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Management of strategic innovation competence improvement of students through the teaching factory learning model at the center of exellence vocational school

(Descriptive Study at Center of Exellence Vocational School in SMKN 4 and SMKN 9 Garut)

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Abstract

Center of Excellence Vocational School is a comprehensive breakthrough aimed at responding to challenges in the context of improving the current condition of Vocational Schools, so that they are more in line with the needs of the world of work. So it is necessary to increase students' strategic innovation competencies to produce works through the Teaching Factory learning model in schools. This study aims to get a scientific picture of planning, organizing, implementing, evaluating, constraints and solutions related to increasing the strategic innovation competence of students at Center of Exellence Vocational School, so that SMK graduates are able to demonstrate their work and innovation so that it is contested by the best industry players and universities as well as being able to entrepreneurship. This study uses a qualitative approach with descriptive analysis method. Data collection techniques were carried out using interviews, documentation studies and field observations with research instruments carried out based on management research guidelines for increasing strategic innovation competency at SMKN 4 Garut and SMKN 9 Garut. The results of the study show that planning for increasing strategic innovation for students at SMKN 4 Garut and SMKN 9 Garut is integrated into the Teaching Factory learning model. There are differences in the organization and implementation of the two

schools in line with the status of the SMK Center of Excellence for the two schools. SMKN 4 Garut, which has a BLUD, innovation products for SMK students have received commercial licenses both inside and outside the school with industrial cooperation assistance. Meanwhile, in SMKN 9, students' innovative products are still being developed within the school. The results of the evaluation need to create a student strategic innovation model in an effort to improve competency and practice.

Keywords

Management, Competence, Strategic Innovation, Teaching Factory, Center of Exellence Vocational School

1. Introduction

Vocational Education can be interpreted as a special education that functions to prepare students to enter certain jobs, or family work or to improve the ability of the workforce. According to the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, Vocational Education: is secondary education that prepares students especially to work in certain fields. However, based on the existing facts, SMK graduates can not only work in certain fields, but can also go on to higher education and entrepreneurship. Therefore SMK graduates can be BMW, namely working in the world of work and the industrial world, continuing on to tertiary institutions, especially for vocational education, or professional education, or becoming vocational teachers and entrepreneurs.

Center of Excellence Vocational School (SMK PK) is a SMK development program with certain competency skills in quality and performance improvement, which is strengthened through partnerships and alignment with the business world, the industrial world, the world of work, which eventually becomes a reference SMK that can function as a driving school and center improving the quality and performance of other SMKs. In general, the PK PK program aims to produce graduates who are absorbed in the world of work or become entrepreneurs through in-depth and comprehensive alignment of vocational education with the world of work and are expected to become centers of quality improvement and referrals for other SMK.

Management is increasingly seen as a diction of organizational functions that play a major role in performance. In the context of education management, the government seeks to improve the quality of education as mandated in RI Law Number: 20 of 2003 concerning the National Education System of 2003 Article 1 paragraph 1. To achieve the mandate of the law, the Minister of Education and Culture, Research and Technology stipulates Decree of the Minister of Education and Culture Number 17/M/2O21 concerning the Center for Excellence Vocational High School Program.

Vocational High Schools are increasingly faced with changing times that are increasingly developing and advancing. Therefore, the Center for Excellence Vocational High School program seeks to answer future challenges, namely through a program that has been running since 2020. In 2022 it will present a new scheme, namely the

Matching Scheme. Support that involves the business world of industry (DUDI) more intensively. The focus of the SMK-PK Program is to build SMKs with optimal quality and performance so that they are able to produce graduates who can be absorbed and highly appreciated by the world of work so that they can become beacons for the development process in other SMKs. In practice, there are at least four main competencies that are expected to reach students, namely: way of thinking; way of working; tools of working and living in the world (Griffin, McGaw, 2012),

The condition of Vocational High School Education is currently receiving special attention from the government, especially regarding a number of issues that could hinder the government's efforts to increase the number of highly competent and characterized Vocational High School graduates to prepare a workforce that is ready to compete in the era of the ASEAN Economic Community (AEC) in particular and the global era in general.

