason may be explained by the cost of physical resources and the training of human resources. Limited resources, such as new buildings, state-of-the-art equipment and other facilities, hinder the implementation of new programs. In addition, specialists need to master the trade first before imparting to the trainees.

**Effectiveness**

Effectiveness refers to the achievement of objectives. There are but a few countries in the Asia-Pacific region with mature skills or competency standards, by which to measure quality. Sometimes, quality can be compromised because of limited budget. Hindrances to quality which are often not addressed are: poorly trained and motivated instructors; instructors with insufficient work experience in industry; inadequate or poorly maintained equipment; insufficient training materials and supplies; poorly designed content; failure to assess trainee performance through periodic examinations; and poor management of the training process.
Efficiency

TVET is typically expensive, from two to fourteen times as expensive as general education. Smaller class sizes and capital intensity (equipment) account for the differences. Still, in many countries, vocational training is more expensive because of inefficient use of resources. Unit costs and costs per successful graduate rise with trainee dropout and underutilization of facilities. In some countries the annual dropout rate averages between 10 - 20%. Only a fraction of the original entrants complete the course of training successfully. Most training tends to be center-based in purpose-built facilities for long periods. Training programs based on time spent rather than on skills acquired also waste resources by keeping trainees enrolled longer than necessary.

Disparity in the Status of Vocational Training and Education

Some factors that cause the disparity in the progress of technical and vocational education and training (TVET) are described in Table 3.

<table>
<thead>
<tr>
<th>Areas</th>
<th>Status</th>
</tr>
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<tbody>
<tr>
<td>Social Factors</td>
<td>The negative social attitude towards TVET as a second-class system of education has severely diminished the demand for vocational education.</td>
</tr>
<tr>
<td></td>
<td>In rural areas, low prestige is attached to vocational education in many countries including, India, Indonesia, Philippines and Sri Lanka and to some extent in Korea and Taiwan.</td>
</tr>
<tr>
<td>Enrolment Size</td>
<td>TVET enrolment is directly proportional to the level of economic development: the lower the overall level of a country's development, the weaker is the case for introducing vocational training. Vocational skills are more needed in industrially developing societies like Korea and Japan.</td>
</tr>
<tr>
<td>Role of the Government</td>
<td>Most governments in Asian countries (Korea, Taiwan, Hong Kong and South Asian countries) have a dominant role in providing vocational training. Only Japan has enterprise-based training. Private sector plays a minimal role.</td>
</tr>
<tr>
<td>Financing</td>
<td>Vocational education is more expensive than general education: 1:10 ratio in favor of secondary technical education per student in Korea (Middleton and Demsky, 1989); 1:2-60 in South Indian countries (Tilak, 1988). However, allocation of budget for TVET is remarkably low, compared to general secondary education.</td>
</tr>
</tbody>
</table>

Table 3. Status of Technical and Vocational Education and Training
Harmonization and Standardization of HRD Systems for Labor Market Opening and Workforce Mobility

Although reforms were instituted to respond to changing environments, the issue of harmonization and standardization is still a dream needing realization. Mandated to be the center of excellence for human resources development in Asia and the Pacific along technical and vocational education and training, CPSC is spearheading the following activities:

Developing Regional Skills Standards

Regional skills standards need to be developed in order to help the workers increase their marketability and job mobility in the region. By demonstrating defined skills and competencies, they would also help the industries boost their overall productivity and competitiveness.

CPSC is collaborating to develop sets of regional skills standards benchmarked on the country’s national skills standards. It has started entering into discussions with member countries whether these have well-developed, developing, and non-existing skills standards. Hopefully, these innovative initiatives focus on the free movement of skills and competencies within and beyond the region.

Establishing a Regional Accreditation and Certification Commission

Pursuant to CPSC’s mandate, sixteen participating member governments convened and agreed to establish a regional accreditation and certification commission through Seoul Declaration 2004. Named as Asia Pacific Accreditation and Certification Commission (APACC), the Commission aims to achieve equivalence, harmonization and standardization of TEVT.

