

The Effect of the Application of the Learning Model 6 Step Teaching Factory (Tf-6m) and Achievements Learning Entrepreneurship on Interest Entrepreneurs for Vocational Students

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Abstract. Teaching Factory 6M Learning Model is an integrated learning model. Entrepreneurship Subjects (Mapel) that are refined into Creative Products and Entrepreneurship (PKKWU) are a learning process for inculcating entrepreneurial values through habituation and maintenance of behavior and attitudes. Through the Teaching Factory Learning Model supported by PKKWU learning, students are expected to have an interest in entrepreneurship. The application of the Teaching Factory Learning Model aims to shape student competencies through a unified school environment based on industry and supported by the implementation of PKKWU learning in the formation of an entrepreneurial mentality. This article examines the effect of applying the Teaching Factory 6M Learning Model and Learning Achievement of Creative and Entrepreneurial Products on Entrepreneurial Interests in students of SMK Negeri 4 Kendal. The research method used in this research is descriptive and verification method.

Key words: 6-step teaching factory learning model; creative product learning achievement and entrepreneurship; entrepreneurial interest.

How to Cite: Siswanto, E., Samsudi, S., Suprptono, E., Sutopo, Y. (2021). The Effect of the Application of the Learning Model 6 Step Teaching Factory (Tf-6m) and Achievements Learning Entrepreneurship on Interest Entrepreneurs for Vocational Students. *ISET: International Conference on Science, Education and Technology*, 7(1), 134-139.

INTRODUCTION

The curriculum is developed on the basis of educational theory based on standards and competency-based educational theory. Standard-based education is education that sets national standards as the minimum quality of learning outcomes that apply to each curriculum. National quality standards are declared as Graduate Competency Standards (SKL). SKL is the minimum quality of graduates of a level or educational unit that includes attitudes, knowledge, and skills (PP number 19 of 2005). Meanwhile, competence refers to the Theoretical Foundation of the 2013 Curriculum is a person's ability to behave, use knowledge and skills to carry out a task in school, community, and the environment in which the person interacts.

Vocational High School (SMK) is a formal line of education as a form of vocational education unit. Vocational High Schools produce graduates who have competence in their field of expertise and can be developed and are ready to enter Industry, Business and Work (IDUKA). The subject program in SMK in principle consists of three groups of subject programs, namely normative, adaptive, and productive subjects. Which is now simplified into two subjects, namely general subjects (subjects) and vocational

subjects. Vocational schools must be able to carry out learning optimally (innovative and creative), but the facts on the ground show that not all vocational schools are able to carry out the learning process optimally. This condition occurs due to the lack of optimal conditions for supporting practical activities in the workshop and the application of learning models that are less acceptable to students. For this reason, efforts are needed to overcome this situation. One of them is through the development of appropriate learning models. The learning model that can be applied is the Teaching Factory 6 Step learning model, hereinafter referred to as TF-6M.

The application of the TF-6M Learning Model is expected to support efforts to increase innovative and creative Human Resources (HR) in the current era of globalization. Innovative and creative human resources can also be realized through the Creative Products and Entrepreneurship (PKKWU) folder. Mapel PKKWU is a process of learning and inculcating entrepreneurial values through habituation and maintenance of behavior and attitudes.

The definition of entrepreneurship is essentially the nature, characteristics, and character of a person who has the will to bring innovative ideas into the real world creatively

(Suryana, 2000). With the improvement of Entrepreneurship subject learning Being a PKKMU subject, students should have an interest in entrepreneurship, by producing creative products both goods and services according to their respective expertise competencies.

"A person who is interested in entrepreneurship must be able to accept all the processes that occur in entrepreneurship" (Purnama, 2009: 39). Through the application of the TF-6M learning model which is supported by PKKMU subject learning, students are expected to have an interest in entrepreneurship. Individuals (students) must be able to prepare provisions in the form of mental attitudes and learn to master several skills that support the implementation of entrepreneurship.

The TF-6M model consists of two groups of softskills and hardskills activities that aim to improve students' competence in productive subjects of skill competence according to their respective characteristics. Soft skills and hard skills activities are expected to be able to develop students' potential in the form of personal, social, academic and vocational skills that are integrated in the learning cycle. There are three elements involved in the learning process, namely: students who act as workers, teachers who act as assessors, consultants, facilitators, and at the same time as the person in charge of the entire learning program, and the giver/owner of orders/orders either from industry, from individuals or from customers. local schools (Martawijaya 2010).

The TF-6M Learning Model in one work cycle consists of six steps, namely: receiving orders, analyzing orders, stating readiness to work on orders, working on orders, carrying out quality control, and submitting orders.

