Industrial Support in Vocational Education and Training Development to Achieve Quality Assurance of Indonesian Professional Labor Force

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Abstract

High quality of labor force can be formed through quality assurance of the education vocational and training system. Vocational education and training can help individuals to generate income and contribute towards economic growth and social development of a country by acquiring knowledge and skills. Trend analysis is needed and very important to face globalization competitiveness of labor force in order to become ready to fulfill demand driven in workplace. Government Policy and Planning Development will be created based on the result of trend analysis to sustain vocational and technology education development in Quality Assurance Industry Based. Vocational education and training to effectively support industrialization, economic growth, wealth creation and poverty eradication, skills training must be of high quality and competency-based. Vocational education and training development is needed in the preparation professional labor force in the field of engineering for national development purposes to fulfill demand driven. Technical and vocational education and training (TVET) has emerged as one of the most effective human resource development strategies that Indonesia country need to embrace in order to train and modernize their technical workforce for rapid industrialization and national development. The impact of globalization on technical and vocational education in Indonesia and how skills training in developing countries can benefit from a globalizing economy. Technical and vocational education play a vital role to effectively support industrialization, economic growth, skills training must be of high quality and competency-based. Consequently, cooperation among industrial, Government Institutions, **C**hamber of **C**ommerce and **I**ndustry should be managed by a clear government policy to prepare professional labor force to fulfill demand driven correspond with national development purposes.

Keywords: quality assurance, vocational education and training, income, economic growth, labor force, professional, industrial.

1. Introduction

Education aims to complete the personal in the balance, trade, organic, harmonious, and dynamic to achieve the purpose of human life. Educational philosophy is the philosophy used in the study of educational problems. Characteristics are thought of philosophy:

a. Think by using the high discipline of thinking,
b. Think systematically, and
c. Compile a comprehensive conceptual schema.

So through a person's vocational education will be expected to be **competent** (professional fields), **confident** (confident in his ability), **consistent** (steady stance/istiqomah), has a **commitment** (in the promise/responsibility) and have **credibility** (trustworthy/trustful/al-amin) in performing their duties.

Knowledge and skills of vocational education and training can help individuals to generate income that contributes to economic growth and social development of a country. Educated workforce will be better and become critical if we are to meet the requirements of labor demand with a more rapid growth. A country's economic growth is crucially dependent on the ability to produce goods and services of better quality with competitive price.

Training and skills development play an important role in the productive capacity of individuals and is an integral part of Human Resource Development. Vocational education and training to effectively support the industrialization, economic growth, wealth creation and poverty eradication, skills training should be high quality and competency based. Development of vocational education and training required in preparation for

the professional labor force in the field of engineering to national development goals.

In general, vocational education is "industrial educators" whose role in the design and implementation of educational programs oriented to the needs of the industrial production process. So vocational education is concerned with technological developments affecting the industry. Vocational education should be able to be a dynamic entity and is able to follow developments in the industry.

Indonesia has the classification of vocational education is somewhat unique and slightly different from that applied in other countries. Overall, the types of education in Indonesia stipulated in Act no. 20 of 2003 on National Education System, Article 15. This article reads: "This type of education include general education, vocational, academic, professional, vocational, religious, and special." There are three types of education in the category of PTK (technological and vocational education) are vocational, professional and vocational for under graduate level.

Vocational education should be adaptive and flexible with the era. This kind of education will continue to grow in the future where the role of higher-quality human resources. Globalization will also be very instrumental for the provision of qualified labor will occur regardless of geographic boundaries.

One of the most important features of TVET is its orientation towards the world of work and the emphasis of the curriculum on the acquisition of employable skills. TVET delivery systems are therefore well placed to train the skilled and entrepreneurial workforce that Indonesia needs to create wealth and emerge out of poverty. Another important characteristic of TVET is that it can be delivered at different levels of sophistication. This means that TVET can respond, not only to the needs of different types of industries, but also to the different training needs of learners from different socio-economic and academic backgrounds, and prepare them for gainful employment and sustainable livelihoods. A skilled workforce is a basic requirement for driving the engine of industrial and economic growth, and TVET holds the key to building this type of technical and entrepreneurial workforce.

