The Effectiveness of Learning Quality Management of Productive Subject Teachers in Vocational High School

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Abstract—This study aims to analyze the effectiveness of the learning quality management conducted by the teachers of the productive field subjects at the vocational school business and management program. The problems that have been studied include how the preparation of the learning plan, the implementation of learning, evaluation and follow-up evaluation of learning are going to be conducted. This study is important because vocational teachers are the spearhead of learning in schools, where teachers are given the authority to develop curriculum or learning programs. The curriculum prepared by the teacher is an implementative curriculum that is implemented in schools. In the preparation of the curriculum and in its implementation it is necessary to apply the quality management principles so that the implementative curriculum is compiled relevant to the needs of the working world and industry. This study uses a descriptive analytical approach with qualitative methods. Respondents in this study are the principal, head of expertise program (program keahlian), Teachers at SMKN 1 Bandung and SMKN 3 Bandung. The results of the study show: First, the paradigm used in curriculum development for the two SMK Negeri are demands/market driven and life skills. Second, the implementation of dual system education (PSG), the use scientific approach in learning, and the learning models that are used: a) Discovery learning, b) Inquiry learning, c) problem based learning, d) Project based training, in the working world the learning model used is carried out through industrial work practice programs. Third, evaluation of learning carried out by productive subject teachers is carried out comprehensively which includes aspects of knowledge, attitudes and skills in each substantive that is learned. Fourth, the follow-up of the evaluation activities carried out by the productive field teachers and the preparation of reports on learning outcomes are carried out to improve the learning process, help students who have not achieved competence through remedial learning and enrichment.

Keywords—effectiveness; quality management; learning; productive teachers

I. INTRODUCTION

SMK is a vocational education institution that aims to improve students' knowledge and skills, to prepare middle-level labors who are skilled, educated and professional, and able to develop themselves in line with the development of science and technology and art (science and technology). Vocational education is given a role to produce productive human beings, which is human labor, not human burden for his family, society and nation, therefore vocational education must always be related to productivity [1,2]. Thus vocational education is a program that is directly linked to preparing someone for a particular job. In the implementation, vocational education still shows a weakness in the concept and its implementation, this seems to have not been able to produce graduates who are ready to work and who can satisfy customers, especially the world of industry [3,4]. Therefore an important issue that must always be put forward in the context of the implementation of education in SMK is how much the provision of vocational education is in line and relevant to the needs of the community, especially the needs of labor, business and industry.

Vocational education that is carried out through SMK currently tends to be separated from the real world, this is because it is still a schooling education system that is conservative and does not easily change along with changes and increasingly rapid technological developments. Symptoms of “mismatch” between educational institutions and vocational training with the business/industry, eventually bear “underqualified” graduates. This condition is characterized by: (1) the structure of the Indonesian workforce is still dominated by less educated workers; (2) preparation of middle-level labors is seen as if it was only an assignment and is only carried out by the SMK; (3) the level of unemployment of secondary school graduates is 12% for graduates of SMK and 18% for graduates of high school (4) mastery of competence and labor productivity in Indonesia is still low compared to other state workers in the Southeast Asia, thus Indonesian labors hardly compete, as a matter of fact plenty of job opportunities in Indonesia are filled by foreign workers [1].

This situation has been going on for a long time now. This symptom is a problem of education and quality and relevance [5]. The radical problem is inseparable from the school management, which is related to the learning process. Problems related to the learning process have something to do with teacher commitment and performance. The main problem in learning is how the teacher can manage the class so that the
learning that is carried out meet the standard, this is such a crucial commitment to the teachers, for despite the curriculum changes and fitting up the education facilities, it will not have a significant impact on improving the quality of education if it is not supported by the performance of good teachers, who are able to actualize an excellent learning process. Learning will be qualified if the teacher is able to perform the quality management of the learning activities that are being conducted.

