# INTERNATIONAL CERTIFICATION AND ACCREDITATION OF THE VOCATIONAL EDUCATION IN THE BUSINESS/INDUSTRYFIELD

**Roemintoyo**
Sebelas Maret University, Surakarta Central Java, Indonesia

Coresponding e-mail: roemintoyo@yahoo.co.id

***Abstract:*** Quality control of ins titutions of higher education teacher training/LPTK, it seems that needs to be a renewal in order to adjustment with the demands of the user. The one that should be re-examined, associated with the conceptual foundation and the existence of independent institutional. Therefore, in this paper, developed a conceptual activities concerning the accreditation of vocational education institution as well as its implications.

**Key words:** *Quality assurance (QA), accreditation, certification, quality management*

## 1 INTRODUCTION

The weakness of global competitiveness of Indonesia in the field of economy and trade lately become the big issues that need to be observed. These circumstances caused by the product quality control system and the existence of weak services. Less efficient production systems, as well as the low quality of human resources. This is affecting the level of abroad investment.

The level of Foreign Direct Investment (FDI) was ranked 138 of 140 countries are above a bit of State of Gabon and Suriname (Republika, September 24th 2003). Meanwhile, in 31 Asian countries, Indonesia's position in the field of education, domestic finance, and information technology each are ranked respectively at 31 (the lowest). Other data showed that the Human Development Index (HDI) ranked Indonesia to 112 from 175 countries assessed, that is still under the State of Vietnam.

The condition above also indirectly affect the employment problem. The issue of employment is a difficult problem to solve due to its complex. The unemployment rate from year to year in General showed an increasing trend. Unemployment in 1990 amounted to 28.5 million, in 1998 increased to 39.8 million, in 2000 is decreased to 37.6 million, and in 2003 recorded 38.5 million (Republika, July 17th 2003), hopefully it will decrease, article 15 states that decreases steadily.

The quality of products and services, the efficiency of the production process, as well as the quality of the workforce in the industry is very closely related to standardization. In order to guarantee the quality (quality assurance) according to the existing of quality standards required the series activities of a specific certificate publication, called certification. So there was the chain that can not be separated between the quality of the industry field, standardization, certification and accreditation.

In this paper will be to untangle the staple things among others: (1) Introduction, (2) Engineering, Technological and Vocational Education (3) Policy on higher education quality assurance in education. (4) Why does it need the quality, (5) The importance of quality improvement in the business/industry field. (6) The standardization in the business/industry field, (7) The international standard. (8) The national standard. (9) The activity of the certification. (10) The international accreditation. (11) Closing.

### 1.1 Engineering, Technological and Vocational Education

Referring to the Indonesia law number 20, 2003 about the education system: types: includes the general education, vocational, academic, profession, religious and special. The general and vocational education are included in the Directorate General of primary and secondary education, while the academic education, profession and vocational included in the Directorate General of higher education. In the explanation stated:

a. Vocational education is secondary education that prepares students especially for working in a particular field.

b. Profession education is a higher education after the Bachelor's degree program that prepares learners to have a job with a special skill requirements.

c. Vocational education in higher education is preparing students for a job with a certain maximum applied expertise equivalent to bachelor program.

Apart from the issue of translation of the word "vocational" and "students", but based on the description above, the vocational education is the

higher education in a particular expertise. Next on article 19 verse 1 states: higher education is secondary education after secondary education which includes the proram of diploma, Bachelor, master, specialist, and doctoral degrees held by the College, Institute or University. Article 20 verse 1: the College may take the form of the Academy, Polytechnic, high school, Institute or University.

## 1.2 The policy of higher education (DIKTI) in the quality assurance of education.

The framework of a long-term higher education development (KPPTJP) 1996-2005 stated the key word for all organizations is the quality, in the sense that the results and impact of that organization has always been required to meet a certain set of standards from which can be deduced its quality by the user community. Furthermore this qualities as the centre of reference of the other basic components in the paradigm of higher education system setup specified as follows(1) the results and performance of the College must always refer to a sustainable quality. (2) sustainable quality, which is based on creativity, academica personal productivity that can be stimulated by management pattern based autonomy. (3) the autonomy of the College should be harmonious with the accountability/liability of implementation, performance and results of the College. (4) the right of the public to obtain the reliable and valid information about the implementation, performance and results of the College performed in the accreditation process by the National Accreditation Agency. (5) the main managerial action informing that underlying the decision and planning in higher education is the evaluation process.