Technical and vocational education and training (TVET) has emerged as one of the most effective human resource development strategies that Indonesia country need to embrace in order to train and modernize their technical workforce for rapid industrialization and national development.

Training for high-quality skills requires appropriate training equipment and tools, adequate supply of training materials, and practice by the learners. Other requirements include relevant textbooks and training manuals and qualified instructors with experience in enterprises. Well-qualified instructors with industry-based experience are hard to come by, since such categories of workers are also in high demand in the labor market. But they could be suitably motivated to offer part-time instruction in technical and vocational schools.

1.1 Function of Vocational Education and Training are:

a. Prepare students to become fully human Indonesia that can improve the quality of life, able to develop themselves, and have the skill and courage in a sense opened opportunities to improve income ",
    1) Meeting the workforce needs of business and industry
    2) To createemployment forthemselvesandfor others
    3) Changeofdependencystatusof studentsintothe nation'sincome(productive)

b. Preparestudentsto masterscience and technology, so
    1) Able tofollow, control, andadjust to theadvancement ofscience and technology
    2) Have the basic skills to be able to develop self-sustainable.

Vocationaleducation and Training asfurtherhigher educationthat preparesstudentsfora jobwitha specificappliedskillsequivalent to themaximumdegree program.

2. Problem

In general, the quality of training is low, with undue emphasis on theory and certification rather than on skills acquisition and proficiency testing. Inadequate instructor training, obsolete training equipment, and lack of instructional materials are some of the factors that combine to reduce the effectiveness of training in meeting the required knowledge and skills objectives. High quality skills training requires qualified instructors, appropriate workshop equipment, adequate supply of training materials, and practice by learners.

The low quality of vocational and vocational education in Indonesia is one of the causes of the increasing unemployment of the labor force year to year. This makes the burden becomes increasingly heavy government to reduce unemployment. Meanwhile, annual population growth rate increased sharply, not comparable with the availability of jobs. However, people who have a particular field of expertise and skills such as carpentry experts, workshop, mining, shipbuilding

and other experts can do many jobs. So that they no longer rely completely to existing jobs. But they could make work that is needed by industry and businesses to earn revenue.

Expertise and skills required by industry is still difficult to be fulfilled by vocational technology education, due to quality assurance in vocational schools and other institutions of vocational do not according to the model industry yet. Under these conditions required a comprehensive study to find the right model, so as to meet the requirements desired by the industry and the business world. Therefore, improving the quality of vocational education on an ongoing basis (continuous improvement) is inevitable. Because of the relevance and quality of secondary vocational education is low, access to secondary vocational education services have been inadequate, and the management of education is still not efficient (Dikmenjur/Secondary and Vocational Education, 2004).

Current training programs in many countries are supply-driven. TVET programs are very often not designed to meet observed or projected labor market demands. The emphasis appears to be on helping the unemployed to find jobs, without any critical attempt to match training to available jobs. This situation has resulted in many vocational school graduates not finding jobs or finding themselves in jobs for which they have had no previous training. Non-targeted skills development is one of the major weaknesses of the TVET system in Indonesia. Training institutions also do not track the employment destination of their graduates. Consequently, valuable feedback from past trainees on the quality of the training they have received and the opportunity for their experience-based inputs to be factored into the review of curricula and training packages are lost. In other words, the use of tracer studies to improve the market responsiveness of training programs is currently absent in many countries.

Currently the trend seen many that vocational education providers are not able to change more rapidly to anticipate the needs of the workforce in the industry. Therefore, vocational education needs to improve the quality and quantity to address the acceleration of progress marching dynamics of an increasingly competitive job market. This can be realized if the concept of a mature and reliable than government policy, vocational education practitioners, industry and guarantee the quality of graduates.

There are two training models stand out for mention: the centralized Singaporean model and the dual system practiced in Germany. In Singapore, a National Manpower Council ensures that training is relevant to the needs of the labor market. Training also includes the inculcation of shared cultural values and attitude development. The dual system of vocational training in Germany allows for learning to take place in a vocational school and in an enterprise concurrently. Approximately, 70% of all school leavers, aged between 15 and 19 years undergo training under the dual system. The dual system promotes the linkage of vocational training to the world of work. Therefore, the dual system has been implemented in Indonesia, just for few years when Prof. Dr. –Ing. WardimanDjojonegoro as Ministry of Education and Culture from March 17th 1993 – March 17th 1998.