Quality management is implemented in learning activities so that the process and student learning outcomes become qualified. Fandy Tjiptono argued, "To produce the best quality requires continuous improvement efforts on human abilities, processes, and the environment [6]. The Directorate of Dikmenjur emphasized that in order to answer the challenges of labor problems, it is necessary to have a vocational education institution that is reliable and capable of implementing quality management [7].

Based on the above problems, researchers are encouraged to conduct this study with the intention of obtaining an overview of the quality management of learning as an effort to produce graduates who have capabilities that are in line with the needs of the business and industry. In particular, this study aims to 1) verify and describe the data of learning plans and programs developed by productive field teachers in an effort to improve the relevance of education; 2) verify, describe and interpret the strategies for implementing plans and learning programs conducted by productive teachers in SMK in Bandung; 3) verify and describe the evaluation activities carried out by productive teachers in SMK in Bandung; and 4) verify the follow-up carried out by the productive sector teacher as an improvement effort to actualize the quality education that is relevant to the needs of the industrial world.

This study is important for vocational teachers are the spearhead of learning in schools that play an important role, teachers are given the authority to develop curriculum or learning programs, which in the implementation need to apply quality management principles so that the curriculum will be relevant or meet the needs of the working world.

Quality management is a directed activity in an effort to meet consumer needs consistently and achieve continuous improvement in every aspect of the organization. Activities in quality management are reflected in: continuous improvement directed at predetermined learning goals, that is a better fundamental process of interaction of students with educators and learning side, which is students. Learning is the way to organize the effort of people. The objective is to harmonize their efforts in such a way that not only do they approach their assigned tasks enthusiasm, but participate in improvement of how they get done [11].

In implementing quality management an organization must adhere to the philosophy of making everything well from the beginning of the process to the end of the production process. This is what underlies the concept of zero defect known in quality management. Philip Crosby introduced four quality management philosophies: (1) The definition of quality is conformance to requirements, (2) The system of quality prevention is a problem, (3) The performance standard of quality is zero defect, and (4) The measurement of quality is the price of nonconformance, or the cost of quality [12].

Quality management is oriented to a process that integrates all human, suppliers and customer resources within the institution. This means that quality management is related to ability, delegation of responsibility to human resources and is a process that can be controlled, and is not some sort of coincidence.

Quality management needs to be carried out on all school activities, including learning problems, because learning will be of quality if there are efforts made systematically by the teacher, starting from making learning plans, implementation and evaluation which are always associated with customer needs and expectations.

The word learning contains two activities, namely learning and teaching. Activities related to efforts to teach students to develop intellectual potential in them. This means that learning requires communication between two directions or two sides, namely the teaching sides, which is the teacher as an educator and the learning side, which is students. Learning is the fundamental process of interaction of students with educators and learning resources in a learning environment that is directed at predetermined learning goals, that is a better behavior change [13, 14].

Learning quality can be said as an illustration of the merits of the results achieved by students in the learning process carried out. Schools are considered quality if they succeed in changing the attitudes, behaviors and skills of students associated with their educational goals. According to Muljon that the concept of learning quality contains five references, namely: "(1) conformity, (2) attraction, (3) effectiveness, (4) efficiency and (5) learning productivity" [15].
II. RESEARCH METHODS

The research method used in this study is a qualitative method. Research carried out sets out from problems in the environment of events that are going on and can be observed and verified in real time during the course of the study. Events that were observed in the context of efforts to improve the quality and relevance of education, are the ones carried out by school managers. Research subjects between the head of expertise program, teachers who are capable of teaching subjects in productive fields. Collecting data and information using in-depth observation and interviews, documentation studies, recordings and photographs.

