Factors Affecting Preparation of the Implementation of Teaching Factory at Vocational High School State 3 Palangka Raya

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***Abstract*—This research is descriptive research with quantitative approach. This study was conducted on the Department of Culinary Engineering, Clothing Engineering and Hospitality Engineering. The research instrument used is a preparatory observation sheet. The results showed; factors that influence the preparation of Teaching Factory implementation are: (1) Laboratory Factor already available school hotel, sewing machine and oven tool is complete and has a Business center; (2) Vocational High School Factor (Teachers) available; (3) Parent Perception Factor of students; (4) Curriculum management has already led to industry; (5) Link and Macth with the industry goes well; (6) Learning result product already has selling and competitive value equivalent to general industrial product; (7) Marketing Factors Learning products have been marketed to the general public; (8) Factors perceptions of the leadership of the Education Office and local parliament related to the technical implementation of Teaching Factory has been done; (9) Learning pattern has been implemented blog schedule but still not apply according to Teaching Factory model; Thus it is clear that Vocational High School State 3 Palangkaraya is ready to implement teaching factory.**

Keywords—teaching factory; learning model; industrial/business

I. INTRODUCTION

Presidential Instruction No. 9 of 2016 Concerning Revitalization of Vocational Schools gave a mandate to the Ministry of Education and Culture to improve the quality of education and competitiveness of Vocational High School through [1]:

- Creating a vocational development roadmap.
- Perfecting and harmonizing vocational curriculum with competencies in accordance with the needs of graduates (link and match).
- Increasing the number and competence of Vocational educators and education personnel.
- Increasing cooperation with ministries / institutions, local governments, and the business / industry world.
- Improving access, certification of Vocational high school graduates and vocational accreditation.
- Establishing a Vocational Development Working Group.

The real problems that occur today in the implementation of vocational education can be identified based on two aspects, namely demand and supply [2].

In the aspect of demand and supply, industry states that the qualifications of graduates are not in accordance with industry expectations, both in the mastery of hard skills, soft skills, and communication skills.

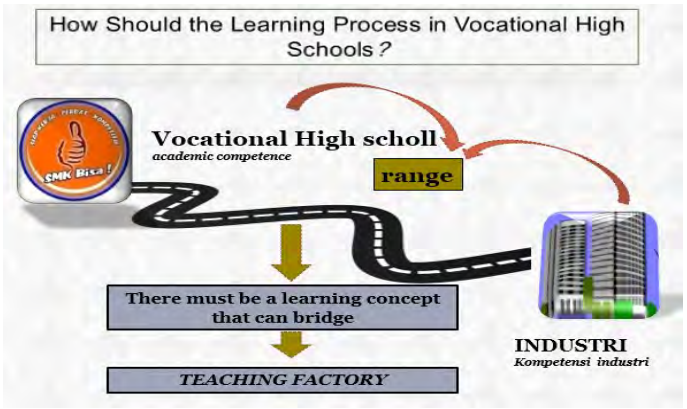

Fig. 1. Learning process in Vocational High School.

A. Literature Review

1) Teaching factory: Lamancusa, Zayas, Soyster, Morell, and Jorgensen, revealed that the teaching factory concept was found because of three things, namely [3]: (1) ordinary learning was not enough, (2) the benefits of students were obtained from practical experience directly , and (3) team-based learning experiences involving students, teaching staff and industrial participation enrich the educational process and provide tangible benefits for all parties.

2) principles of teaching factory: The basic principles of teaching factory in Vocational Schools in implementing the

teaching factory program are: (1) There is an integration of the world of work experience into the vocational curriculum; (2) All equipment and materials and education actors are prepared and designed to carry out the production process with the aim of producing products (goods or services); (3) The existence of a combination of production-based learning and competency learning; (4) In production-based learning, vocational high school students must be directly involved in the production process, so that their competence is built based on production needs. Production capacity and types of products are the main keys to the successful implementation of production-based learning.

Sanggam R. I. Manalu et al. teaching factory is a model of learning activities that are very effective and efficient. Effective means that the teaching factory concept can lead students to reach the competent stage, which is a stage where students deserve to be given authority because they are considered capable [4]. While efficiency means that learning with this model is very operational, requires a low cost and is easy to implement. Some basic values that must be developed to support the readiness to implement the teaching factory, including: a) Sense of quality; provide students with basic skills related to objective quality standards. b) Sense of efficiency; equip students with the ability to work efficiently in order to create optimal work efficiency and measure the level of productivity as is the practice commonly practiced by industry. c) Sense of creativity and innovation; teach students to work creatively and innovatively, practice problem solving skills as a measure of creativity, and the ability to see new opportunities in industries such as products, design.

3) Parameter implementasi teaching factory.