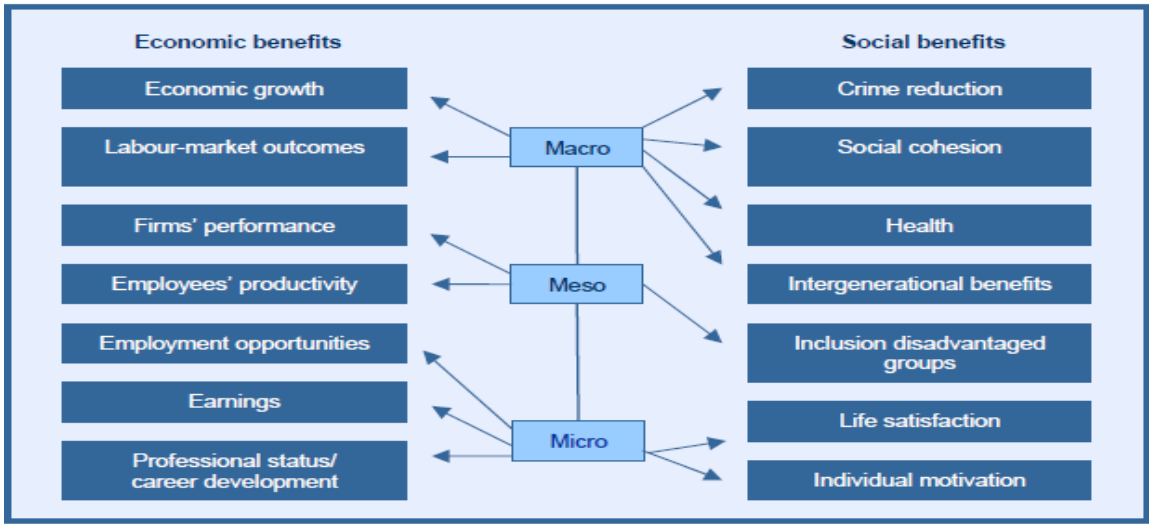
3. Discussion

To achieve high quality of labor force can be formed through quality assurance of the education vocational and training system. Therefore, it can be derived from VET benefits.

Fig. 1 **Types of VET benefits**

VET benefits can be grouped using a classical typology based on the nature of results. Two main categories can be identified: economic benefits and social benefits. Both can be analyzed on three different levels: the **micro** level (the benefits for

Figure 1 **Types of VET benefits**



Source: Cedefop

individuals); the **meso** level (benefits for enterprises/groups); and the **macro** level (benefits for society as a whole). Figure 1 gives examples of VET benefits according to the dimension (economic and social) and the level of analysis (micro, meso and macro).

Economic and social benefits reported bycountries

The economic dimension

Macro level:

- economic returns on VET: research on the evaluation of public and private investment in VET in terms of profitability and economic growth;
- labor-market outcomes of VET: reduction of unemployment and inequality resulting from more people attaining a VET qualification.

Meso level:

- performance of enterprises: costs and benefits of training in terms of profitability and innovativeness;
- employee productivity: individual abilities and capacity to contribute to profit after VET.

Micro level:

The benefit of IVET and CVET on individuals: earnings, finding a job, reduction of skill mismatch, integration into the labor market with satisfactory wage, further career development opportunities and professional status.

The social dimension

Macro level:

- effects of VET across generations within families and how family impacts on skills development;
- relationship between VET and health: how education and VET can support the health of a nation;
- social cohesion: multidimensional concept measured by, for example, tolerance, trust, formal and informal networking (social and relation capital), low grade of social polarization, etc.;
- how education and VET can reduce delinquent and criminal acts in a society.

Meso level:

Inclusion of disadvantaged or marginalized groups through education and VET.

Micro level:

Personal well-being: quality of life for individuals and effects on personal development, attitudes and motivation.

Training and skills development play a vital role in individual's productive capacity and are integral part of Human Resource Development (Javied and Hyder, 2009). Human resource development improves economic growth and productivity. Economic growth of a country crucially depends on skills for producing goods and services of better quality at competitive prices (Asghar and Siddiq, 2008; Khan, 2005; Mouzakitis, 2010).