There are several stages carried out by researchers in carrying out this qualitative research, such as: (1) the orientation stage, (2) the exploration stage, and (3) the stage of "member checking" [16]. Orientation Stage, this stage begins with the researchers' interest in the problem of quality management of learning carried out by teachers teaching subjects in productive fields. The Exploration Phase, at this stage the focus has become clearer, the data collected is more directed and more specific. Conducted through observation and interview activities. Stage “Member check”, this stage is the result of observations and collected interviews, which from the beginning has been carried out an analysis, poured in the form of a report, reproduced, distributed again to the respondent in question to be read and assessed according to the information provided. In this stage, triangulation and discussion activities are carried out.

As for methods that can be achieved in data analysis, are: 1) the reduction of data, 2). "Display" of data, 3) the conclusion and verification [16].

A. Checking the Validity of Research Data

Implementation of checking the validity of the data is based on four criteria: the degree of trust, authenticity, dependence, and certainty [17].

1) Credibility: Tests on the credibility of the data in this study is done by triangulation of data sources and, as well as the check.

2) Transferability: Basically the results of this study do not rule out the possibility that it can be applied to other situations and places, if they have the same characteristics and situations. For this reason, the researcher tries to convey the results of the research in detail so that it is easily understood and interpreted by anyone interested in this research.

3) Dependability: Dependability or dependence is done to overcome errors in the conceptualization of research plans, data collection, interpretation of findings, and reporting of research results. Thus it requires deponent auditor. The deponent auditors in this study are principals.

4) Confirmability: To determine reliability of the data in this research is done by confirming data with informants or experts.

III. RESEARCH RESULTS AND DISCUSSION

A. Development Plan for Learning Programs in SMK by Productive Subject Teachers

There are 3 majors or programs of expertise in SMKN 1 and SMKN 3 Bandung For business management, which are: Accounting, Office Administration, and Marketing. Providing education to these SMKs uses the revised edition of Curriculum 2013. The curriculum in SMK is divided into three groups: 1). Normative group, are subjects that are regularly allocated, which include: Religious education, Citizenship Education, Indonesian Language, Physical and Sports Education, and cultural arts. 2). Adaptive group consists of English, Mathematics, Science, Social Sciences, Computer Skills and Information Management, and Entrepreneurship and 3). Productive group consists of a number of subjects classified in Basic Vocational Competencies and Vocational Competencies.

SMKN 1 and 3 have established a competency standard agreed upon by the parties concerned, especially the business/industry and professional associations. Vocational graduate competencies are designed to contain 3 components of competence which are interrelated unity in the form of intact personal graduates. The Competences of Vocational School graduates include: normative competence: to form a personality that is God-fearing and devoted, noble, has a sense of responsibility both personally and as workers, as well as members of the Indonesian citizen in general. Component of adaptive competence: contains abilities that can equip graduates in developing themselves, such as the ability to communicate and use information, think logically and critically, and have the motivation to always want to move forward. Productive component: contains technical competencies (in work) in each field of expertise.

Developments of competence above are targeted for teachers in developing learning programs. Learning plans or programs, in the form of semester programs, syllabus and lesson plans. Especially for Teachers who teach productive subjects in the development of learning programs manifested in the form of syllabus and lesson plans. Each teacher is required to compile an annual / semester program, syllabus, and lesson plans. Especially in developing lesson plans, productive field teachers first analyze the condition of students, facilities and infrastructure and the complexity of activities,

Whereas in developing vocational competence refers to SKKNI (Indonesian National Work Competency Standards). This is so that the formulation of competencies developed by teachers is relevant to the needs of the world of work and industry.

The learning program includes the formulation of competencies that have been compiled to suit the needs and expectations of the business world and the industry is synchronized and validated by the working world and professional associations and elements of universities, including: IAI (Indonesian Accounting Association) for accounting expertise programs, Secretary Association of Indonesia (ISI) for Office Administration expertise program, ASPRINDO (Indonesian Retail Company Association) for
Marketing expertise program. In the validation and synchronization, professional associations and the business world and industry provide input on the formulation of competencies that must be possessed by vocational students, subject matter and related soft skills, such as attitudes, work performance, attire and work ethics.