In addition, behind the existing service quality, there is still concrete evidence at the Center of Excellence Vocational High School in Garut Regency, which must be considered as a form of further challenge, which includes:

a. Absorption of graduates by the World of Business and Industry (DUDI) has an average effectiveness of 57.8%, this shows that the absorption of graduates by DUDI is categorized as low

b. Berdasarkan hasil kajian survey kepuasan pengguna, diperoleh data rata-rata efektivitasnya 68,12%, hal ini menunjukkan bahwa kesesuaian mutu lulusan dengan standar kebutuhan DUDI masih lemah;

c. Based on the results of a survey of graduates' traces, information was obtained: (1) the average number of graduates with an effectiveness of 12.88% was capable of entrepreneurship according to their expertise; (2) the average number of graduates with an effectiveness of 52.43% work as ordinary employees in the world of business and industry; (3) for 2 years there are still 38.99% of graduates who are still confused about getting a job. These three findings show that: (1) the entrepreneurial quality of graduates is still weak; (2) almost all graduates are worker/employee oriented; and (3) indicates that the quality of graduates is not ready to work or not ready to be employed in the business world;

The three data above show the conclusion that even though the Central Vocational High School already has service standards that are categorized as very good, judging from the productivity of its graduates there are still challenges that must be considered immediately. As a result of further analysis carried out by researchers, as well as the results of the Focus Group Discussion (FGD) held by researchers in collaboration with the Headmaster's Working Conference (MKKS) of Garut Regency Vocational High Schools, a follow-up analysis was obtained that had to be carried out, including:

a. All SMKs, especially SMK Centers of Excellence in Garut Regency, must be able to maintain service quality above 87.75% in each of the 8 elements of the National Education Standards;

b. All Centers of Excellence Vocational Schools are urged to carry out innovative work on aspects of school governance or management towards the quality of graduates who are innovative, creative and productive;

c. All Center of Excellence Vocational High Schools must develop quality standards for Vocational High School graduates towards the condition of graduates who have strategic innovation competencies so that the quality of Center of Excellence Vocational High School graduates has:

1) Basic knowledge ability in accordance with expertise;
2) Productive development capabilities from the results of practical and productive work experience during learning;
3) Creative and innovative abilities and skills as a form of development of learning experience towards a strategic form of selling value that can be utilized by DUDI or used as a form of graduate self-employment

To achieve the competence of students who have strategic innovation competencies, management and learning are needed that can train and equip students to have hard skills and soft skills.

2. Literature review

Strategic innovation refers to the process undertaken by firms that totally change the nature of competition within an industry and gain their advantage by employing a different strategy from their rivals. Many firms have used this technique and among the most prominent innovations in the cosmetics industry have been Avon's door-to-door sales, Procter & Gamble's (P&G's) personal production, Vichy's drugstore sales and Body Shop's cosmetics retailing (Markides, 1998).

The success of the strategic innovation competency improvement program for students at the Center for Excellence Vocational High School is highly dependent on how good and effective its management function is. The definition of management according to Terry (1968: 56) is "a distinct process consisting of planning, organizing, actuating, and controlling, performed to determine and accomplish the objectives." This definition contains four basic functions of management, namely planning, organizing, actuating, and controlling, which is then abbreviated as POAC. The urgency of the four basic management functions was revealed by Terry (1968:52) by saying planning as to determine the objectives and the courses of action to be followed, organizing to distribute the work among the group and to establish and recognize needed authority, actuating the members of the group to carry out their prescribed tasks enthusiastically, and controlling the activities to conform with the plans.

One important aspect that needs to be considered in an effort to improve graduate competence is learning. Mulyasa (2017: 15) states that: "Implementation of learning aims to prepare a quality future for the nation. Therefore, in essence learning revolution and innovation must be oriented towards efforts to prepare

graduates as excellent and productive human resources who are very much needed in the global era. Learning revolution and innovation must also produce quality learning models."