Rapid economic growth demands a mixture of skilled worker; technician, technologist, engineers, research professionals and innovative scientists trained in the areas linked with national development and need of the industries. The accelerated economic progress of the Asian Countries like China, Japan, Malaysia and also Australia are the excellent examples in point. It is an established fact that technical education and vocational training can help individuals to generate income and contribute towards economic growth and social development of a country by acquiring knowledge and skills (National Skill Strategy, 2008).

Indonesia's workforce is characterized as having comparatively low skills and less prepared to compete in today's globalized world. Rapid technological changes now require individuals to learn and relearn skills throughout their working lives by ensuring its relevance and effectiveness. The most important outcome of an effective human resource development system is that it opens up decent employment opportunities by enhancing workers' abilities to secure and retain jobs, progress at work and cope with the change (Kazmi, 2007, p-105).

A classification of VET

From a theoretical perspective, VET can be classified in the following categories (Grubb and Ryan, 1999):

- pre-employment VET: prepares individuals for the initial entry into employment; in most countries these are traditional programs of vocational and educational training in schools; they are found both in schools and workplaces as dual systems and are often operated by national ministries of education;
- upgrade training: provides additional training for individuals who are already employed, as their jobschange, as the technology and work environment become more complex, or as they advance within thecompany;
- retraining: provides training for individuals who have lost their jobs so that they can find new ones, or forindividuals who seek new careers to develop the necessary competences for employment; individuals inretraining programs, by definition have already had a labor-market experience; therefore, retrainingmay not have a direct connection with the occupation they already have;

- remedial VET: provides education and training for individuals who are in some way marginal or out of themainstream labor force; typically those who have not been employed for a long period of time or whodo not have any labor-market experience; usually people depending on public income;

Cedefop (2008) offered a distinction which encompasses the previous ones: initial and continuouseducational training (IVET and CVET)

- IVET refers to general or vocational education and training carried out in the initial education system,
- usually before entering working life. Some training undertaken after entry into working life may be considered as initial training (e.g. retraining). Initial education and training can be carried out at any level in general or vocational education (full-time school-based or alternate training) pathways orapprenticeship;
- CVET is defined by the area of education or training that comes in after entry into working life and aims to help people to (a) improve or update their knowledge and/or skills; (b) acquire new skills for a career move or retraining; (c) continue their personal or professional development (Cedefop, 2008); continuing education and training is part of lifelong learning and may encompass any kind of education: general, specialized or vocational, formal or non-formal, etc.

Technical and vocational education as preparation for an occupational field should proVocational Education and Training vide the foundation for productive and satisfying careers and should:

- lead to the acquisition of broad knowledge and generic skills applicable to a number of occupations within a given field so that the individual is not limited in his/her choice of occupation and is able to transfer from one field to another during his/her working life;
- at the same time offer both a thorough and specialized preparation for initial employment, including self-employment, and also training within employment;
- provide the background in terms of knowledge, skills and attitudes for continuing education at any point in the individual's working life.

Vocational Education Strengthening Project of Government of Indonesia

Ensuring that the system responds to Indonesia economic and employment needs is therefore a high priority Government consultations with industry indicate (i) some industrial developments are constrained due to Indonesia comparative lack of skilled workers, and (ii) widespread concern about the lack of relevance of some vocational schools courses to industry requirements. The needto strengthen ties with local industry is strong; the Project will provide continuous upgrading courses for vocational schools graduates and other workers. Growth in formal sector employment opportunities has stagnated in recent years with unemployment and underemployment becoming significant social concerns and slowing poverty reduction.

Vocational education should be adaptive and flexible with the globalization era. This kind of education will continue to grow in the future where the role of higher-quality human resources. Globalization will also be very instrumental for the provision of qualified labor will occur regardless of geographic boundaries. They are ASEAN Free Trade Area (AFTA), General Agreement on Tariffs and Trade (GATT), which evolved into the World Trade Organization (WTO), European Economics Community (EEC), North American Free Trade Area (NAFTA), and Asia Pacific Economics Cooperation (APEC). Consequently, all them are inevitable to conduct analysis in Vocational and Technological Education to prepare the quality of human resources of labor force to develop Indonesian economy growth.

