

CURRICULUM DEVELOPMENT IN VOCATIONAL HIGH SCHOOL (SMK) OF THE INTERNATIONAL STANDARD SCHOOL PILOT (RSBI):

A study at SMK RSBI Automotive Engineering

Agus Budiman

Lecturer of Automotive Technical Education Faculty of Engineering Yogyakarta State University
agusbe_otouny@yahoo.co.id

Abstract

Vocational High School (SMK) of The International Standard School Pilot (RSBI) is a school that meets all national education standards (SNP) that is enriched with a certain quality advantages derived from OECD member countries or other developed countries. These standards include: (1) content standards, (2) competency standards, (3) process standards, (4) standards of educators and educational staff, (5) facilities and infrastructure standards, (6) management standards, (7) financial standards, and (8) assessment standards. According to government regulation, SBI curriculum is based on content standards and standards of competency that is enriched with the standards of OECD member countries or other developed countries. The curriculum contains programs that are prepared in the form of competencies that will be implemented in the learning. Under the influence of internal dan external factors, then the curriculum should be developed. The purpose of curriculum development SMK RSBI is to achieve relevance and flexibility in the form of graduates are absorbed in the word of work and can adapt to the conditions in the workplace. Curriculum development in SMK RSBI involved various stakeholders including schools, governments, universities, and the work of the world. Based on the parties involved, determining the curriculum content can be done with various approaches. These approaches are philosophical, introspection, DACUM, task analysis, Delphi techniques, and other approaches. Based on government regulation and varous approaches in determining the curriculum content, curriculum development in SMK RSBI can be done with an approach that involved the world of work as a largest stakeholder. Curriculum development in SMK RSBI was done by defining the philosophy, identifying competencies, designing and implementing learning process, and assessment.

Keywords: curriculum development, vocational high school (SMK), international standard school pilot (RSBI), national educational standard (SNP), curriculum content, OECD

1. Introduction

This article is a research proposal about curriculum development in vocational high school (SMK) to prepare conducting a research as a part of final duties in doctorate program in Graduate School of Yogyakarta State University. The proposal will discuss a plan of curriculum development in SMK RSBI Automotive Engineering in Yogyakarta and Central Java. Really, curriculum development is an usual activity in every school, but it is a special activity for SMK RSBI, because the SMK RSBI is assumed an extra ordinary school. The curriculum is a programmed learning experience to achieve educational goals. On educational practices, curriculum serve as guidelines in the implementation of learning. In the curriculum contains standards of competence and basic competences that will be outlined plans the learning process and also the implementation of the learning process. The curriculum is based on a particular philosophy, the philosophy of the state and also in educational philosophy. The

curriculum of SMK RSBI in Indonesia is based on the Indonesian state philosophy and philosophy of vocational education in Indonesia and in the world. Thus curriculum of SMK RSBI in Indonesia prepared taking into account local wisdom and influence of globalization.

On the one hand, local wisdom is everything that exists in certain areas that are considered to be strengths. The strength of tradition, ethics, customs, value systems and the like that have been recognized by the nation. Through this local wisdom of all the traditions, customs which have been considered a good potential can be maintained. On the other hand, globalization is the effect of global economic system, including production process, technological development, values in a certain country. Globalization usually come from countries more developed than the countries concerned.

In general, SMK Automotive Engineering program is now divided into five spectrums, namely: (1) light vehicle engineering, (2) heavy equipment, (3) ototronics techniques, (4) motorcycle engineering, and (5) the vehicle body

engineering. Curriculum of Automotive Engineering in SMK RSBI will be developed with consider the five spectrums. The problem is, how to develop the curriculum in the field of Automotive Engineering in SMK RSBI? How do we develop the curriculum of Automotive Engineering in SMK RSBI based on local wisdom and globalization?

2. Characteristics of SMK RSBI

The Pilot of International Standard School (RSBI) schools program in Indonesia is based on the fact that the ability of Indonesian in some important aspects are relative lower than the ability of other countries. Human Development Index (HDI) also show that from 2005 to 2011 the position of Indonesia at relatively low ranking compared to other country. Even in 2011, according to the version of the HDI, the position of Indonesia is at position 124, which means that position is drastically decreased. The Human Development Index is a comparative measure of life expectancy, literacy, education, and standards of living for countries worldwide. It is a standard means of measuring well-being, especially child welfare. It is used to distinguish whether the country is a developed, a developing or an under-developed country, and also to measure the impact of economic policies on quality of life. http://en.wikipedia.org/wiki/Human_Development_Index (download on March 25, 2012 at 09.39 pm).