The relationship between learning and increasing strategic innovation in this study uses the Teaching Factory learning model. Teaching factory is production-based learning. The application of teaching factories in SMKs is a manifestation of one of the efforts of the Directorate of Vocational Development to further strengthen cooperation or synergy between SMKs and industry

3. Methodology

The approach used in this research is the Mode of inquiry qualitative interactive approach, which is an in-depth study using direct data collection techniques and people in a scientific environment (Sukmadinata. 2008:61). With a qualitative approach researchers can gain a complete, in-depth and thorough understanding of the research focus. In addition, researchers want to understand (how to understand) in depth the implementation of the object under study.

Researchers as key instruments (key instruments) record and record information and collect the results of interviews, observations and results of searching documents at the research location. The research subjects that will be the source of the data are the Head of School, Deputy Head of School for Curriculum. Deputy Head of School for Infrastructure, Deputy Head of School for Industrial Relations, Head of Teacher and Industry Expertise Competency.

The steps for collecting data are as follows:

a. Researchers conducted an analysis before going to the field.
b. Collect data and information as complete as possible from informants to get an overview of the research focus.
c. Researchers sort the data obtained so as to find the data and information needed for the purposes of the presentation as formulated in the research objectives.
d. Researchers present and explain the findings in accordance with the formulation of predetermined objectives

The method used in this study is a descriptive analysis method, namely a research method that emphasizes efforts to obtain information about status or symptoms when research provides an overview of phenomena as well as further explains relationships and draws meaning from a desired problem.

Data collection techniques were carried out using interviews, documentation studies and field observations with research instruments carried out based on management research guidelines for increasing strategic innovation competencies at the Center for Excellence Vocational High School. The research locations were conducted at 2 (two) State Vocational High Schools in West Java Province, namely Garut 4 Vocational High School and Garut 9 Vocational High School. The choice of this location was based on the consideration that

(a) this school has been developing a Center for Excellence Vocational High School and BLUD
(b) this school is still one of the choices of the local community in West Java province which has a lot of devotees
(c) This school is a school that is accredited A, excels and achieves. As for the subjects of the study were the Head of School, Deputy Head of School, Head of Skills Competency, Head of BLUD, Teachers, industry and students,

4. Research findings

Planning for Increasing Student Strategic Innovation Competency through the Teaching Factory Learning Model

Curriculum Field Planning

Increasing students' innovation competence in this study is integrated with the teaching factory learning model. The teaching factory concept aims to transfer the actual production environment into the classroom. Students do not only practice soft skills in learning, learn to work in teams, practice interpersonal communication skills, but it is important to gain hands-on experience and industrial practice to enter the world of work. Teaching factory implementation teaches students how to find problems, build prototypes, learn to make business proposals and learn to present their solutions. In the teaching factory implementation process, students learn important skills to master such as how to meet the time level and expectations that may arise, build and work in teams and work with various people who have various abilities and talents.

Production planning for each product is carried out in schools and in industry. So that at this stage identification of industries that can be carried out in collaboration with Teaching Factory learning is carried out. The Head of Competency Competence conducts identification and assessment to carry out collaboration with industry related to the implementation of teaching factories

The implementation of increasing students' strategic innovation competencies involves many components including the preparation of curriculum, infrastructure, human resources, partnerships and financing that must be carefully prepared. Therefore, the planning that has been carried out by schools on a regular basis every year is a step so that the implementation of increasing the competence of strategic innovation students in the teaching factory model can run well. The planning for the implementation of the teaching factory is contained in the school activity plan (RKS) and the Medium-Term Work Plan (RKJM) so that the development plan is clear and the achievement is directed. Teaching factory development activities become the core business in schools to deliver superior and independent SMKs.