Based on information above, Industrial Support in Vocational Education and Training Development to Achieve Quality Assurance of Indonesian Professional Labor Force is inevitable.

To attain Quality Assurance of Indonesian Professional Labor Force need a good cooperation amongst **Industry**, **Ministry of Labor & Employment** and **Chambers of Commerce** and **Ministry of Education and Culture** with a clear **Government Policy**. In addition, management system as a key to conduct the program successfully.

Have the keys to success in Management Planning Keys to success in the Management Plan are as follows:

1) Have a quality culture
2) Consistent with what has been planned
3) Have a clear Vision and Mission
4) Oriented to the labor market and industry
5) The discipline of time and a steady job.
6) Always creative and innovative in creating goods and services.

Implementation of the Academic System

The curriculum for each course is competency based curriculum is organized according to the Minister of Education Decree No. 232/U/2000 dated December 20, 2000, and No. 045/U/2002 dated 2 April 2002.

Implementation of **ISO 9001:2008Quality Management System**, from the International

Certification Body of TÜV Rheinland Germany precisely Right

Forward up to five years related HR issues, not least, there are three major challenges to be faced, namely:

- Improve *the quality of manpower* in the country to jack up the national competitiveness of the business world;
- Improve *the quality of formal workers* to seize the opportunities of employment opportunities abroad;
- Develop entrepreneurial professionals use *to reduce unemployment.*

In the process of recovery and in later years can be expected that Indonesia will be more attractive as a place for investment by foreign investors due to various reasons. Among those reasons are: (1) a large number of people who become potential buyers of the product produced, (2) the availability of labor force whose productivity is still very likely to be improved, (3) the availability of resources that can be processed and a requirement region or the world community, (4) the maintenance of stability in politics and increase open space for the operation of market mechanisms, and (5) the decline in costs not directly related to production and distribution activities (clean government or corporate governance).

Employment opportunities abroad has not been used optimally, particularly for semi-skilled labor. Meanwhile, Indonesia has a great chance to be a product of the exporting country based on local renewable resources (renewable local resources) such as in agriculture, plantation, forestry, and fisheries. To develop the potential of the necessary qualified human resources.

Similarly, Indonesia has a great opportunity to send a formal and semi-skilled workers place because Indonesia has a population of productive working age group in particular is great. It required candidates formally qualified workers so as to compete with workers from other countries.

Development Challenges of Education from 2010 to 2014

Based on the analysis of external factors, internal, potential, and educational problems can be identified many challenges faced in implementing the educational development of the next five years. These challenges are as follows:

a. Complete the derivatives regulations mandated by legislation in the field of education;
b. Meeting the global commitment to achieving the goals of the Millennium Development Goals (MDGs), Education For All (EFA) and Education for Sustainable Development (EfSD);
c. Ensure favor of the poor to gain access to quality education in the broadest of all the educational unit;
d. Ministry of Education and Culture Strategic Plan 2010 to 2014
e. Implement the National Standards of Education to emphasize the balance between thought though, if a sense, though the liver, and sports;
f. Improving the quality and quantity of vocational education / vocation to meet local and national needs and be able to compete globally;
g. Produce creative human resources through education necessary in the development of the creative economy;
h. Increasing the effective coordination with the ministries / other agencies and local governments;

4. Conclusion

Particular attention should be given to planning the development and expansion of technical and vocational education by:

(a) giving high priority to technical and vocational education in nationaldevelopment agendas as well as in plans for educational reform;
(b) evaluating national short-term and long-term needs;
(c) providing appropriate current and future allocations of financialresources;
(d) establishing a national body responsible for coordinating planning intechnical and vocational education based on analysis of statistical dataand projections to facilitate complemen

Vocational Education and Training and vocational education is best served by a diversity of public and private providers. The appropriate mix can be found in many ways, with the responsibility of governments being to facilitate choice while ensuring quality.

Government and the private sector should recognize that Vocational Education and Training is an investment, not a cost, with significant returns, including the well-being of workers, enhanced productivity and international competitiveness.