As a regional body, APACC is determined to recognize qualifications and standards among countries thereby facilitating labor force mobility across the region. Moreover, it intends to produce a flexible and well-qualified labor market, one with rich and diversified skills by accrediting and certifying quality TEVT institutions. It spells the roles of every participating country and defines the operations in the context of a regional accreditation commission.

In line with this mandate, CPSC created a special APACC Unit to plan and manage all matters pertaining to the pre-operationalization of the Commission. It appointed a team to develop four major accreditation documents: The Accreditation Manual; The Survey Instrument for Technical Education; Handbook for Accreditors; and Regional Skills Standards. In addition, it provided access through the creation of a dedicated APACC website.

CPSC has engaged the services of technical experts in the field and gathered relevant people from the representative governments to study, analyze and firm up a set of policies and guidelines that will be applicable to the region. To date, the College is now in the process of coming up with final accreditation papers.

All of these are meant to ensure quality and excellence in technician education and training in the region. With this initiative, vocational and technical education training
providers in the member countries are encouraged to adapt the best international practices for their institutions.

**LABOR MARKET INFORMATION SYSTEM**

Realizing the need of the member governments for a precise labor market data, CPSC has initiated a Labor Market Information System (LMIS) project. This system hopes to track and analyze the economy of member countries and other countries of interest by determining future workforce training needs, identifying the availability of labor, verifying the prevailing wage rates, and discovering potential markets.

Being able to provide these data, unemployment will be reduced and employment will be generated. LMIS also finds its value to local and regional planners in the academe as well as in the industries and businesses to help target locations, seek ways of attracting and retaining skilled workers, or assess the scope and size of potential markets. Labor unions also find these studies useful for determining comparable wage and compensation levels, local working conditions, and training needs.

**Web-Based Teaching and Learning Systems**

Face to face learning is still considered the best delivery mode; however given the geographical realities of the countries in the region, web-based teaching and learning systems provide an alternative platform. Through this system, CPSC hopes to connect the unconnected countries thereby imparting knowledge to students in distant locations, improving communications and providing updated materials. Since last year, the College has developed a total of seventeen (17) web-based courses ranging from e-teaching and learning systems, total quality management, project management, accreditation and certification, software development methodology and tools, labor market information systems, non-technical skills, research and survey, testing and evaluation, among others. CPSC’s web-based development team is composed of the faculty members as content developers, network administrator, web programmer, web designers, multimedia artist and other IT specialists.

To overcome the difficulties of geographic conditions in the region and to share with the member countries the benefits of technology, CPSC plans to install one server for every member country. Likewise, it continues to equip the computer laboratories with technological infrastructure and further build competencies of our e-teachers and e-facilitators. The Center will be an interaction of trained e-teachers and students through cyber-lectures and e-assessment.

**INTERNATIONAL LINKAGES**

As a regional center, CPSC considers developing linkages a competitive necessity in order to make collaboration successful. It has to maintain ties with academic institutions, consortia and other entities. Within the last three years, CPSC has endeavored to continue developing new effective initiatives to foster partnership and networking with other bodies. Today, CPSC is continuously strengthening international cooperation with bodies such as UNESCO-UNEVOC, ILO, ADB, ADBI,
UNESCAP, SEAMEO-INNOTECH, SEAMEO-VOCTECH, JICA, KOICA and countless academic institutions. It has also set up alliances or associations with private executing or intermediary agents, to support its programs in the region.

**Building e-Highway for Human Resources Management toward Global Labor Market**

The changing nature of work and the workplace have been changed by technological environmental change and progress of globalization. Therefore enhancing and integrating the career development systems have become ever more important for individuals, societies, nations, and the world. We recognize that we need to enhance and integrate the career development systems from national levels to regional/global level through developing, providing, and applying critical knowledge and technology.

In response to these, CPSC has envisaged a well-organized human resource highway that would provide advanced knowledge and technology to students and graduates who can move about freely in search for knowledge or jobs. The human resource highway is composed of physical structure (road system, cars, traffic regulations and drivers) and the e-highway (career and jobnet systems). The interplay of these components can build a highway that can transport technologies and services.