According to Sanjaya on Hilayati, (2012:23) suggests that 'planning comes from the word plan, namely making decisions about what must be done to achieve goals'. According to another source Safrudin on Hilayati, (2013:3) states that:

'Planning is one of the initial functions of management activities in achieving goals effectively and efficiently. Planning is also known as foresight and creates a framework for directing one's future actions'. Thus, the planning process must start from setting goals to be achieved through needs analysis and complete documents, then determining the steps that must be taken to achieve these goals. When we plan, our mindset is directed to how that goal can be achieved effectively and efficiently

Infrastructure Facilities Planning

Planning in the field of infrastructure is basically a process to fulfill learning needs both in theory and practice as well as in efforts to improve the quality of learning. Based on Permendikbud No 34 of 2018 concerning National Standards in Appendix VI, namely the Standards for Infrastructure related to Practice Spaces, namely as follows:

1) Agribusiness Competency Practice Room for Processing Agricultural Products serves as a place for implementing learning activities such as introduction to microorganism control, introduction to material control and handling, processing and production of agricultural commodities, packaging, and sensory testing.

2) 2) The minimum area of the Agribusiness Skills Competency practice room for Processing Agricultural Products is 150m² (one hundred and fifty square meters), including a microbiology laboratory room, sensory laboratory room, agricultural product processing room, production kitchen, sub-instructor room and storage room, and hallway.

From the point of view of providing practice space owned by schools in APHP expertise competence, there are those that function separately as a place for carrying out learning activities such as the introduction of microorganism control and sensory testing as is the case at SMKN 4 Garut because they have the competence in Quality Control expertise, but there are also those that are combined with the introduction of material control , and handling, processing and production of agricultural commodities, packaging, and sensory testing but classified as Animal Products Processing laboratories (for making yogurt), Processing of Vegetable Products (Bread, Tip Top Snacks), Processing of Plantation Products (Jams, Chips, Herbsway, Lemon Juice). Planning activities in the field of infrastructure are carried out in May each academic year when the Strategic Plan is prepared and the annual RKAS (School Activity Plan and Budget) is prepared. The preparation of the Strategic Plan and RKAS is led by the Principal and the Quality Management Division involving all management staff and the School Committee.

HR Development Planning

Human resource development planning is an important investment in supporting the successful implementation of learning. To produce competent students, the teacher must also be competent. Teachers must have a technical or vocational competency certificate, and take a vocational competency test

conducted by LSP to obtain competency certification from the BNSP (National Education Standards Agency) in addition to teacher professional certification. The teacher acts as a learning leader. Leading is the work done by the teacher to motivate and guide students so that they will be ready to achieve the agreed learning goals. The teacher is a motivator to influence students in carrying out learning activities. To provide influence and guidance in the context of teaching, the teacher as a leader makes two main efforts, namely strengthening student motivation and selecting appropriate learning strategies.

Referring to Law Number 14 of 2005 concerning Teachers and Lecturers in article 1 paragraph 1 states that teachers are professional educators with the main task of educating, teaching, guiding, directing, training, assessing and evaluating students in early childhood education through formal education. primary education and secondary education. Furthermore, what is meant by professionalism is a job or activity carried out by a person and becomes a source of income for life that requires expertise, skills or skills that meet certain quality standards or norms and requires professional education.

From the research findings at the two locations, it was found that the percentage of vocational teachers who already have competency certificates is 80%. 20% of teachers who do not have competency certificates are honorary teachers owned by schools who have only joined for about 2-3 years. Where from 20% of teachers who do not have competency certification, there are some teachers who have carried out vocational training organized by P4TK Vedca. With teacher assets that already have competency certificates, the APHP Skills Competency Test activities at LSP P-1 at both research locations have been very well implemented. However, to get teachers who are competent in their fields, it is necessary to carry out competency training programs in accordance with the subjects they teach.