Automotive Light Vehicle Engineering Expertise Competence (TKRO) as an expertise program that is committed to producing professionals who have skills, expertise, and professionalism in the TKRO field. The purpose of TKRO expertise competence generally refers to the contents of the National Education System Law (UU SPN) article 3 regarding the National Education Goals and the explanation of article 15 which states that vocational education is secondary education that prepares students especially to work in certain fields.

In particular, the purpose of the TKRO expertise competence is to equip students with the skills, knowledge, and attitudes to be competent in:

1. Develop and apply in their work

independently and be able to find job vacancies at IDUKA as a reliable middle-level workforce.

2. Having character, being able to compete and developing a professional attitude in the competence of TKRO.
3. Creating own employment or entrepreneurship in the field of TKRO Expertise Competence.
4. Continuing to a higher level of education according to their competence.

The competencies used as a reference for developing this curriculum are the Indonesian National Work Competency Standards (SKKNI) on TKRO Expertise Competencies. The competency standards and qualification levels of TKRO expertise can be described as follows:

1. Implementing Occupational Health and Safety
2. Reading Automotive Engineering Drawings
3. Using measuring tools
4. Carry out the Diagnosis
5. Performing Regular Engine Maintenance
6. Carrying out the Engine Overhaul Process
7. Maintain and Repair Engine Lubrication System
8. Maintain and Repair Engine Cooling System
9. Maintain and Repair the Fuel System
10. Carrying out Brake System Maintenance
11. Carry out Brake System Overhaul
12. Carry out Steering System Maintenance
13. Checking the Suspension System
14. Maintaining the Clutch System
15. Doing a Transmission Overhaul
16. Maintaining Battery
17. Assembling the Electrical Network in the Vehicle
18. Improved Lighting System
19. Repairing Damage to the Electrical Safety System
20. Maintaining the Air Conditioning System

Entrepreneurship education is a discipline that studies the values, abilities, and behavior of a person in facing life's challenges to obtain opportunities with various risks that they may face. This education is the basis for students to become entrepreneurs who have knowledge of entrepreneurship. The school has worked hard to seek educational reform. Schools are faced with the challenges and demands of the times, where SMK must try to create entrepreneurial humans in the school environment. Students studying at SMK Negeri 4 Kendal are not only required to get

high grades and intellectual achievement, but also have to pursue moral values, entrepreneurial mental attitude, sensitivity to the meaning of the environment, facts and functional knowledge, and skills. entrepreneurship that demands the creation of change.

Creative Products and Entrepreneurship subjects at SMK Negeri 4 Kendal. aims that students have the following abilities:

- a. Understanding IDUKA in daily life
- b. Entrepreneur in their field
- c. Applying achievement work behavior in his life
- d. Actualizing entrepreneurial attitudes and behavior

METHODS

The research method used is a quantitative method. The research analysis used a descriptive study, which is a method that is directed at solving problems by describing or describing what the research results are. The research focus on the effect of independent variables on the dependent variable with inferential statistical analysis techniques. Sugiono (2004: 170) reveals that inferential statistics is a statistical technique used to analyze sample data and then the results are applied to the population.

Quantitative research is widely used to test theories, facts, describe statistics, and show relationships between variables. Research is to develop concepts, develop understanding or describe facts in the field.

RESULT AND DISCUSSION

1. Application of the TF-6M Learning Model as Variable X1

Quantitative data was obtained through the distribution of questionnaires/instruments aimed at students' perceptions of the application of the TF-6M learning model. The perception instrument of the TF-6M learning model is considered representative in obtaining data on the application of the TF-6M learning model. Based on the results of the calculation of the frequency distribution and the calculation of basic statistics (X1), the data obtained are as follows: Number of classes (bk) = 5.31 5 class length = 5.16 5, n (sample) = 30, total ($\sum X1$) = 2685, mean ($\sum X1/n$) = 89.50, standard deviation (S) = 8.50, lowest score = 75, highest score = 102, mode = 97, median = 90.

The majority of respondents' perceptions of students about TF-6M (X1) were 20 people or 67% and belonging to the moderate

characteristics were 10 people or 33%. If it is interpreted from the data obtained by looking for the average respondent, it is 89.50. The result of the research instrument on students' perceptions of the TF-6M learning model with reference to the characteristics of perception, is of moderate character. It means that students have different perceptions

enthusiastic about the application of the TF-6M learning model on the Automotive Light Vehicle Engineering Skills Competence, but students still need a lot of practice and habituation to the TF-6M learning model.