Therefore, funding for Vocational Education and Training should be shared to the maximum extent possible between government, industry, the community and the learner, with government providing appropriate financial incentives. Furthermore, the governments of least developed countries in particular should seek bilateral and multilateral capacity-building cooperation in technical and vocational education.

Research on the benefits of education has a long history in the economics of education, but the

same cannot be said about research on the specific benefits of VET.

For VET policy-making, however, it is crucial that decisions on actions andmeasures are adequately supported by sound research evidence.

By having a good management Training and Skill Development in Vocational Education in various area in technology for vocational school graduates. Vocational education should be oriented to the manpower need of the community and market driven. Vocational education should be evaluated on the basis of economic efficiency.

1) Development of Vocational Education and Training /vocational policy requires the establishment of cooperation, support and full participation of government organizations and non-governmental.
2) Vocational Education and Training should be able to respond to the challenges of globalization in providing qualified human resources that have a match with the industrial world and International standards
3) Vocational Education and Training Development Trend must map the ability to see the dynamics of market segmentation and technological developments.
4) Do efforts to repair, among others:
5) a). Revised curriculum is oriented to the industry field and the world of work, b). Changes in competency-based teaching system by referring to the industrial model, c). Improving facilities and infrastructure, d). Development of quality and quantity of teachers and lecturers, and e). Supporting Training and Skill Development program by Industries. Training and Skill Development in Individual's Productive Capacity will be hoped achieved by doing these efforts.
6) Vocational Education and technology education institutions will be developed if the synergy with Industrial and Business fields internationally.

5. Suggestion

1) Studying and implementing the Quality Assurance Model-Based Vocational Education Industry (Model Development of Quality Assurance in Vocational Education Based Industry) in developed countries.
2) Socialize "**pattern**" Culture of Quality and Discipline Leaders Work to the elements of the Faculty, Lecturer, technicians, laboratory, and students and all civitasacademica.
3) Provide quality cultural training and discipline to all civitasacademica by consistently applying the ISO 9001:2008 Quality Management System which is accompanied by reward and punishment.
4) **Curriculum development,** and implementation of teaching and learning process (PBM) is designed in a mature, consistent, and commitment to quality assurance-oriented graduates to the needs of industry and labor market.
5) The keys of the success of implementing the quality assurance industry based as the benchmark to be applied at the Vocational and technology education throughout Indonesia.
6) Improving the quality of managerial capabilities-based planning and performance of each unit within Vocational and technology education institutions.

6. Recommendation

The low quality of human resources is reflected in the level of education and training will affect the competitiveness of the economy. Required an integrated program of work improving the competence of Indonesian human resources in order to encourage the improvement of competitiveness of national economy.

In order to develop the national economy's competitiveness and Indonesia in particular for the construction period 2009-2014, recommended Five Key Program of National Competitiveness Improvement based human resources involving government, business and education-training institutions, namely:

1) Increasing Competence of Manpower

Not the synchronization and synergy enhancing the competence of human resources in order to improve productivity and competitiveness are urgent to be addressed. Synchronization and the revitalization of education institutions, training, certification of competency, productivity, internships and job placement is absolutely necessary. Required the coordination mechanism within government, business and communities to increase the competence of workers, among others through the establishment of a coordination of the National Committee for the Improvement of Education and Training HR Competency.

2) National Policy on Skill Development

A National Policy on Skill Development should be formulated by the Ministry of Labor & Employment and Chambers of Commerce and Industry. The objective is to create a workforce empowered with improved skills, knowledge and internationally recognized qualifications to gain access to decent employment and ensure Indonesia competitiveness in the dynamic Global Labor market. It aims at increase in productivity of workforce both in the organized and the unorganized sectors, seeking increased participation of youth. Thus, there is a need for

increasing capacity and capability of skill development programs.

3) **Capacity and Capability of skill development programs** should be addressed to **Engineering and Technology:** Civil Construction/Maintenance, Mechanical Servicing, Audio Visual Technician, Maintenance and Repair of Electrical Domestic Appliances, Building and Road Construction, Building Maintenance, Ceramic Technology, Computer Technique, Rural Engineering Technology, Materials Management Technology, Rubber Technology, Structure and Fabrication Technology, Sugar Technology, and Services.

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