

## The Entrepreneurship Education Improvement Efforts Through Teaching Factory Students of Vocational High School Negeri 2 Kendal

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### Abstract

To improve competitiveness of globalization is required to improve the quality of middle-educated human resources. Students of Vocational High School are equipped with entrepreneurship education to increase their knowledge and entrepreneurship skills through teaching factory. This study aims to (1) analyze the characteristics of teaching factory in Vocational High School, (2) to analyze teaching factory that has been run in Vocational High School Negeri 2 Kendal and entrepreneurship value who obtained by students, (3) formulate ideal teaching factory to improve entrepreneurship education of Vocational High School students in Kendal. This research uses qualitative method in the implementation of teaching factory program at Vocational High School Negeri 2 Kendal. The validity data done by triangulation with the source. The results showed that teaching factory in Vocational High School Negeri 2 Kendal, started from planning by teachers, production process until marketing of their products. The implementation of teaching factory can improve entrepreneurship education students of Vocational High School Negeri 2 Kendal. In the planning of students learning to oriented tasks and results. In the production process students learn to be responsible, disciplined, confident, dare to take risks, independence, cooperation. In facilitation students learn open to technology. In marketing students learn to be honest, passionate, hard work, confident, able to overcome difficulties / problems, able to see opportunities and like challenges. In the evaluation students learning to open receive input, criticism and advice from outside. The implementation of teaching factory at Vocational High School Negeri 2 Kendal, there is cooperation with government, parents, business world and industry, alumni, society and other education units. The financing of teaching factory activities comes from government grants. Additional capital got from the profit of sales products, which are divided by a certain percentage. Teaching factory ideal supported by the partnership, mentoring and financing. Partnership with government, parents, community, business and industrial company, alumni and other education units. Mentoring from teachers and business and industrial company, financing by government, parent and private sector

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## INTRODUCTION

Indonesian challenges in globalization is competitiveness of Human Resources. It is necessary to improve the quality of human resources through education. In the Regulation of the Minister of Education and Culture Republic Indonesia, Number 70/2013 about Basic Framework and Structure of Vocational High School / Madrasah Aliyah Vocational Curriculum (2013) stated that the external challenges of education in Indonesia are related to the flow of globalization and various issues related to the environment, technological and information progress, the rise of creative and cultural industries, and the development of education at the international level problem. External challenges are also linked to shifts in economic power world, the influence and impact of technosciences and the quality, investment, and transformation of education. Therefore, the big challenge is how to strive for the abundant productive human resources can be transformed into human resources that have competence and skills through education.

Ones effort to improve the quality of human resources in global competition is create reliable and professional-educated workers through Vocational High School. Wagiran (2008) in his research explains that vocational education as an educational institution that aims to prepare graduates to be a worker has a strategic role in preparing human resources, especially middle-level workers.

In Constitution number 20 of 2003 about National Education System Chapter VI Article 15 states that Vocational High School as one form of high school education who have the mission of preparing students primarily to work in a particular field. Prosser in Kuswantoro (2014), explains that: Vocational High School as an educational institution whose aims to prepare students to be a worker and develop professional attitude, prepare students to be able to choose career, compete and able to develop themselves, ready to fill the the business and industrial companie today and in the future, and prepare the graduates become productive,

adaptive, creative citizens, then this institution actually has a very relevant responsibility to establish of entrepreneurship spirit for its graduates. Budiyo (2010) in his research mentioned that the implementation of education and learning in Vocational High School refers to the three pillars of competence development : normative; adaptive; and productive.

Entrepreneurship according to Kuswantoro, A (2014) is the values that shape the character and behavior of someone who is always creative empower, create, work and understated and strive in order to increase revenue in business activities. The character and entrepreneurial behavior is expected to be formed through entrepreneurship education. In European Commission Enterprise and Industry (2009) explained that entrepreneurship refers to an individual's ability to turn ideas into action. It covers creativity, innovation and risk taking, and the ability to plan and manage projects in order to achieve objectives. This supports everyone in day-to-day life at home and in society, makes employees more aware of the context of their work and better able to seize opportunities, and provides a foundation for entrepreneurs setting up social or commercial activities.

Entrepreneurship education is a process of learning and instill entrepreneurship values through the habituation, maintenance of behavior and attitude. In this project, it was therefore agreed that existing activities and programmes qualify as education for entrepreneurship if they include at least two of the following elements: a) developing those personal attributes and generally applicable (horizontal) skills that form the basis of an entrepreneurial mindset and behaviour; b) raising students' awareness of self-employment and entrepreneurship as possible career options; c) work on practical enterprise projects and activities, for instance students running minicompanies; d) providing specific business skills and knowledge of how to start and successfully run a company.