2. Creative Product Learning Achievement and Entrepreneurship as Variable X2

Based on the data on the value of learning achievement obtained from the school, the authors characterize it by adding up the scores, then looking for the length of the interval. The results of frequency distribution calculations and basic statistical calculations (X2) obtained the following data results: Number of classes (bk) = 5.39 5 class length = 2.40 2, n (sample) = 30, total ($\sum X2$) = 2412, mean ($\sum X2/n$) = 80.40, standard deviation (S) = 4.27, lowest score = 73, highest score = 87, mode = 78, median = 80. The majority of respondents about product learning achievement creative and entrepreneurial (X2) are classified as good characteristics, namely as many as 30 people or 100%. The data obtained by finding the average respondent is 80.40. It is interpreted that student learning achievement in the subjects of creative products and entrepreneurship is of good character. It means that students have a good grasp of understanding, in terms of cognitive and psychomotor. It is also supported by good student behavior shown during the learning period.

3. Entrepreneurial Interest as Variable Y

The description of entrepreneurial interest, the results of the calculation of the frequency distribution and the calculation of basic statistics (X1) obtained the following data results: Number of classes (bk) = 5.13 5, class length = 15.6 16, n (sample) = 30, sum ($\sum X1$) = 1964, mean ($\sum X1/n$) = 65.467, standard deviation (S) = 21.104, lowest score = 21, highest score = 99, mode = 55, median = 69.

The majority of respondents' responses about entrepreneurial interest (Y) belong to very high characteristics, namely 9 people or 30%. Meanwhile, the smallest frequency is with moderate characteristics as many as 4 people or 13%. The data obtained by finding the average respondent is 65.47. It is interpreted that student

learning achievement in the subjects of creative products and entrepreneurship is of moderate character. It means that students' interest in doing entrepreneurship is already there, but there is still a need for better direction efforts.

Some of the students still hope to work for other people's companies compared to owning their own business.

1. Application of the TF-6M Learning Model as Variable X1

The results of the data indicate that students' interest in the TF-6M learning model is greater than the conventional learning model. The instrument given to students regarding students' perceptions of the TF-6M learning model obtained data that students found it easier to understand productive learning. Students are directly involved in the manufacture of products as well as in marketing activities. So that in this learning activity students will be faced with a responsible attitude at work, to be competent in their productivity.

2. Creative Product Learning Achievement and Entrepreneurship as Variable X2

The data on learning achievement of creative and entrepreneurial products illustrates that entrepreneurship education needs to make efforts to approach learning activities that are more interesting. Entrepreneurship education is considered necessary for students, especially vocational students as a provision of knowledge. Good when working in the industry, even more so when starting your own business.

3. Entrepreneurial Interest as Variable Y

The data regarding the entrepreneurial interest of students, the majority of respondents' responses to the interest in entrepreneurship (Y) belong to very high characteristics, namely as many as 9 people or 30%. Meanwhile, the average respondent about entrepreneurial interest is included in the moderate characteristics, namely as much as 65.47%. This condition is influenced by several factors. The public's view of the entrepreneurial profession today is starting to be in demand. The community's need for the world of work that is less able to be absorbed by industry, makes people think more creatively to take advantage of existing opportunities for entrepreneurship.

4. The Effect of Implementation of the TF-6M Learning Model as Variable X1 on Entrepreneurial Interest as Variable Y

In connection with the results of data processing, it shows that the application of the TF-6M learning model provides students with

direct knowledge and experience in managing a business in the field of Automotive Light Vehicle Engineering. This knowledge and experience has fostered student entrepreneurial interest, especially in the field of Automotive Light Vehicle Engineering.

5. The Effect of Creative Product Learning Achievement and Entrepreneurship as Variable X2 on Entrepreneurial Interest as Variable Y

The variable learning achievement of Creative Products and Entrepreneurship (X2) has an influence on entrepreneurial interest (Y) only 0.049. The results of the processing provide an overview of the learning process for Creative Products and Entrepreneurship only a little to foster student entrepreneurial interest. The condition that occurs is that students actually take part in all marketing tasks in the subjects of creative products and entrepreneurship only to drop assignments. Students do sales exercises only to the extent that the product can be sold out. Most of the students do the product marketing process to their families, including their parents.

6. The Influence of the Application of the TF-6M Learning Model as Variable X1 and Learning Achievement of Creative Products and Entrepreneurship as Variable X2 on Entrepreneurial Interest as Variable Y

The two independent variables simultaneously have a significant effect on the dependent variable of 0.656. The results of this data processing provide an overview of entrepreneurial interest that can be formed through a habituation process balanced with good knowledge about Creative Products and Entrepreneurship (PKKWU). Students get habituation, one of which is through the application of the TF-6M learning model. The application of the TF-6M learning model has provided direct experience for students through learning activities in an industry-like atmosphere. In addition, to strengthen understanding and knowledge about entrepreneurship through PKKWU subject learning, students are provided with real PKKWU practice activities in schools that can participate in selling or marketing products, both goods and services for motorized vehicles, both to fellow students, teachers and the family environment around their homes.