To improve the quality of education in Indonesia, in Law of Republic of Indonesia Number 20 Year 2003 on National Education System in Article 50 paragraph (3) stated that each regency/cities are held at least one international school. Based on the Law, since 2006 the government of Indonesia has set a program RSBI schools as preparation for SBI schools, including SMK RSBI. There are sixty SMK RSBI in 2006, and one year later (2007), SMK RSBI number increased to 119 schools. Number of SMK RSBI in 2009 increased drastically to 320 schools comprising 230 SMK RSBI with state funds, and 90 SMK RSBI with Asian Development Bank (ADB) funds. In the year 2012, the number of vocational schools RSBI is 335 consisting of 246 SMK RSBI with state funds, and 89 SMK RSBI with ADB funds. The above description shows that the government is very serious in improving the quality of educational programs.

Regulation of Minister of National Education No. 78 of 2009, the Government of Indonesia declared SBI are schools that had met national standard of education (SNP) that is enriched with the quality advantage derived from OECD member countries or other developed countries. The regulation also is applied in SMK

SBI. In this formula, X is defined as quality advantages on national standard of education (SNP) derived from OECD member countries or other developed countries. Eight of national standards of education consist of : (1) content standards, (2) competency standards, (3) process standards, (4) standards of educators and educational staff, (5) facilities and infrastructure standards, (6) management standards, (7) financial standards, and (8) assessment standards.

According to the Regulation of the Minister of National Education No. 78 of 2009, some of the purpose of SMK SBI is that graduates: (1) has competence in accordance with established standards of competency, (2) has a comparatively high competitiveness and excellence featuring locally at the international level, and (3) has the ability to compete overseas work. Although it is a national school, but graduates must have an international competence. The international competence is not only from schools in OECD member countries or other developed countries, but also it is from the international world of work both abroad and at home. The world of work in the OECD member countries or other developed countries is of the industries and other business areas. Competence and products of industrial and business areas usually have an international standard in the industry represented by the ISO. However, most of national or international industrial and business areas in Indonesia already has an international industry standard demonstrated by the ISO by as well.

Relating to issues concerning the competency of graduates, Trilling and Fadel (2009: p. 7) wrote that a few years ago, four hundred hiring executives of major corporations were asked a very simple but significant question: "Are students graduating from school really ready to work?" The executives' collective answer? Not really. The study clearly showed that students graduating from secondary school, technical college, and universities are solely lacking in some basic skills and a large number of applied skills: (1) Oral and written communications, (2) Critical thinking and problem solving, (3) Professionalism and work ethic, (4) Teamwork and collaboration, (5) Working in diverse team, (6) Applying technology, and (7) Leadership and project management. The description of Trilling and Fadel above illustrated that the skills of 21st century are the competencies needed by graduates of SMK SBI.

3. Curriculum of SMK RSBI

Understanding of the curriculum has been declared by experts with a variety of reasons. Nevertheless, it was agreed that curriculum is a guideline in providing education. Finch and

Crunkilton (1999: 11) wrote that curriculum may be defined as the sum of the learning activities and experiences that a student has under the auspices or direction of the school. Beane et.al. (1986: 29) stated that definitions of curriculum fall into one of four categories: (1) curriculum as a product, (2) curriculum a program, (3) curriculum as intended learnings, and (4) curriculum as the experiences of the learners. Ornstein and Hunkins (2009: 10-11) specify five basic definitions of curriculum. First, curriculum can be defined as a *plan* for achieving goals. Second, curriculum can be defined broadly, as dealing with learner's *experiences*. According to a third definition, less popular than the first two, curriculum is a *system* for dealing with people. Fourth, curriculum can be defined as a *field study* with its own foundations, knowledge domains, research, theory, principles, and specialist. Zais (1976: 6-10) proposed six concepts of the curriculum, namely: (1) curriculum as the program of studies, (2) curriculum as course content, (3) curriculum as planned learning experiences, (4) curriculum as experiences "had" under the auspices of the school, (5) curriculum as a structured series of intended learning outcomes, and (6) curriculum as a (written) plan for action.