Financing Planning

Financing planning is an activity of making budget planning for each activity of managing an education unit. Vocational schools must have sufficient funds to carry out teaching and learning processes that are oriented towards the implementation and development of teaching factories. According to Permendikbud no 34 of 2018 concerning National Education Standards in Appendix VII concerning Standard Fees it states that education costs include personal costs, investment costs, and operating costs. Personal costs are educational costs that must be incurred by students to be able to follow the learning process regularly and continuously. Investment costs for SMK/MAK are costs incurred by education providers for the procurement of facilities and infrastructure. development of educators and education personnel, and permanent working capital. While Education Costs in this standard only includes non-personnel Operational Costs

From the allotment of the use of BOS funds, the development of teaching factories in the two schools used BOS funds from the central government, namely

from the allocation for the implementation of activities to increase competency skills and maintenance of school infrastructure, namely in financing the purchase of materials and equipment that are not investment equipment. Therefore, the government's cooperation, in this case the Ministry of Education and Culture, which collaborated with the German government in the form of vocational equipment assistance for SMKs in Indonesia, has been very helpful in implementing teaching factories since the assistance began in 2013 until now.

Organizing Student Strategic Innovation Competency Improvements through the Teaching Factory Learning Model

The organizational structure is a personal arrangement that occupies a particular work unit to support the achievement of the school's vision and mission. The principal acts as the person in charge (leader) in learning to increase students' strategic innovation competencies through the teaching factory learning model. The school principal and all SMK management have a mindset and understand properly and correctly about the concept, design and implementation. SMK policies are integrated into the Master Plan for school development, school documents and learning implementation documents.

The management of student strategic innovation competence improvement activities is managed in earnest so that it can run effectively and efficiently. The number of personal managers is determined according to the needs of the teaching factory learning unit development. In order for the assigned personnel to understand and carry out the work according to their position, an organizational structure and separate job descriptions are needed that are integrated with the school organizational structure, as stated in the Guidelines for developing Student Strategic Innovation Competency Improvements through the teaching factory learning model

Implementation of Increasing Student Strategic Innovation Competency through the Teaching Factory Learning Model

The Teaching Factory implementation activity is the next activity after carrying out a series of planning both curriculum, infrastructure, human resources and financing. The Deputy Principal of the school prepares the needs for the continuation of the Teaching Factory implementation. The school principal conducts outreach to all school members including teachers, administration, students, parents and related agencies to support the successful implementation of Teaching Factory. The Principal sets the start of the implementation of Teaching Factory after all components are met at the start of the new school year.

At the production stage, to be able to produce superior school products from teaching factory activities, a long process is required. The process includes a small-scale trial process, product quality testing process, product improvement process, re-trial process. Even after becoming a suitable product, the steps that must be

taken are a test to determine the expiration date of the product, obtaining a product permit as a PIRT, obtaining a product permit from BPOM to obtain a certificate. Next is the submission as halal food to the MUI. This long process has been taken so that the products marketed are in accordance with industry standards and halal food or beverage standards

The implementation of the teaching factory is carried out through collaboration in the implementation of learning content for groups A and B and group C (vocational content). This activity is carried out with a block system. According to Permendikbud No. 34 of 2018 concerning National Education Standards in Appendix III concerning Process Standards it states that block system learning is an arrangement of learning implementation that allows a complete and meaningful combination of several competencies to achieve learning objectives that are held in certain time blocks according to competency characteristics. . It was further explained that block system learning can be carried out at SMK/MAK, industry, or alternately at industry and SMK/MAK according to the time, resources, equipment, and materials that have been set. This was carried out by the two schools in accordance with an agreement between the industry and the school, both the number of students sent and the duration of study in the industry ranged from 2 weeks to 1 month.

The implementation of the teaching factory with a pattern of collaboration with industry so far has had other impacts such as, experience of students working in a real work climate, production costs for both materials and equipment are fully facilitated by industry, good relations with industry and public trust in graduates. So that the implementation of the work is in accordance with predetermined quality standards, control is carried out from the design stage, implementation to the final result. The implementation of controls is carried out by the teacher/instructor, it is better if accompanied by experts from the industry, therefore, work experience/industry internships for teachers/instructors is important

Evaluation of Student Strategic Innovation Competency Improvement through the Teaching Factory Learning Model

Evaluation system

Implementation evaluation activities are carried out as a whole by reading the program implementation data or targets that have been set to determine efforts to improve or increase work in the coming year. Evaluation activities for the implementation of Student Strategic Innovation Competency Improvement through the Teaching Factory Learning Model in both schools are carried out at the end of the year after collecting data on product sales as a whole from all competency skills