Given the rapid development in the business/industrial world, every year or two years learning programs developed by teachers are routinely reviewed at the beginning of the school year. With routine validation and synchronization it is hoped that the curriculum will remain current, so that school graduates have the ability and skills that are in line with the development and demands of the working world. In quality management this is important so that standards or programs are set according to the needs and desires of customers [18,19]. The SMK curriculum needs to pay attention to the needs of the working world as stated by Shoemaker stated; "Curriculum for vocational starts with a job and with the student on job" [2].

The implementation of education in SMKN 1 and 3 uses the Curriculum 2013. The development is always attentive to demand/market driven. This is due to the nature of vocational education that is directed at preparing workers, thus it is necessary to pay attention and adjust to market demand. Therefore, the SMK curriculum is always strived to always fit the needs, challenges, and dynamics of the working world. This indicates a good vocational education, things like Rosemary Kolde raised by stating that vocational education program development must be linked with the private sector and supporting different business and industry [20].

In the development of the curriculum include: 1). Academic approach, 2). Life skills approach, 3). Broad-based curriculum approach (CBC), 4). Competency-based curriculum approach (CBC), 5). Training-based curriculum approach, 6). Production-based curriculum approach. These approaches underlie each teacher in each of the expertise programs available at SMK in developing their learning programs. So that graduates are expected to be able to compete at the local, national and even international levels.

Based on this approach an implemented curriculum was developed:

- Scope of fields developed and taught to students is flexible in the face of a future that is full of possible changes.
- Providing the basis of science and technology that is truly the basis for further development
- Providing basic skills with the right work techniques, as a basis for professional development.

In the SMKN 1 and 3 curriculum learning activities for productive programs, carried out in schools and in the business world/industry or industrial work practices are aimed at students of class XI, 4th semester for 3 months, with a total of 600 hours of class hours. This program needs to be given to provide work experience to students, so that when students finish their education at school, they already have work experience, which can be used as a provision in finding a job.

Student competencies that are expected to be developed in work practice programs include:

1) Accounting program: For students who are studying in the accounting expertise program, they are expected to have accounting knowledge and skills so that they are able to manage the business independently. Employment that can be filled are: a). accounting and service company accounting personnel, b) manufacturing company accounting staff and c) financial administration.

2) Office administration program: Students who study the office administration expertise program are expected to have knowledge and skills regarding office administration management, work fields that can be filled are: a) office administrative staff, b) receptionist, c) telephone operator, d) secretary assistant.

3) Sales or trade program: Students who are studying in the trade/sales expertise program are expected to have knowledge of funds in trade/sales management skills, jobs that can be filled are: a). sales administration staff, b). business machinery operators, c) management of export and import documents, d). salesperson, e). marketing staff, f). Warehousing staff, g) bookkeeping sales.

The competencies developed in the implementation of education in SMKN 1 and 3 Bandung, in addition to technical ones, are also non-technical abilities that cover two things, namely normative behavioral abilities, both as individuals and as social beings, as well as a God’s creature, and the ability to behave that lead to self-development, both in order to improve performance in environmental as well as an increase in educational qualifications.

B. Implementation of Learning Programs by Productive Subject Teachers

According to the nature of vocational education which emphasizes more on developing student skills, therefore in implementing an implementative learning program or curriculum, teachers in SMKN 1 and 3 use a scientific approach and various learning models include: 1) Discovery learning, 2) Inquiry Learning, 3) Problem Based Learning, 4). Project based learning and 5) Production Based Training. In implementing the learning program, the school also brings guest teachers from the working world. As in bringing in banking elements from the Jakarta Stock Exchange.