CONCLUSION

The conclusions of the research are based on the discussion of research results that refer to the research objectives, concluded as follows:

1. The application of the TF-6M learning model through a student perception questionnaire about the application of the TF-6M learning model is in the medium category.
2. Learning achievement of creative and entrepreneurial products through the data obtained pure learning outcomes before the remedial program was carried out were in the good category.
3. Entrepreneurial interest through an entrepreneurial interest questionnaire, provides an overview of the entrepreneurial interest of students in the medium category.
4. The results showed that the application of the TF-6M learning model had a significant effect on entrepreneurial interest.
5. The results of the study indicate that there is an effect of learning achievement on creative and entrepreneurial products on entrepreneurial interest.
6. Together, there is a significant effect of applying the TF-6M learning model and learning achievement of creative and entrepreneurial products on entrepreneurial interest.

REFERENCES

- Azizah, D. N., Muslim, S., Achmad, R. N., Lukmantoro, D., Farida, U., Ciptono, A., & Joko, J. (2019). Development of Teaching Factory Model At Vocational High School (VHS) In Indonesia. *Indonesian Journal of Learning Education and Counseling*, 2(1), 9-16.
- Cahyaningrum, N., & Agus, H. S. (2020, February). Implementation of Learning Teaching Factory Clothes at SMK N 3 Malang. In 2nd International Conference on Social, Applied Science, and Technology in Home Economics (ICONHOMECES 2019) (pp. 269-274). Atlantis Press.
- Chrysosolouris, G., Mavrikios, D., & Rentzos, L. (2016). The teaching factory: A manufacturing education paradigm. *Procedia Cirp*, 57, 44-48.
- PSMK Directorate. 2010. Management of Teaching Factory Implementation. Directorate of Elementary Education, Ministry of Education and Culture.
- Diwangkoro, E. (2020). Development of teaching factory learning models in vocational schools. In *Journal of Physics: Conference Series* (Vol. 1456, No. 1, p. 012046). IOP Publishing.
- Fajaryati, Nuryake. 2012. Evaluation of the Implementation of the Teaching Factory of Vocational Schools in Surakarta. *Journal Serunai Journal of Education Administration* Vol.7, No.1, December 2018 e-ISSN 2620-92097
- Vocational Education, Vol 2, Number 3, November 2012
- Fuadi, Afnan. 2016. Evaluation of Teaching Factory Learning Programs in Middle Fisheries Business Schools. *Journal of Educational Science Perspective - Vol. 30* No.2 October 2016
- Hamidah, 2018. Student Management. *Serunai Journal of Education Administration* Vol.6, No.2, June 2018
- Harris, Abdul. 2012. Teaching Factory Based Learning Management (Study Site of SMK Muhammadiyah 1 Klaten). Masters in Educational Management in the Graduate Program of the University of Muhammadiyah Surakarta.
- Herminto Sofyan. 2008. Optimization of Competency-Based Learning in Vocational Education. Professor Inauguration Speech, delivered at the Yogyakarta State University Senate Open Meeting, Saturday 16 February 2008.
- Indahsari, Euis Lise. 2017. Evaluation of the Implementation of the Teaching Factory Learning Model in TPHP Productive Learning. Indonesian education university
- Khoiron, A. M. (2016). The Influence of Teaching Factory Learning Model Implementation to The Students Occupational Readiness. *Journal of Technology and Vocational Education*, 23(2), 122-129.
- Mortzis, D. (2018, June). Development of skills and competences in manufacturing towards Education 4.0: A teaching factory approach. In *International Conference on the Industry 4.0 model for Advanced Manufacturing* (pp. 194-210). Springer, Cham.
- Mavrikios, D., Georgoulas, K., & Chrysosolouris, G. (2018). The teaching factory paradigm: Developments and outlook. *Procedia Manufacturing*, 23, 1-6.
- Martawijaya, D. H. (2012). Developing a teaching factory learning model to improve production competencies among mechanical engineering students in a vocational senior high school. *Journal of Technical Education and Training*.
- Rentzos, L., Mavrikios, D., & Chrysosolouris, G. (2015). A two-way knowledge interaction in manufacturing education: The teaching factory. *Procedia CIRP*, 32, 31-35.

- Sugiyono. 2009. Qualitative Quantitative Research Methods and R & D. Bandung.
- Wahjusaputri, S., Bunyamin, S. F., & Tashia Indah Nastiti, A. S. (2020). Teaching Factory Model for Increasing the Competency of Vocational Secondary Education Students in Indonesian Territory. International Journal of Innovation, Creativity and Change, 11(1).
- Yoto, Y., & Marsono, M. (2020). Implementation of Work-Based Learning at Teaching Factory in Vocational Education. Technology and Vocational: Journal of Technology, Vocational and Teaching, 43(2), 150-155.