To support the cultivation of entrepreneurial values and the formation of entrepreneurship attitudes, the students introduced with Production Unit that managed by each skill program, developed into teaching factory. Teaching factory according to Ampera (2014) is one of the innovations in efforts to empower Vocational High School to be more qualified. This principle puts Vocational High School apart from being a graduate producer who is a candidate of a reliable and competent workforce also acts as a producer of products and services worth selling. With this principle, Vocational High School can develop a business unit both producers of products and services that can meet the needs of the community.

Actually the concept of teaching factory is one form of development from vocational school into a model of production school. According to Greinert and Weimann in Sudiyanto et. al (2011), there are three basic models of production schools, namely: Simple production schools (Der einwickelte produktionsschulyp Training Cum production); A growing production school (Der einwickelte produktionsschulyp) and Production schools are growing in factory form as a place of learning (Der einwickelte produktionsschulyp inform der Lernfabrik Prroduktion Training Corporation). The third model, the Production School that develops in the factory form as a place of learning (Der einwickelte produktionsschulyp inform der Lernfabrik Prroduktion Training Corporation) who known as Teaching factory Model.

Implementation the teaching factory of Vocational High School in Indonesia according Moerwishmadhi (2009) is by establishing a business unit or company within the school. The business unit or factory produces to produce goods and services with standard quality that can be accepted by the public or consumers. With production activities that can produce goods or services that have value to sell, Vocational High School can broadly develop their potential to explore the sources of financing and being source of learning. Thus it can be concluded that teaching factory is a

learning activity where students directly perform production activities either in the form of goods or services within the school education environment. Goods or services produced have the good quality so that it is worth selling and accepted by the public or consumers. The benefits obtained are expected to increase the source of school income that is useful for the sustainability of educational activities.

Teaching factory as ones of learning strategy has several goals. In a paper published by the American Society for Engineering Education Annual Conference and Exposition, Alptekin, et al (2001) states that the objectives of teaching factory are: to produce professional graduates in their fields, to develop curricula that focus on modern concepts, demonstrate appropriate solutions for Challenges facing the industrial world, as well as technology transfer from industries that are partners with students and educational institutions. Jorgensen's research, et al. (1995) mentions that the development of teaching factory at Penn State University, The University of Puerto Rico-Mayagues, The University of Washington and Sandia Natinal Labs aims to provide real experience in the design, manufacture and realization of products designed and developed A curriculum that has a balance of theoretical knowledge and analysis with manufacturing, designing, business activities, and professional skills.

Teaching factory presents the real industry / workplace in the school environment to prepare graduates who are ready to work. Hadlock, Wells, Hall, Clifford, Winowich, and Burns in Fajaryati (2012) reveals that teaching factory has the goal of being aware that teaching students should be more than just what is contained in the book. Students not only practice soft skills in learning, learn to work in teams, practice interpersonal communication skills, but also gain hands-on experience and work training to entrance the working world later.

Sudiyanto (2011) in his research stated that, teaching factory is learning by doing production activities either in the form of goods

or services within the school education environment by students. Goods or services produced by students have the good quality so it is worth selling and accepted by the public or consumers. The benefits obtained are expected to increase the source of school income that is useful for the sustainability of educational activities.

SMK Negeri 2 Kendal was chosen as a research place because the teaching factories there has been running well, especially at Furniture Engineering skill program. The area of Kendal is surrounded by forest areas and government-owned forests. There are several Timber Stockpiling or Timber Shelter, many large and small scale processed wood industry, so the raw materials used in the production process are easy to get; Furniture Engineering SMK Negeri 2 Kendal, has its own production laboratory with the complete tool carpentry and resembles the factory, so precisely used as a place of research activities teaching factory; it also able to school furniture need band has a catalog of products that can be ordered by consumers directly; and it weave strong partnership network with related institutions, Business and Industrial Companies and alumni. The aims of this research are: analyze the characteristics of teaching factory that has been running in Vocational High School; analyze teaching factory that has been running in SMK Negeri 2 Kendal and entrepreneurship values obtained by students in teaching factory activities; and analyze the ideal teaching factory needed to improve entrepreneurship education students of Vocational High School in Kendal.