Directorate of higher education has devised a long-term strategy for the next (2003-2010) which includes three focuses on (1) the competitiveness of Nations, (2) the autonomous College, (3) the fair college organization. With respect to the fair College organizations, listed quality assurance (QA) where sustainable quality improvement should be the main interests. QA should be the intern supporter, was instituted in the Organization's standard procedure, and may also involve other parties from outside.Due to the quality is the interests of all stakeholders, quality improvement should be addressed to generate external (output) and the quality of the impact (outcomes) as part of public accountability. BAN, Association of profession, and other independent agencies can play an important role as an objective institute control and audit institutions as to the particular standard. Consider the current existence of plurality, government agencies such as the BAN along with other independent agencies should provide information to the public (customer steakholders) about the quality of an educational institution.

## 2 WHY DOES IT NEED THE QUALITY?

An institution has a moral obligation to provide the best education to participants of his protégé, as promised the Agency using funds from the Government as well as the community, periodically need to be responsible with the implementation of the program and the transparent use of funds, so it needs to be accountable. In addition to that an institution needs to be professional in managing its education, so as to provide the output as well as a good and necessary outcomes of the general public and the user community user of its graduate.Next in order that the institution may be sustainable then need to have strong competitiveness, due to the heavy competition. The institution does not have competitiveness will soon disappear from circulation. To meet all the aspects above, then the institutions need to have a quality management system (SMM or QMS) that can guarantee the quality of educational Quality Assurance. Next in order for these efforts to have a high value and has the impact to a high value, then its better that these institutions must cultivate an internationally recognised certificate (Iskandar.M, 2004).

## 2.1 Globalization: The liberalization of educational services and sport

Indonesia has became a member of GATT (General Agreement on Tariffs and Trade), and became a member of the WTO (World Trade Organization), the goal is to create the goods trading and services freely and fairly in order to create economic growth and development to realize the prosperity of mankind. Within the framework of the WTO service sector there are 12 listed, which one is the education services which include primary, middle, high, non formal and other education and also sports. Four forms of trading in educational services are:(1) *Cross border supply*: services by suppliers of services from a country to a consumer of other countries. Example: *distant learning*. (2) *Consumption abroad*: services by the supplier of services in one country to consumers outside the country. For example: Indonesia students are studying abroad. (3) *Commercial presence*: services by suppliers of services that comes from a particular country through the presence of the business entity state is physically in the territory of other countries. Example: foreign schools in Indonesia. (4) *Movement of natural person*: services by suppliers of services that comes from a particular country through the presence of professionalnya in the territory of the country. Example: the presence of foreign teachers in Indonesia. (Iskandar.N,2004).

Furthermore when the national education institutions both public and private are not capable of delivering good *output and outcome*needed jobs

in this country, then the manpower who certified competencies or accredited graduation who comes from abroad would freely fill Indonesia job market and fill the important and strategic position. While the national education institutions graduate will occupy the low position or even unemployed. As assumed by BPS that at this moment the number of D-3 and S-1 graduates who haven't got a job yet above amounts about 1,000,000 people (BPS data, 2010).

## 2.2 The object of the Audit for Accreditation and certification

To get the accreditation or certification, many factors are evaluated and audited by assessors or auditors, such as: (1) **Competence**: in the entire level and type of education, the goal of education is: providing the best *output* and *outcome*, through granting the competence to the protégé. Directorate of higher education make the definition that competency is a combination of three aspects: (a) **knowledge**, (b) skill to realize his knowledge to be something useful or value-added, and (c) **responsibility** (**attitude**) that is able to carry on and develop the two previous aspects in order to be something that has a positive value, which is useful for the community.

These three aspects can not be separated from each other, especially the aspect that shows the mental/attitude of the owners of the two other aspects. This attitude aspect will determine the good/bad and advantages/disadvantagesof the study results for many years. Perhaps the high unemployment figures, caused mainly by the attitude, in addition to the aspects of skill. Therefore, any institution very need to do moral construction-moral-mentally against the student, not just sell its knowledge in the learning process. (2) **The learning process (PBM):** the four main types of activities in the learning process is face-to-face, structured and independent can be expressed:

Table 1. Types of activities in the learning process

| The Types Of Activities | Location | Activities | Character |
|---|---|---|---|
| 1 Knowledge transfer | Class | College | Face to face |
| 2 Knowledge Validation | Laboratorium | Lab practicum | Structured |
| 3 Knowledge Digestion | House library | Self study, group study | Independent |
| | Kelas | Tutorial | Structured |
| 4 Skill Development | Workshop, studio, field | Production work, Workshop, PPL/ Field work Practice | |

Source: Iskandar.N, 2004

## 3 The importance of quality improvement in the Business/Industry field

Indonesia is facing an era of free trade is full of competition among Nations. To be able to compete, products, goods and services produced by the business/industry field should be in the high quality. The relationship between the quality and the ability to compete and illustrated by Goetsh and Davis (2010) in the athletics field. Juan Arbalio practiced hardly since HIGH SCHOOL and maintain quality in sports branches run fast 100, 200 and 400 m. Juan Arbalio realized that competitors of thehigher rank then the quality is certainly much higher. With continuous quality control, he was able to seize the Championship in HIGH SCHOOL level, district level, up to the world level (the Olympics).

A similar phenomenon also occurs in the business field in the face of market developments. The business/industry field that so far only face the worldwide competition. Only in the business/industry field that can have a world-class quality production that is able to compete globally. According to Voehl, Jackson, and Ashton (1995), the quality above means that should meet the international standards.

One of the important factors in the effort to improve the product quality is the optimum human resources that can reduce costs and improve production results. The business/industry field concerned in fulfilling the customers satisfaction, making a profit, as well as efficiency and effectiveness. This can be achieved if placed *"the right people in the right place at the right time*" (Torrington and Huat,1994).

## 4 The standardization on the business/industry field

National standards board (2001) defines that the standardization as the process of formulating, establishing, and revise the standards, orderly implemented and cooperate with all parts. While the standards according to this Institute is a technical specification or something that includes standardized procedures and methods which are organized based on the consensus of all the parties concerned having regard to the terms of the safety, security, health, environment, development of science and technology, also experience, the recent development and the future to get the maximum benefit. The definition of this standard in line with the definition of standards according to Voel, Jackson and Ashton (1995:17) which states: *Standards imply both specifications ( against which a product can be measured to establish if meetts the standar) and commonality whether that be a single firm, an industry, a country, or the world.*

Thus, standardization is the process of formulation, determination and application of standards which is a technical specification that can be measured, as well as recognized by certain communities within the scope of business entities, industry, country or the world.

## 5  International standard

One of the international standardization institutional is ISO (*International Organization for Standardization*). ISO 9000 started in 1979 when the *British Standards Technical Commitee* 176 formulates the principles of generic quality to satisfy the international minimum standard of how manufacture industries establish quality control. This method includes not only product quality control, but also maintains the steady and product predictability. ISO 9001:2000 is the ISO first version launched in October 2000.For all the organizations that have grabbed an ISO, then has a duty to perform modifications in accordance with the new requirements which implemented in ISO 9001:2000, although there were no differences in contrast. ISO 9000 which published in 1987, there were many variants of ISO 9000: ISO 9000, ISO 9001, ISO 9002, ISO 9003 and ISO 9004 (Hadiwiardjo &Wibisono, 2005, 98).

## 6  National standard

Related to national standardization, Indonesia has had National Standardization Board (BSN) is an agency that helps the President in organizing the development and coaching in the field of standardization in accordance with the legislation in force. While the Indonesia national standard (SNI) is the standard that set by National Standardization Board and applies nationwide.

The Ministry of industry and trade have formulated Indonesia national standard (SNI) for industry and trade, through the national consensus meeting after approval of the BSN. Formulation of the SNI in the field of industry and trade as well as its application is intended to protect the user or consumer trust, improve the quality of production, enhance production efficiency, production rationalizing, simplifying and salubrious the competition in the trade, as well as increase awareness of users or consumers in order to support the development of the industry in particular and economic development in General.

In this case the center of the standardization of industry and trade Department (1999) has published "a catalogue of Indonesia National Standard of industry and trade in 1998/1999. SNI organized into 4 groups (1) agriculture and food, (2) materials and equipment used in agriculture. (3) building and construction, (4) electronics engineering, (5) mechanical engineering, (6) chemical engineering, (7) metals, (8) textiles, (9) automotive engineering, (10) ) shipping, (11) engineering of railroads, (12) household goods, (13) pulp and paper mill, (14) ceramics, (15) medicines, cosmetics, and medical equipment, (16) basic standard and miscellaneous units.