Evaluation of the implementation of the teaching factory in the two SMKs has been carried out according to a good mechanism. Provide periodic reports every 3 (three) months to the Principal as the person in charge regarding the implementation of the teaching factory as stated in the job description of the

teaching factory manager and 3 (three) months to the head of the teaching factory UPT (Technical Implementation Unit) from the teaching factory competency unit expertise and the head of the UPT teaching factory to the school principal every 6 (six) months. Based on observations and interviews conducted by principals, they have a very good commitment and responsibility in maintaining the continuity of teaching factory activities, and the mechanism for reporting teaching factory activities from bottom to top has been carried out periodically properly. Reporting results are analyzed by the Principal. The evaluation system and follow-up evaluation were then carried out by the school principal the following year for teaching factory development. Therefore, from the results of the research that has been collected, it can be concluded that the teaching factory implementation evaluation activities have been effectively carried out at the two research locations and have even become teaching industries.

Learning Assessment System

Evaluation of learning is one of the components to measure the degree of success in achieving learning objectives and the effectiveness and efficiency of the learning process carried out. Thus evaluation means determining the value of a program and determining the success of a program's learning objectives.

Based on the description of the findings of the research results that through the implementation of the teaching factory allows complete competency achievement, adequate industry standard infrastructure, teachers who have competency certificates and internship experience in the industry, the process of physical and mental development of students, as well as assistance from industry during the learning process are supporting factors. in improving competency achievement. Based on the data and interviews conducted, it was obtained data from the results of learning evaluation carried out through the Skills Competency Test managed by LSP P-1 (Professional Certification Institute). APHP skill competency students in both schools were 100% declared competent as shown in Appendix 21. This shows that the results evaluation of teaching factory learning has been effective in increasing competency achievement at both research locations.

Partnerships in the Implementation of Increasing Student Strategic Innovation Competency through the Teaching Factory Learning Model

The implementation of teaching factory has unique characteristics. These characteristics include learning to produce products, sustainable production and products of economic value. From these characteristics, the resulting product must be of high quality, needed by the community at an affordable price. In order to produce quality products and be marketable, SMK products must be able to compete in the market. If it's food then the product's taste, texture, appearance and packaging must be of high quality. Therefore the teacher who guides and directs must have knowledge, work skills, who are competent.

The pattern of cooperation between industries in implementing teaching factories is that students practice in companies/industry for a time agreed by industry and school. For the implementation of teaching factories in schools, the industry supplies raw materials and sends them to schools to make certain products. In the middle of production, the industry came to the school to supervise the production process.

Problems and Solutions in the Implementation of Increasing Student Strategic Innovation Competency through the Teaching Factory Learning Model

Teacher Resources

The problem with the number of teachers that is still not adequately addressed by recruiting honorary teachers. Honorary teachers who join are given a competency improvement program through training activities held at P4TK VEDCA Cianjur. The implementation of competency certification is still being carried out in stages because there are still 20% of teachers in the two schools who have not received competency certificates from BNSP. However, with the application of cross-assessment where teachers who provide practical guidance are not allowed to carry out assessments in the field of production they are guiding, it is a good step in terms of efforts to improve teacher abilities and encourage teachers to have competence both knowledge and skills in production fields that are not supervised. Placement of teachers as mentors in industrial activities in partnership with schools and internship supervisors is an effort made to improve teacher competence.

The explanation above shows that problems related to teacher resources can be overcome, but it is necessary to monitor effectively.

Learning Facilities

Learning facilities in teaching factory activities do not experience problems, because they have been handled directly. The condition of practical infrastructure has exceeded the Minister of Education and Culture standard No 34 of 2018 Appendix III concerning Infrastructure Standards and is in accordance with.

The development of infrastructure refers to the minimum standards of Permendikbud No 34 of 2018 concerning National Education standards. From the aspect of the standard space that must be owned by the school has been fulfilled according to the standard. The laboratory area has met the standards, but for equipment such as bread production, specifications need to be improved, especially in the work process for mixing, defining and improving.