The above description shows that the curriculum tends to be interpreted as a program of planned learning experience, as a system of program, as a product used as a guide. In the Regulation of Minister of National Education No. 78 of 2009 on the Second Part of Article 4 of paragraph (1) stated that SBI curriculum was arranged by content standard and graduates competency standard enriched with a standard from OECD member countries or other developed country. In implementing the program of education, SMK RSBI Automotive Engineering in Indonesia use Education Unit Level Curriculum (KTSP). The curriculum can be organized and developed by the education unit (school).

Based on preliminary observation made in several SMK RSBI Automotive Engineering in Yogyakarta and Central Java in 2010 showed that the curriculum implemented is KTSP and curriculum spectrum 2008. Based on the information presented the school, the curriculum was designed jointly by the school, the world of work, educational experts, and local government. Reviewed from the structure of existing programs, curriculum of SMK consist of seven programs or activities, namely: (1) normative program, (2) adaptive program, (3) productive program, (4) local content, (5) personal development (extra curricular), (6) visits to industry, and (7) industry practice. Normative program is a competency development program

related to personality development as a citizen of Indonesia. Adaptive program is the development of competencies related to the fundamental of engineering or basic science of automotive engineering. Productive program is the development of competencies related to key areas of Automotive Engineering, namely basic vocational subjects and practical vocational subjects. Suchs programs consist of a variety of subjects, activity in the non-subjects, the activity in the school, and outside school. Thus competence in the curriculum can be attributed to the above programs. These competences are in the form of normative competence, adaptive competence, and productive competence.

Finch and Crunkilton (1999: 14-18) stated that the basic characteristics of the vocational and technical curriculum include: (1) orientation, (2) justification, (3) focus, (4) in-school succes standards, (5) out-of-success standards, (6) school-community relationships, (7) federal (central government) involvement, (8) responsiveness, (9) logistics, and (10) expense. Finch and Crunkilton also stated that there is a rationale for curriculum development in vocational and technical education, namely: (1) data based, (2) dynamic, (3) explicit outcomes, (4) fully articulated, (5) realistic, (6) student-oriented, (7) evaluation-conscious, (8) future-oriented, and (9) world class-focused. Based on description of Regulation of Minister of National Education, Trilling and Fadel report and statement of Finch and Crunkilton above, then the curriculum of SMK RSBI Automotive Engineering should be developed. How is the way to develop the curriculum of SMK RSBI Automotive Engineering?

4. Curriculum Development in SMK RSBI

Marsh and Willis (in Ornstein and Hunkins, 2009: 211) stated that curriculum development refers to a collection of procedures that results in curriculum changes. Curriculum development consist of various process (technical, humanistics, and artistic) that allow schools and schoolpeople to realize certain educational goals. There are something related to curriculum development. One of procedures in the curriculum development is to determine the curriculum. This procedure is carried out after planning the curriculum, and conducted before the implementation of the curriculum. Finch and Crunkilton (1999: 129) stated that determining curriculum content for vocational and technical education is very rewarding and yet extremely frustating. The rewarding aspect is the final product: content that may be actually used in the instructional environment to aid vocational students in achieving their fullest potential. The frustating aspect of determining curriculum content consist

of identifying that which is truly relevant to both instructional and occupational settings. Finch and Crunkilton (1999: 129-135) proposed six factors associated with determining curriculum content, included: (1) time and dollars (moneys) available, (2) internal and external pressure, (3) federal state, and local content requirement, (4) skills needed by employers, (5) academic and vocational education content concerns, and (6) level at which content will be provided.

There are six strategies or approaches of curriculum content determination, namely: (1) Philosophical Basis, (2) Introspection, (3) DACUM, (4) Task Analysis, (5) The "All Aspects" of Industry Approach, (6) The Critical Incident Technique, and (7) The Delphi Technique. DACUM approach is considered as a the most appropriate approach in determining the content of the curriculum. DACUM is acronym for Developing A CurriculumM. DACUM is an approach where skilled expert-workers from industry or bussiness world are asked to reflect on the content of the cirriculum, without the involvement from of school personnel. This approach is based on the assumption that determination of the content of technology education and vocational curriculum should have a high relevance to employment needs, while teachers and instructors involved in teaching everyday just cannot give a positive contribution.