In the interest of learning productive subjects, it is more directed at practical activities, which in implementation can be done in class, laboratory, business units that exist in schools or other facilities that can be used as a place of learning or practice students, such as in school shops or cooperatives, laboratories, school offices. Learning activities for productive subjects are also carried out in the business world and industry, both private agencies and government agencies, in the form of internship or industrial work practices, which last for 3 months for students of class XI. Learning experience in the working world is important for vocational school students, because the working world can be used as a learning resource. By learning in the working world, students will gain knowledge, skills, attitudes and values [21,22].
Internship activity is a learning strategy of expertise or skills that are designed based on the procedures and work standards of the actual (real job) to produce goods and services according to the demands of markets or customers. World industrial enterprises selected for the program work practices tailored to the skills program and arranged pick the business/industry that has had administration and good management and orderly (no business license, organizational structure, have work rules, etc.), the location of the business is around Bandung. In conducting Internship, every student carries Student Internship Activity Journal.

The series of activities carried out by the school in the implementation of industrial work practices include:

- Preparation. includes administrative preparations, coordination meetings with the implementing team, meetings with parents of students
- Implementation, including: direction, release, placement, implementation of internship, data collection and monitoring.
- Evaluation and reporting, including the implementation of technical internship examinations, certification.

For the sake of the success of the internship program, the school collaborated with several business/industry sectors to develop and establish industrial work programs and fields of work that they could do during student internship. Including:

1) Sales program, field of work includes:
- Doing merchandise sales, which includes: sales of merchandise, selling attitude, introduction of sales mechanisms.
- Making a purchase, including: introduction of goods, introduction to purchasing procedures.
- Trading Management, including: supply of goods, distribution of goods.
- Presentation of goods sales, including: structuring and introduction of goods, classification of goods, preparation of goods, maintenance of goods, customer service.
- Trading Administration, includes: recording the transaction on the sale of books, recording the transaction on the bill of sale, delivery and returns.

2) Office administration program, field of work includes:
- Management of outgoing mail, including: making and typing letters, expiring outgoing mail
- Arrangement of incoming letters, including: writing letters and distributing letters.
- Management of records, including: management of letters, arrangement of files, rediscovery of archives.
- Handling the telephone
- Reception
- Introduction and operation of office machines (computers, typewriters, facsimile and photo copy)
- Management of goods administration includes: drafting goods requirements, goods bookkeeping, and reporting of goods administration.
- Protocol activities
- Staff Administration, including: employee planning, employee procurement, employee transfer.

3) Finance / accounting program, field of work includes:
- Introduction to the training company business entity
- Introduction to the accounting systems of the training companies / agencies
- Identifying the transaction receipt
- Recording transactions, making financial reports and operating computers
- Ability Test.

In the internship activity, each student has a supervising teacher from the school and a supervisor from the business world. The main task of the supervising teacher is to communicate with the supervisor of the business world and monitor the progress of students in the workplace, examine journals and receive reports, provide inputs and suggestions from mentors in the business world related to student internship. While the task of the supervisor from the working world is to determine activities or abilities that can be practiced by students in the working place, provide guidance and training to students in certain occupations, foster discipline problems, independence, cooperation and skills in communicating and providing assessment on students work during the practice using the assessment format that has been provided in the student internship journal.

In implementing internship activities, there are always problems, as to how not all competencies that have been set in the internship journal or the field of work outlined in the training program can be actualized, because not every student gets or is given the opportunity to do work that is appropriate for the work done in the business world/ the industry, or because the activities carried out in the business world/industry are not entirely able to actualize activities/ work or competencies that have been set in the journal of internship activities. As the end of this internship activity, each student is required to make a report, and as evidence that the student has completed the internship activity, each student receives a certificate from the business/industry.

C. Evaluation of Learning Conducted by Productive Subject Teachers at SMKN 1 & 3

Learning evaluation carried out by the teachers of productive subjects in SMK 1 and 3 aims to determine student learning outcomes as well as the effectiveness of the learning process. Evaluation of students is carried out thoroughly which includes aspects of knowledge, attitudes and skills in each substantive that is learned. Teacher's assessment of knowledge is in the form of written tests, oral tests, assignments. Skills assessment is carried out through performance appraisal, and project appraisal, both of these assessments are carried out to
measure learning outcomes in the form of process skills and/or product results.