## **METHODS**

The implementation of teaching factory in Vocational High School is a dynamic problem, so, researchers use qualitative research methods. It will illustrate how the teaching factory that runs in SMK Negeri 2 Kendal and what entrepreneurial values can be absorbed or obtained by students from these activities. In addition, using qualitative descriptive approach is expected to reveal the situation and problems

encountered in teaching factory activities. Qualitative method used to examine carefully about the characteristics of the teaching factory that has been running in SMK Negeri 2 Kendal and develop the existing teaching factory model to optimally this program. Research design is divided into four stages: planning, implementation, data analysis and evaluation. The focus of this research is to analyze the teaching factory that has been running and the entrepreneurship values obtained by the students from the teaching factory activity on the Engineering Skill Program of SMK Negeri 2 Kendal because the teaching factory method of planning, production process, marketing and developing partnership network with Business and Industrial Company, related agencies and alumni. In addition, the teaching factory on the Engineering Program of SMK Negeri 2 Kendal has owned equipment (production machines) and woodworking equipment, as same as in the factory. As a result of the teaching teaching method, schools have a source of self-financing, so it does not depend on government assistance. Furniture Engineering skills program provide the needs of school furniture and serve orders from schools / other agencies. The researcher observed the implementation of teaching factory at SMK Negeri 2 Kendal, interviewed with headmaster, head of skill program, teachers, students and Business and Industrial Company and conducted documentary study of teaching factory activities. Triangulation with the source done to know the validity of data.

## **RESULTS AND DISCUSSION**

### **Description Teaching Factory in Vocational High School**

The results of research on the characteristics of teaching factory that has been running in Vocational High School, based on the results of previous interviews and research note that teaching factory is a learning activity where students directly perform production activities either in the form of goods or services within the school education environment. Teaching factory can also be said as a

combination of competency-based learning approach and production-based learning. It means that a skill process designed and implemented based on actual work procedures and standards to produce products that match the market / consumer demands. Students are directly introduced in production activities to delivery of order / marketing. Goods or services produced have the good quality so that it is worth selling and accepted by the public or consumers. The benefits obtained are expected to increase school income that is useful for the sustainability of educational activities.

### **Implementation of Teaching Factory at SMK Negeri 2 Kendal**

Based on the results of research on teaching factory that has been running in SMK Negeri 2 Kendal, it can be explained that the activity begins with theory on the classroom, followed by product manufacturing. The production process begins with planning. Teachers arrange production planning by making the design / drawing work, as a reference for students in making a product. Students work according to the drawings / designs made by the teacher. There are also receive orders from outside in accordance with the school's catalog. Consumers can bring their own designs from home. If the school is unable to serve the order due to limited labor, the school cooperates with the alumni.

Procurement of raw materials for the production process is fully handled by school. Head of department applying for ordering of raw materials used in teaching factory, to procurement department. Students only make a product without thinking about the raw material.

Evaluation done after production process have been finished. The production through quality control process to maintain the good quality. There is an internal audit of ISO once of semester so that the overall product quality can be accounted for.

Furniture Engineering Program SMK Negeri 2 Kendal get guidance and assistance from PT. Prophan I.C.C in terms of finishing

the product. PT who provides directly training to teachers and students about good painting techniques, so that the products have high quality.

Product marketing by expo or exhibition activity and website and other online media. It also directly offered to the parents. The income used to repay the capital loan, the profit used for capital added to department and the Central Production Unit, based on a certain percentage.

Students make products based on planning who prepared by the teacher. Thus, students work on products with task-oriented and results. The production process done by students Through the production process will be embedded character of responsibility, discipline, carried out confident and dare to take risks. Students learn independently when making products individually, and learn to work together when making products in groups. Marketing done by door to door, exhibition, website and promotion to the office, or directly offered to parents or the environment. From marketing activities students learn to be honest, passionate, hard work, confident, able to overcome difficulties / problems, able to see opportunities and like challenges. From outside mentoring activities students learn openly to technology and from evaluation activities students learn to receive input, criticism and outside suggestions.

The implementation of teaching factory at SMK Negeri 2 Kendal, there are cooperation with government, parents, business world and industry, alumni, society and other education units. The implementation of teaching factory can improve entrepreneurship education of SMK Negeri 2 Kendal students. Schools get additional capital from the income of production sales, which are divided by a certain percentage.

Students learning-oriented task and results from planing. Students learn to be responsible, disciplined, confident, dare to take risks, independently and cooperate from production process. Students learn to be honest, passionate, hard work, confident, able to overcome difficulties / problems, able to see

opportunities and like challenges from marketing activity. Students learn to be open to technology from outside mentoring activities, and from evaluation activities students learning to receive input, criticism and outside advice.