## 7  Sertification Activities International Standart Sertification

Ross (2005) mentions that the benefits derived from the product and service quality improvement are: improve the customer loyalty, increase competitiveness, enlarging the selling price, reducing customer complaints, increase productivity, and reduce the waste/cost.

The same benefits derived from ISO 9000 certification, within the meaning of the certification activities produce quality management/quality system for a single company or industry. In addition, the ISO 9000 standard sertification brings recognition by an international community, such as the European Community (European Community).

Some examples that show the benefit of the ISO 9000 certificate is empirically described by Ross (2005) s follows:

1. United Kingdom Government survey revealed that 89% of companies that obtain ISO 9000 has a greater efficiency.
2. The British Standards Institute estimates that the company obtained ISO 9000 can reduce operating costs on average 10%.
3. By adopting the ISO 9000 standard, Du Pon succeeded in raising the delivery on time (on time dilevery) from 70% to 90%.

International standard Certification ISO 9000 is a series of stages of registration activities, according to *Productivity and Quality Management Consultans* (1990), the series of ISO 9000 registration through the stages of preparation, documentation, implementation, auditing, and certification. Each stage consists of a number of activities with specific targets.

a. Preparation phase activities include an explanation of ISO 9000, project planning and the establishment of a team of ISO 9000.
b. Stages of Documentation covering activities of *coaching* and review. A variety of *coaching* should be implemented in this stage a. l. design topics of quality system, development of draft procedure of quality system etc.
c. Implementation phase is directed to assist ISO 9000 team in providing an explanation to the user.
d. Stage auditing activities, which included
e. l. Training, preparation for audit quality coaching
f. Consulting and reporting
g. Coaching for correcting action
h. It is the last stage of the certification phase of the registration process, which was carried out by a team of ISO 9000.

## 8  International Accreditation

Company or industry that decide to implement ISO 9000 faced with two important things, namely, how to implement this system with their best, and how to ensure that the certificate obtained is recognized by customers (Ross, 2005). Recognition by customers

can be achieved if the certification is recognized by the accreditation board that have the legitimacy.

## 9    Accreditation according to ABET

In the U.S there are many accrediting agencies ranging from agriculture to nursing. For engineering and technology, the famous accreditation board is the *Accreditation Board for Engineering and Technology (ABET).* At the global level has been published "The APEC Engineering Register" by APEC Human Resuces Working Group (2002).

According to ABET 2000 accreditation engineering process is done with the purpose of: (1) ensure that graduates from accredited programs appropriately prepared to enter and continue the practice of engineering, (2) stimulate the increasing of engineering education, (3) encourages new and innovative approaches to engineering education, and (4) identify accredited programs to the public. In General, the ABET mentioned that accreditation considerations that lies in the question of whether an engineering education programs really prepare graduates to enter the field of engineering on the professional ranks.

How does the system of accreditation for engineering education according to ABET can be seen in *"Engieneering Criteria 2000"* published by the *Engineering Accreditation Commission of Acccreditation Board for Technology (1998).* This document consists of three parts namely: *Criteria for Accrreditation Program in Engineering in the United State* "which is general information, *Manual of Evaluation Process, and the Program of Self-study Instruction".*

General information contains of the purpose of accreditation, the basic accreditation criteria, cooperative education criteria, advanced programs. The purpose of the accreditation according to ABET was mentioned upfront. Accreditation criteria includes (1) student of college, (2) the purpose of the educational program, (3) the results of the assessment program, (4) the professional component, (5) Lecturer, (6) facilities, (7) institutional support and sources of financing, and (8) the criteria of the program. Cooperative education criteria, i.e. elements of cooperative work in the industry, is part of the professional component. Whereas the criteria for advanced courses equal with basic program criteria, with an additional one year study above the basic level, and engineering projects or research activities as a report showed mastery on the course and a high communication skills. (Ahmad Sonhadji, 2004).

## 10 CONCLUSION

In this section, the publisher concludes that the ability to compete against Indonesia in the field of economy and global trade are determined by the control system of the products and services quality, production systems, as well as the quality of human resources. Therefore the existence of a steady standardization is needed on all three of these factors. Furthermore, to guarantee the quality (quality assurance) according to the existing quality standards required certification and accreditation systems. In this case is recommended to the business/industry field and educational/ training institutions to prioritize the implementation of stadardization, certification and accreditation, at the level of sectoral, national, and also international.

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