Assessments conducted by productive teachers in SMK 1 and 3 in learning are carried out in the form of:

- **Quiz:** is a process carried out to measure the achievement of students’ competencies on an ongoing basis in the learning process to monitor progress and improve student learning outcomes for each basic competency (KD)
- **Middle Semester Examination:** is conducted by the teacher to find out the achievement of students’ competencies after carrying out 8-9 weeks of learning activities.
- **Final Examination:** is conducted by teachers to measure the achievement of competence of students at the end of the semester.

Questions developed by teachers in productive fields are usually in the form of cases or problems related to a task or job. This form of test aims to determine the level of ability of students (competencies) in solving problems or in doing a task/work that is appropriate to the program expertise.

As for the internship activities, the assessments are carried out by the supervising teacher who is in the student practice area (DUDI). This assessment is carried out as long as students take part in internship, using a format developed by the school and has been aligned with work standards that apply in business and industry. Another aspect assessed in this internship activity is the assessment of the attitudes and personality of students while carrying out work practices, which include: honesty, responsibility, discipline, interpersonal relations, cooperation, independence, appearance, work creativity, work ethics and work ethic.

**D. What the Follow-Up of Evaluation Activities Carried Out by Productive Field Subject Teachers is**

After completing the evaluation of learning outcomes, the results of student answers that have been corrected are returned to students, in the corrected answer sheet, notes or suggestions for students are provided as improvement material.

Evaluation activities carried out by teachers are not only to find out student learning outcomes or student competencies, but are used as a basis for improving and developing learning activities conducted by teachers. Student learning outcomes besides being used as material for preparing progress reports on learning outcomes, also carried out to improve the learning process through remedial learning and enrichment. Remedial learning is carried out by teachers for students who have not reached SKM (Minimum Completion Standard), which is 70 to 75 by giving re-learning and giving assignments or special training, and utilizing peer tutors. While enrichment learning is done through group learning outside of lesson hours, assignments or independent learning.

Thus the results of the assessment carried out by the teacher, either in daily assessments, tests, Mid-Semester examination and final examination, not only the results describe student competence, but also will be feedback for teachers to upgrade and make improvements in implementing the learning process or in the form of individual and group services for students who have not reached minimum standards. In terms of quality management, it is important to be done by the teacher, as stated by Edward Sallis “The results of the evaluation process must be discussed with students. This aims to complement the results of the evaluation” [23].

**IV. CONCLUSION**

In general, teachers who teach productive subjects have implemented quality management, this can be seen from: 1) the process of planning a learning program based on analysis of students, school facilities and complexity aspects as well as the needs and expectations of business and industry. 2) the implementation of learning is consistent with lesson plans drawn up, using a variety of learning models that allow knowledge and skills can develop well, learning is implemented in schools and in the workplace, the problem is that in practice activities not all established competencies can be developed during work practice 3) Evaluation is carried out thoroughly, in terms of knowledge, attitude and skills, 4) there is feedback on the results of the evaluation, as material for remedial and enrichment to students as well as for the improvement of the learning process.

**V. RECOMMENDATION**

- For school principals it is necessary to continue to facilitate the teachers in curriculum synchronization and validation activities so that these activities can continue so that the curriculum implemented by the teacher is always relevant to the development
- For those who continue to synchronize and validate learning programs with the business world and industry, the learning programs that are developed should always be appropriate to the developments in business and industry.
- In the implementation of learning in schools, always invite guest teachers from the business world and industry to provide insight to teachers and students about the developments that occur in the working world.
- Suggestions and input for improvement of learning programs from alumni who are already working and who are entrepreneurial in order to grow the spirit and entrepreneurial spirit of the alumni are also highly required.

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