TABLE I. PARAMETER TEACHING FACTORY

Parameter	Sub - Parameter
Management	Financial administration Organizational structure & jobdesc SOP performance and workflow Leadership Impact of TF on institutions Environment
Workshop Laboratory	Equipment Governance of tool usage Space Maintenance, Repair & Calibration (MRC) Management Layout workshop OHS implementation
Learning	Learning Implementation Plans (RPP) and LKS (jobsheet) Practical materials Base practice Training implementation Entrepreneurship Teacher / instructor activities Based on corporate culture
Marketing and Promotion	Marketing & promotion plan Communication media for Teaching Factory Brochures / leaflets / other facilities (website, CD, etc.) Mog up / sample products / models Market reach Person in charge
Products / services	Products for internal needs Market acceptance Delivery Quality Quality control Product innovation / diversification
Human Resources	TF competence Amount and suitability of HR to run Teaching Factory Motivation Innovation (benefits for "users") Team work Training for internal personnel
Industrial Relations	Form of cooperation Project work Technology transfer Investment by industry

II. RESEARCH METHOD

A. Types of Research

This research is descriptive research with quantitative approach.Descriptive method is a method that attempts to describe and interpret things that are happening or events that are taking place. Through this research the researcher wants to know what factors influence the preparation of the teaching factory implementation in Vocational School state 3 Palangka Raya.

B. Research Instruments

The research instrument used in this study:

- Question sheet related to the teaching factory implementation to find out what factors influence the implementation of teaching factory in Vocational High School state 3 Palangka Raya.

TABLE II. TEST RESULTS

Respondents	Indicator Question
Headmaster	Principal perceptions of Teaching factory Implementation The role of the government in the learning process in schools is related to the preparation of the teaching factory Readiness of each department before the application of the teaching factory Curriculum suitability Link and Macth with industry Complete facilities and infrastructure
Teacher	Teacher's perception of the teaching factory's conception Theory learning process and practice Utilization of learning models
Student	The process of implementing theoretical learning and practice Competencies obtained

Based on the results of interviews with researchers with principals, teachers, and students obtained several investments related to the preparation of Palangkaraya State 3 Vocational High School in the implementation of teaching factory learning models, among others: the facilities and infrastructure owned by the school have met the standards in the implementation of

teaching factory where Laboratory is available school hotel, sewing machine and oven tool is complete and has a Business center, Human Resources Factor (Teachers) available, Parent Perception Factor of students; Curriculum management has already led to industry, Link and Macth with the industry goes well, Learning result product already has equivalent selling and competitive value to general industrial products, Marketing Factors Learning products have been marketed to the general public, Factors perceptions of the leadership of the Education Office and local parliament related to the technical implementation of Teaching Factory has been done, Learning pattern has been implemented blog but still apply according to Teaching Factory models.

- Preparation observation sheet to find out the extent of preparation before the implementation of teaching factory in Vocational High School State 3 Palangka Raya.

III. Results and Discussion

A. *Results*

TABLE III. Observasi Results

No	Parameter	Indikator	Skor	Skor Max
1	Management	1	3	5
		2	3	5
		3	3	5
		4	2	5
		5	3	5
		6	4	5
		total	19	30
2	Workshop Laboratory	1	3	5
		2	4	5
		3	3	5
		4	3	5
		5	3	5
		6	3	5
		total	18	30
3	Learning	1	2	5
		2	4	5
		3	2	5
		4	2	5
		5	3	5
		6	2	5
		7	3	5
		total	18	35
4	Marketing and Promotion	1	2	5
		2	2	5
		3	2	5
		4	2	5
		5	2	5
		6	2	5
		total	12	30
5	Products / services	1	3	5
		2	2	5
		3	2	5
		4	2	5
		5	2	5
		6	2	5
		total	13	30
6	Human Resources	1	2	5
		2	2	5
		3	2	5
		4	2	5
		5	2	5
		6	2	5
		total	12	30
7	Industrial Relations	1	2	5
		2	2	5
		3	2	5
		4	2	5
		total	8	20

Fig. 2. Radar results observations preparation of the teaching factory in Vocational High School State 3 Palangka Raya.

Based on results of data analysis of teaching factory implementation at Vocational High School State 3 Palangka Raya can be explained as follows:

1) Management: Analysis of the results of observations of the teaching factory implementation process at Vocational High School State 3 Palangka Raya in terms of Management obtained results including: a) management of the implementation of the financial administration process before carrying out teaching factory already has documentation in financial transactions, but still 30% of its implementation in accordance with accounting standard procedures and after the implementation of the teaching factory, the administrative process is fully in accordance with the accounting standard procedures. b) Organizational structure and Jobdesk have also been carried out, but have not been filled with the appropriate person, c) Activities (planning and implementation) before implementing tefa is only 30%. d) leadership and the teacher council have understood what is industry-based learning where learning activities (planning and implementation) e) before the implementation of factory-related factory impact teaching (planning and implementation) learning in school is still in the form of provision of buildings and infrastructure that are learning standards in vocational schools in general.