Based on description above, the research methodology of curriculum development in vocational high school (SMK) of International Standard School Pilot (RSBI) in Automotive Engineering is proposed as follows:

4.1 Research Objectives

The planned objective of this research is: (1) to describe the curriculum that is being used in SMK RSBI Automotive Engineering, (2) to assess the suitability of curriculum of the SMK RSBI Automotive Engineering used so that the competence of the graduates are recognized nationally and internatinally, (3) to understand the development of curriculum that has been done in SMK RSBI Automotive Enginee-ring, (4) to carry out curriculum development should be done in SMK RSBI Automotive Engineering, in oder to meet the needs of the workforce in industry and bussiness world recognized nationally and internationally, and (5) to quantify the impact of curriculum development for students' SMK RSBI competences.

4.2 Planned Research Method

Methods of research will be conducted by Research and Development (R & D) approach according to Borg and Gall (1989: 784-785) with ten major steps as follows: (1) research and information collecting, (2) planning, (3) develop

preliminary form of product, (4) prelimi-nary field testing, (5) main product revision, (6) main field testing, (7) operational product revision, (8) operational field testing, (9) final product revision, and (10) dissemination and implementation.

4.3 Model of Curriculum Development

Model used in the curriculum development in SMK RSBI Automotive Engineering is DACUM strategy. Curriculum development with the use DACUM strategy will enhance the participation of industry and bussiness world in the planning students compe-tences in SMK RSBI, so that graduates have the competencies recognized nationally and internationally.

4.4 Procedure of Development

According to the approach suggested by Borg and Gall above, the curriculum development procedure is describe as follows: (See Fig.1)

DACUM strategy will be implemented by inviting some skilled worker from automotive service industry to conduct an inventory of work standards of the industry. The DACUM is done by a workshop activity through the Focused Group Discussion (FGD) guided by a panelist. This workshop can be attended by some shool teachers as observers. Results of inventory of the industrial jobs is the content of the curriculum that will be compiled in SMK RSBI Automotive Engineering. Trial results of this curriculum content are expected to be taken in to consideration to make a prototype of curriculum of SMK RSBI Automotive Engineering.