**The e-Highway for Human Resources Management**

*Network or the Linking Systems*

The human resource highway should be equipped with information and communication devices that would link distant partners, store data, share information and news as quickly a possible. Technological infrastructure, energy supply and telephone connections should be accessible. The development of electronic libraries could help close the resource gap by making textbooks and periodicals electronically available, especially for schools, universities and research centers in the member countries. It would require making them accessible on-line systems such as Jobnet and Worknet websites in Figure 4.
**Vocational Content in Mass Higher Education?**
**Responses to the Challenges of the Labour Market and the Work-Place.**
**Bonn, 8-10 September 2005**

Kiosks as Career Net

Kiosks are stop and shop places where a trainee could be guided in choosing a degree or career path, exploring occupations, learning about institutions, and other education resources. These are career or work nets that could give information in applying to institutions, contacting recruiters, obtaining scholarships & financial aid.
and other issues relating to vocational education and training. Career or work nets build a profile with employment and skills and finds a high-growth and high-wage occupation by country and region, and by educational level. They also create an industry profile with information about future employment growth and industry resources.

**Figure 5. An Example of CareerNet for Students of Mass Higher Education with Career Channel, Career DB, Career Counseling, Psychological Test, and Career Development Center developed by KRIVET, Rep. of Korea.**

**Physical Human Resource Highway**

*The Environment as the Road Systems*

One factor with so many variations is the road or the diversity of the environment. The general environment can be dusty or muddy, calm and serene, cool and soothing, uncomfortable, peaceful, appropriate and many more that can affect the driving process. Another dimension is the road safety conditions: the physical set-up of the road, the road lights, traffic lights, camera, asphalted or not, etc. Correspondingly, this refers to the external environmental factors and physical plant and facilities that would somehow affect the transport of services from one end of the highway to the other. Investment in priority infrastructure will maximize development while minimizing development costs.
Package of Technologies as Good Cars

Technology is required to ensure that the extra energy of promoting, facilitating and coordinating the human resource highway is available. The good cars are the package of technologies that would be utilized to provide training and impact the necessary skills and competencies leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising and self-reliant. The good cars would also mean state-of-the-art and not innovative technologies characterized by durability, environmental friendliness, reusability, easy maintenance, decentralized control and diversity.

Policies and Guidelines as Traffic Regulations.

Effective governance is essential to achieving sustainable growth and ensuring its benefits are distributed widely and equitable. Likened to traffic regulations, the formulation of policies and guidelines serve is crucial to effective governance. Traffic regulations are developed for the safety of the both the passengers and the technology. In the same manner, policies and guidelines are formulated to serve as our guide in building a human resource highway which would serve the purpose of producing trained human resources maximizing package of technology delivered for him.

Human Resources as Drivers

In the human resource highway, the driver is the knowledgeable one. He is burdened with guiding and directing his passengers while they traverse the highway. In order to make a good journey, it is essential to ensure that human resources acquire and constantly improve their capacity and skills. It will be important to develop capacity building and training: communication and awareness raising; planning, management and evaluation, and training and re-training. The driver must be oriented on the materials he will use in driving, the methods and tools needed.

GLOBAL CHALLENGES THROUGH VOCATIONAL TRAINING IN MASS HIGHER EDUCATION WITH TECHNOLOGICAL ENVIRONMENT CHANGES

STANDarDIZATION

The nature of the accreditation system in the Asia Pacific region is widely diversified which when not addressed can be a major impediment for quality assurance. Accreditation procedures, policies and decisions are contrasting: issues such, as “one size fits all”; institution versus program; and inputs, processes, outputs and outcomes as bases of standards. Shall CPSC preserve diversity - and what about the need for convergence? And how will CPSC promote quality by remaining diverse on one hand and convergent on the other? Confronting this major challenge, CPSC has to promote convergence of standards to a certain degree, while at the same time structure diversity in such a way as not to trample upon the national practices. It will institute a process of partnering with national accrediting bodies with a track record of quality, effectiveness and trustworthiness in their works.
Universalization of Education