### **Ideal Teaching Factory Models to Improve Entrepreneurship Education Vocational High School Students.**

The results show that teaching factory can run well if there are supported by partnership network, mentoring and financing. The teaching factory program is very important to be supported by the business and industrial company because they are the graduate users so that the Vocational High School can adjust to the competencies desired by the market. The graduates can be directly absorbed. Partnerships with institutions make it break through bureaucratic easier. Partnership with parents is very important because they are the main supporters of teaching factory program. Parents are the main target of the student's product. Society as a consumer is an important partner that influences the continuity of teaching factory at Vocational High School. The partnership network with alumni is also very important because alumni are very helpful in the production process. Furthermore, the role of alumni are provide job information to their younger siblings so that graduates can be absorbed in business and industrial company. Partnership with other educational units provided support both as a consumer, as a comparison or supporting teaching factory activities at Vocational High School.

Mentoring is a very important process in teaching factory activities. Mentoring has the purpose of helping individuals, communities and or groups to optimizing their potential to be self-sufficient. Teachers accompany the process of teaching factory activities from the beginning (planning) to the end (marketing). Mentoring from Business and Industrial Company is very important for students. Thus, students learning directly from the source. Students are more motivated to seek opportunities and create

innovation in their work so can get benefits and cost savings for an organization.

The financing of teaching factory activities comes from government aid funds that are continuously rolled out or re-loaned. The additional capital is derived from the profit from the product sales.

Based on the above exposure can be formulated teaching model ideal to improve entrepreneurship educations of Vocational High School students. An ideal teaching factory supported by a good partnership, mentoring and financing. Good partnerships with government, parents, community, Business and Industrial Company, alumni and other education units will optimize the achievement of teaching factory. Mentoring from the teachers, government and Business and Industrial Company help to know the standard of production quality and competency required by Business and Industrial Company. Financial support from the government, parents and private parties, the teaching factory can not run well.

### **CONCLUSIONS**

Based on the findings of field research as described in the previous chapters, it can be concluded as follows: Teaching factory is a learning activity where students directly perform production activities either in a goods or services within the school education environment, ranging from planning, production process to marketing of products. Goods or services produced have the same quality or in accordance with the standards of the industry so it is worth selling and acceptable by the public or consumers. The benefits obtained to increase school income that's useful for the sustainability of educational activities; Implementation of teaching factory at SMK Negeri 2 Kendal, beginning with planning by teachers, then students doing the production process up to marketing. The implementation of teaching factory improved entrepreneurship education of SMK Negeri 2 Kendal students. Planning prepared by the teacher. Students

create products based on the planning prepared by the teacher, so that students learn task-oriented and results. The production process done by students individually or in groups. Production process through quality control to maintain the good quality. Students learn to be responsible, disciplined, confident and dare to take risks from the production process. Students learn independently when making products individually, and cooperations when making products in groups. Marketing by exhibition, website and promotion to the office, or directly offered to parents or the environment. Students learn to be honest, passionate, hard work, confident, able to overcome difficulties / problems, able to see opportunities and like challenges from marketing activities. From outside mentoring activities students learn open to technology and from evaluation activities students learning to receive input, criticism and advice from outside. The implementation of teaching factory at SMK Negeri 2 Kendal, there are cooperation with government, parents, business world and industry, alumni, society and other education units. Schools get additional capital from the profit of sales products, which are divided by a certain percentage. The advantages of teaching factory in SMK Negeri 2 Kendal especially furniture engineering skill program are the ability to complete the furniture of school needs, serving orders from customer, the cooperation between the school with the Business and Industrial Company, alumni and other agencies. Profits are returned to the school and put into the department's and Center Production Unit with a certain percentage. Students who made product are given wages like general labor. The weakness of teaching factory at SMK Negeri 2 Kendal especially furniture engineering skill program is that there is no mentoring from the institution in teaching factory activity. Ideal teaching factory supported by good partnerships, mentoring and financing. The good partnership with the government, parents, community, Business and Industrial Company, alumni and other education units will optimize the achievement of teaching factory. The

Government given fund, coaching and evaluator programs. Parents directly involved with purchasing products from students. It is very useful for teaching factory programs. Society as a consumer is an important partner that influences the continuity of teaching factory at Vocational High School. Teaching factory program is very important to be supported by Business and Industrial Company as graduate user so that Vocational High School can adjust to the competence desired by Business and Industrial Company. Alumni can help schools to achieving order target. Alumni who have been successful can provide information and job opportunities for the younger siblings. Other education units can provide support both as a consumer, as a comparison or support the teaching factory activities in Vocational High School. Mentoring in teaching factory activities comes from teachers, while outside mentoring is not done directly in the teaching factory process. Mentoring from Business and Industrial Company provided by training to certain teachers and students who are assessed to have specialized skills. The implementation of teaching factory requires a lot of financing and requires support from the government, parents and private parties.

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