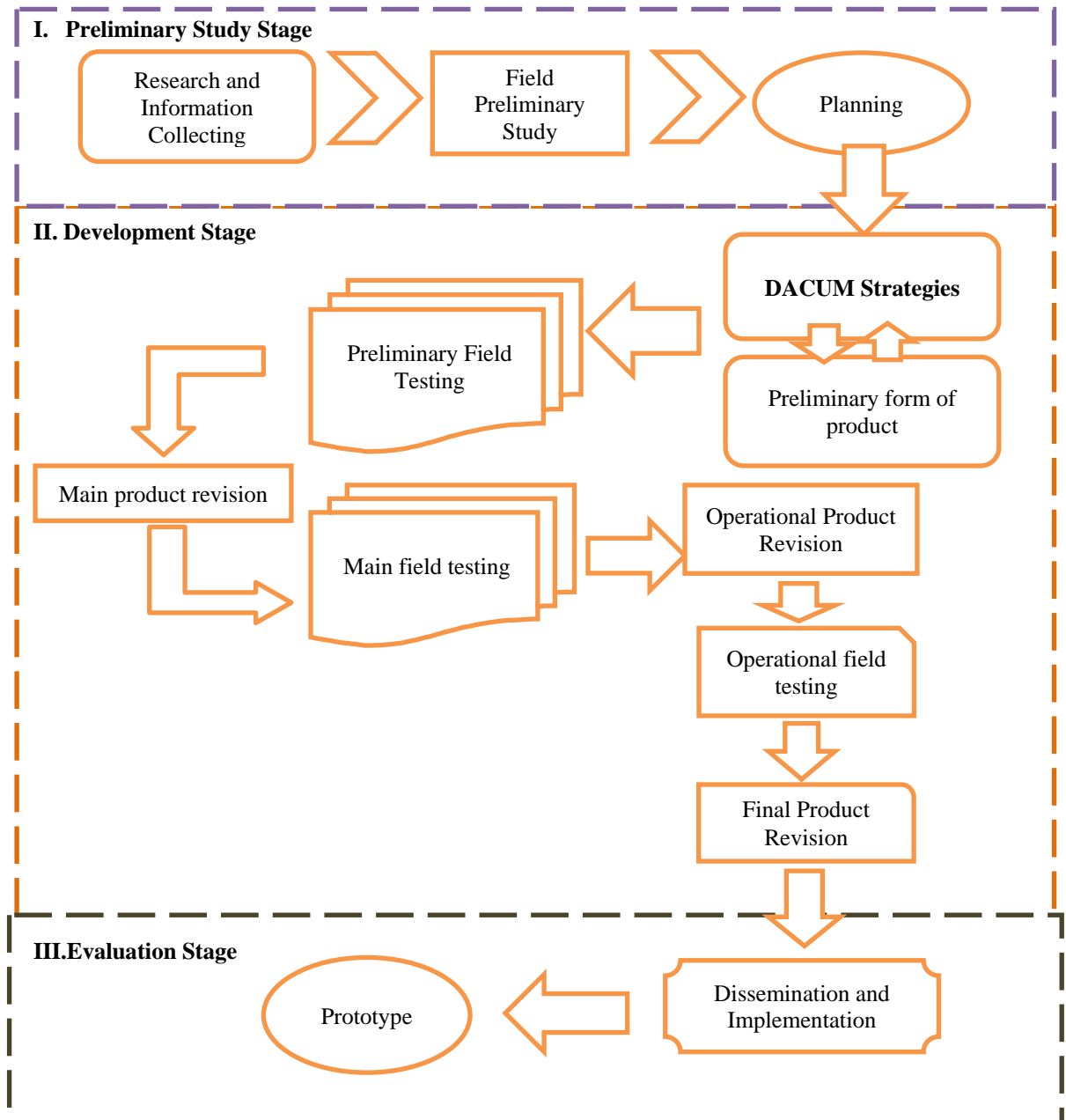


Figure 1. Procedure of Curriculum Development

4.5 Subject of the Research

This research will be conducted in SMK RSBI Automotive Engineering with state funds and in SMK RSBI Automotive Engineering with ADB funds in Yogyakarta and Central Java Province (See Table 1)

Table 1. Table 1. SMK RSBI Automotive Engineering in Yogyakarta and Central Java as subject of the research

	SMK RSBI with state funds		SMK RSBI with ADB funds	
	Yogya-karta	Central Java	Yogya-karta	Central Java
SMK Public	2	5	1	1
SMK Private	1	2	-	-
Total	3	7	1	1

4.6 Collecting data and Instrument of the research

Data of the research will be collected by observation, documentation, question-naire, and interview. Instrumen of this research are observation sheets, documents, questionnaire sheet, and interview guide. Data of the impact of curriculum development for students' SMK RSBI competences were collected by test in quasi-experiment.

4.7 Technique of data analysis

Data of curriculum feasibility were analyzed by qualitative descriptive and quantitative technique by percentage calculation. Data of the impact of curriculum development for students' SMK RSBI competences were analyzed by statistical t-test.

5. Conclusion

This article is a research proposal that will be conducted to develop a curriculum of Automotive Engineering in SMK RSBI. The curriculum development is the based on the assumption that graduates of SMK RSBI must have the competencies nationally and internationally recognized by the world of work. The research is conducted by Research and Development (R & D) approach according to Borg and Gall with ten major steps. To develop the curriculum of Automotive Engineering in SMK RSBI can be done by DACUM strategy. DACUM strategy is a part of overall curriculum development in SMK RSBI, namely: defining the philosophy, identifying competencies, designing and implementing learning process, and assessment. DACUM is one of the most appropriate way in determining the

content of the curriculum for SMK RSBI, because the content is developed by some incumbent skilled workers in motor vehicle service industry. Curriculum development by DACUM strategy is conducted by workshop activity of some incumbent skilled workers in a Focused Group Discussion (FGD). The result of workshop is a list of work required in the industry. The result will be tested on a limited and extensive field tryout in several SMK RSBI in Yogyakarta and Central Java. The expected result of the research is a curriculum prototype that can be used in SMK RSBI Automotive Engineering for preparing graduates to achieve competencies recognized nationally and internationally. This result of curriculum from DACUM is expected to be appropriate with priorities in curriculum planning in technical and vocational education according to Asia and the Pasific Programme of Educational Innovation for Development/APEID (1992: 13-17) namely: (1) multi-skilling, (2) flexibility, (3) retrainability, (4) entrepreneurship, (5) credit transfer, and (6) continuing education. In order to accommodate the above priorities and considerations, curricula of courses are formulated around the following main components: (1) broadacademic base, (2) basic training, (3) specialized training, and (4) industrial upskilling.

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