Preparing learners to the world of work is the primary purpose of technical and vocational education and training. However, only the formal aspect of education has been exhausted notwithstanding the contributions expected from non-formal and informal means in this respect. To meet the needs of the student, TVET extends beyond the brick-and-mortar traditional settings to the click-and-mortar innovative settings or any other form of online, web-based and non-residential attendance programs. In the next couple of months, the College would be embarking on the development of e-textbooks as another alternative mode of improving access to education. All these would expectedly result in cognitive and psychological change in people, which would in turn provide the conditions for better living.

Another issue on universalization which is related to accreditation and certification is earning the equivalent credit points from one institution in one country to another institution in another country.

Commercialization of Education

Commercialism refers to the use of new electronic technology, the merging of for-profit and not-for-profit educational organizations, and for-profit subsidiaries of non-profit operations. It raises issues about regionally accredited but nationally visible institutions, providing on-site and distance education programs across regions. As Eaton (2001) puts it, “commercialism” challenges accreditation whether these new commercial cultures can produce quality and under what conditions.

Internationalization

Internalization refers to expanding boundaries for institutions, courses, and programs operating in several countries, students moving among countries to complete their education, creation of virtual institutions that exist mainly for international purposes, and government interests in further controlling higher education as an item of trade and commerce. On one hand, it becomes a tool to reform, articulate, and develop national and individual capacities to respond to challenges that the market and globalization convey. On the other hand, it will be an instrument of uncertainty to countries faced with under funding, and inadequate human resources.

Internationalization poses a challenge to CPSC to examine what it means to take institutions, programs, and quality review systems designed for domestic consumption into an international arena. Being inevitable, CPSC shall deal with internalization in the context of strategic development, in order to assure acquisition of best practice, comparable educational standards, increased scope and opportunity to network for mutual growth, student mobility, and access to comparable institutions globally, but equally strengthens curricula design, as well as skill, job and labor market relevance.

Conclusions

According to technological environmental change and progress of globalization, the nature of work and the workplace have been changed. Therefore enhancing and
integrating the career development systems have become ever more important for individuals, societies, nations, and the world.

Technical and vocational education and training is the master key that opens the door to the world of work and the economy, alleviate poverty, save the environment and improve the quality of life. It transcends the formal system. It may take two other streams: polytechnics and lifelong learning. Most CPSC member countries combine the three streams with the national government acting as the major provider of finances.

Like other aspects of education, TVET has to address the issues of relevance, efficiency and effectiveness. It is still ridden with criticisms concerning harmony and standards, and factors that may have caused disparity include the negative social attitude towards TVET, low enrolment size in areas where TVET is needed, the minimal role of the private sectors and the high cost of vocational education coupled with its low budget allocation.

In response to the related issues, CPSC is spearheading the following activities: (1) Developing regional skills standards; (2) Establishing a regional accreditation and certification commission; (3) Labor market information system; (4) Web-based teaching and learning systems; and (5) International linkages.

To capuslate them all, CPSC has envisaged a well-organized regional human resource highway that would provide advanced knowledge and technology to TVET students and graduates who can move about freely in search for knowledge or jobs. The first component of the human resource highway is e-highway which is turn is made up of the network or the linking system (job net and work net) and the kiosks as career net. These would contain information that would give information in applying to institutions, contacting recruiters, obtaining scholarships & financial aid, and other issues relating to vocational education and training. The second component is the physical human resource highway which is comprised of the environment as the road systems, the package of technologies as good cars, policies and guidelines as traffic regulations, and human resources as drivers.

Notwithstanding the proposed regional human resource highway, one needs to realize that global challenges still remains for technical and vocational educational training. These are global standardization, universalization of education, commercialization of education and internationalization. Hoping against all hopes, CPSC moves for a collaboration of all regional bodies to tackle the broader issue of globalization.
REFERENCES