Students and Parents of Students

Parents of students must understand the physical and psychological condition of the child because students adapt to two environments that are different

from the family, namely the school environment and the industrial environment or the school environment which is conditioned like the work environment in industry. Students carry out production in accordance with production targets, students carry out product marketing which is part of the after-production assessment, students carry out production according to the time target agreed by the industry, students carry out product presentations and packaging designs and carry out product development at a higher grade level. Therefore it takes a family environment and school environment that can provide a pleasant atmosphere, so that students do not feel pressured.

Scheduling using the block system is no less important than being conveyed to parents by the school, so that parents understand and prepare their sons and daughters to have good health and work together in providing support and motivation to study. From the findings during the implementation of the teaching factory at the two research locations, no major problems were found, which harmed various parties. This is because the school has made effective efforts to develop student character. Some of the problems faced are the availability of apprenticeship places for teachers, laboratory facilities that are still conventional and funding for school operations.

Partnership

Vocational High School Partnerships in implementing the Teaching Factory concept should have a permanent partnership with industry. SMK in the implementation of teaching factory to synergize with industry for all stages of learning both at the planning, implementation, assessment, certification and evaluation stages of learning outcomes.

From the findings during the implementation of the teaching factory at the two research locations, no major problems were found which were detrimental to both parties. The relationship that has been established continues to run harmoniously by carrying out each other's rights and obligations according to the agreement. An increase in the number of partnerships is urgently needed for other productions such as bread, purple sweet potato bakpia, nata de coco, tip top snacks, various chips, salted eggs, pineapple jam.

Results of the Implementation of Strategic Innovation Competency Improvement of Students through the Teaching Factory Learning Model

Improving the quality of education refers to the Four Pillars of Education from UNESCO, namely Learning to know, learning to do, learning to be and learning live together in line with the application of production-based learning (teaching factory). Learning to know is the principle that learning is to know or understand. Learning to do emphasizes the importance of interacting with the environment to solve problems so as to form the required hard skills and soft skills.

The results of the implementation of the teaching factory from the solid hard skill competency aspects of the two schools, namely SMKN 4 Garut and SMKN 9 Garut, were obtained as follows:

Have good vocational skills.

Students acquire competence in the hard skill aspect through the Expertise Competency Test (UKK) by LSP P-1 declared 100% competent so that they get a competency certificate and the results of the Vocational School Examination (USK) obtain an exam score with an average USK of 86.14 at SMKN 4 Garut and 83.5 at SMKN 9 Garut with a good category at both schools. above the value of 83.5.

Focus on work

Students carry out practical activities with task orientation to produce products with predetermined criteria both by industry and by subject teachers. Failure during production is the responsibility of the student so that the student must repeat reuniting with other groups on the next schedule.

Realizing the contents of the curriculum factually

Practical learning with the teaching factory model provides real experience to students about KD achievements in the curriculum and the application of KD in a production process.

5. Conclusion

Strategic Innovation Competency Improvement Management of Students at Center of Excellence Vocational School, SMKN 4 and SMKN 9 Garut Regency integrates with the teaching factory learning model, where in this learning model students' strategic innovation competencies are within the scope of industrial projects that aim to provide real experience in design, manufacturing, and product realization. Curriculum development balances knowledge, theory and analysis with manufacturing, design, business activities, and professional skills to produce graduates who are professionals in their fields.

There are differences in the management of students' strategic innovation competency improvement at the two Centers of Excellence Vocational Schools. Garut 4 Vocational School, which incidentally is already a BLUD, student innovation products can be sold both within the school environment and outside the school. Meanwhile, in SMKN 9 innovative products made by students are still used for internal school needs. However, overall the two schools have implemented management to increase students' innovation competence, although not yet fully effective. This is because it is constrained by the limitations that the school has. These obstacles include the limited number of partnerships with the World of Business, Industry and World of Work (DUDIKA), some equipment that still needs

to be upgraded in specifications, some teachers who still need to take part in internships in industry and limited operational costs.

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