2) Workshop / laboratory: Analysis of observation results of the teaching factory implementation process an Vocational High School State 3 Palangka Raya in terms of the workshop / laboratories obtained results include: a) Equipment before the implementation of the teaching factory There are already and are 30% appropriate (competence and ratio) but many of these equipment are old and not in accordance with current technological developments. b) Governance of the use of tools before before the teaching factory There is already a SOP on the use of tools management. c) Before the implementation of the teaching factory there is already a room for learning but it can only fulfill 30% of the need for the learning process. d) Before the implementation of factory teaching Maintenance and Repair & Calibration Management is well planned and executed so that the facility is always ready to use / sustain and in accordance with the precision standards only run up to 30% only. e) Layout workshops before the implementation of the teaching factory are still not in accordance with the standards applied by the industry.

3) Learning and training patterns: Analysis of observation results of the teaching factory implementation process at Vocational High School State 3 Palangka Raya in terms of learning and training patterns obtained results include: a) before the implementation of factory teaching learning implementation plans and job sheet. practical material designed based on product / service and detailed into the SK / KD the learning outcomes have been focused on quality, Basic / Laboratory, but there are still some who have not implemented RPP when the learning process is implemented so that the learning process just flows. b) Before the implementation of teaching factory practical materials are available and are part of the raw material of the production process, learning has focused on appropriate practices up to 60%. c) The practice base before the implementation of teaching factory related to external service processes is still not focused. d) The implementation of the training before the implementation of the teaching factory still applies the conventional model in accordance with the model and schedule issued by the relevant education office. e) before the implementation of teaching factory learning has not focused on entrepreneurship. f) Before the implementation of teaching factory Activities of instructors / instructors have not focused on benefits. g) Based on corporate culture before the teaching factory implementation has not been based on corporate culture.

4) Marketing and promotion: Analysis of observation results of the teaching factory implementation process at Vocational High School State 3 Palangka Raya in terms of Marketing and promotion management, among others: a) Marketing and promotion plan before the implementation of the teaching factory already has marketing & promotion, but not yet focused on input. b) Media communication before the implementation of the teaching factory There is already a communication medium, but not yet focused on input. c) before the teaching factory has been used brochures / leaflets / other facilities (website, CD, etc.) but not yet focused on input d) form The market reach that is owned before the teaching factory is still focused on the collaboration does not focus on input. e) The person in charge of the activity before the implementation of the teaching factory does not yet have an official person in charge (there is a decree), a clear job description is carried out.

5) Products–services: Analysis of the results of observations of the teaching factory implementation process at Vocational High School State 3 Palangka Raya in terms of Products - Services include: a) Products for internal needs before the implementation of the teaching factory already have Products for Internal needs and have focused on 30% cost savings. b) Market acceptance of products / services before the implementation of teaching factory There is already market acceptance, but there is no bargaining value. c) The process of implementing delivery before the implementation of the teaching factory still has no attempt to fulfill the demand. d) Quality before the implementation of teaching factory has quality, but it is not yet consistent / consistent. e) Before the implementation of teaching factory quality control has not been implemented consistently.

6) Vocational High School: Analysis of the results of observations of the teaching factory implementation process at Vocational High School State 3 Palangka Raya in terms of Vocational High School, among others: a) HR competencies before the implementation of the teaching factory already has production / service experience from the industry and the ability to practice but still have not applied the teaching factory concept. b) Before the implementation of teaching factory SDM has motivation.

7) Industrial relation: Forms of school collaboration with industry include: a) There is a form of cooperation in the form of production / service or job order, b) Industrial Relations (Project Work) carried out based on problems / comprehensive industrial innovation / PPC / school final project, c) There is a relationship in concrete technology transfer from industry to institutions that have a positive / sophisticated impact on technological / service development in institutions. Based on these indicators, Vocational High School State 3 Palangka Raya before implementing TEFA basically already has good cooperation with the industry, but the form of cooperation is still in the stage of ordering services when there are activities (event / bazaar / exhibition) and during apprenticeship, technology transfer is only done when the school invite the industry as a guest teacher even if the school funds are sufficient and the form of cooperation is partially not strengthened by the existence of an MOU between the school and the industry (cooperation is only short).

Fig. 3. restaurant school department majoring in culinary.

Fig. 4. Rerestauran Hotel Department majoring in hospitality.

Fig. 5. Department majoring fashion enggineering.

IV. Conclusion

The results showed. Factors that influence the preparation of Teaching Factory implementation are: (1) Laboratory Factor already available school hotel, sewing machine and oven tool is complete and has a Business center; (2) Vocational High School Factor (Teachers) available; (3) Parent Perception Factor of students; (4) Curriculum management has already led to industry; (5) Link and Macth with the industry goes well; (6) Learning result product already has selling and competitive value equivalent to general industrial product; (7) Marketing Factors Learning products have been marketed to the general public; (8) Factors perceptions of the leadership of the Education Office and local parliament related to the technical implementation of Teaching Factory has been done; (9) Learning pattern has been implemented blog schedule but still not apply according to Teaching Factory model; Thus it is clear that Vocational high School State 3 Palangkaraya is ready to implement teaching factory.

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