HASIL CEK_Jurnal Pendidikan Vokasi

by Mpgv Jurnal Pendidikan Vokasi

Submission date: 18-Jan-2023 10:20AM (UTC+0700)
Submission ID: 1994532818
File name: Jurnal_Pendidikan_Vokasi_vol_12_no_3_th_2022.pdf (386.2K)
Word count: 5759
Character count: 34459

JURNAL PENDIDIKAN VOKASI

Jurnal Pendidikan Vokasi
Volume 12, No. 3, 2022 (212-221)
Online: https://journal.uny.ac.id/index.php/jpv

Edupreneurship implementation through teaching factory on mechanical engineering competence

i Kuat, Purnawan
Universitas Ahmad Dahlan, Indonesia.
* Corresponding Author. Email: tri.kuat@mpgv.uad.ac.id

ARTICLE INFO

Article History
Received:
30 June 2022;
Revised:
15 July 2022;
Accepted:
13 October 2022;
Available online:
16 January 2022

Keywords
Edupreneurship;
Entrepreneurial spirit;
Teaching factory

ABSTRACT

This study aims to (1) Describe how the edupreneurship implementation through Teachi Factory (TEFA) on the mechanical engineering expertise competence at SMK Muhammadiyah 1 Sukoharjo; (2) Describe the factors supporting the successful implementation of edupreneurship through teaching factory on the mechanical engineering expertise competence at SMK Muhammadiyah 1 Sukoharjo; and (3) Describes the contribution of the edupreneurship implementation through the teaching fac y in fostering an entrepreneurial spirit in mechan engineering students at SMK Muhammadiyah 1 Sukoharjo. This qualitative research used a descriptive approach. The data were collected by interview, observation, and documentation. The informants comprised principals, vice-principals of curriculum, heads of engineering expertise programs, productive teachers, and students. The data analysis technique employed interactive analysis techniques, starting from data collection and then the data were reduced; after being reduced, the data were presented, and the last verification. The data validity was then tested by triangulation of sources. The findings in this study revealed that (1) In terms of planning, organizing, implementing, and monitoring/evaluating, the edupreneurship implementation through teaching factory on the mechanical engineering expertise competence at SMK Muhammadiyah 1 Sukoharjo has been going very well by producing medical device products, especially patient beds that were produced and have been marketed to PKU Muhammadiyah Hospital in Central Java; (2) The factors driving the success of edupreneurship through technology factory comprised: quality educator resources, adequate infrastructure both in quantity and quality, standard operating procedures according to industry standards, quality products, and a well-established product marketing network; and (3) The edupreneurship implementation through the teaching factory contributes to fostering an entrepreneurial spirit by directly involving students in planning, production, and marketing.

How to cite:
Kuat, T., & Purnawan, P. (2022). Edupreneurship implementation through teaching factory on mechanical engineering competence. *Jurnal Pendidikan Vokasi*, *12*(3), 212-221.
https://doi.org/10.21831/jpv.v12i3.48115

INTRODUCTION

Edupreneurship is an entrepreneurial activity in education to become a creative, innovative, and excellent school and can earn income from the activities carried out (Mulyatiningsih et al., 2014). Edupreneurship activities support the success of educational institutions to be excellent (Kuat & Santosa, 2020). An educational institution is declared excellent if it can empower educators and students to become successful people and contribute to the success of their institutions. The success of vocational education institutions, specifically, is judged by how much their graduates can be absorbed in the world of work or entrepreneurship (Dariansyah & Djuhartono, 2017; Mulyatiningsih et al., 2014).

To become an excellent institution, vocational high school is expected to prepare students to have work competencies according to the demands of the industrial world or provide various knowledge and skills to become entrepreneurs (Hynes & Richardson, 2007). In addition, the concept of edupreneurship is emphasized in the efforts made by the school creatively and innovatively to gain school excellence in the form of achievement and increase income (Suhartini et al., 2022). School achievement may not immediately lead to material gains, but excellent schools have more opportunities to receive better rewards, assistance, and student input. With this achievement capital, the school will gradually become an excellent one. Excellence may also have a small financial impact, but it does pave the way for a more successful future. After becoming an excellent school, opportunities to find additional income will also be easier to obtain.

The principal drives edupreneurship as a leader and manager in the school. Principals who become edupreneurs can organize and manage a school institution with full initiative, always innovate, and dare to take risks. According to the Oxford Project (2012) there are at least five behaviors of principals to become edupreneur principals: (1) acting as agents of change, (2) leading selflessly, (3) bringing a new culture, which is expected with full confidence, (4) supporting risk-taking and continuous learning, and (5) willing to invest and utilize existing resources; even when resources are scarce, leaders are willing to invest (Oxford Project, 2012). Further, teaching factory learning is the right thing for students to have competencies in the world and industry. Teaching factory learning brings learning closer to the actual situation regarding the curriculum, how it works, work culture, and work discipline, providing competencies as demanded by the world of industry and work (Li et al., 2019).

Edupreneurship through teaching factories is implemented using students carrying out learning activities similar or almost similar to those carried out in the business and industrial world (Kuat, 2018). A teaching factory is a learning concept in an actual situation to bridge the competency gap between the knowledge provided by the school and the needs of the industry. Hasbullah (2010) stated that the teaching factory is a learning approach based on the production process and learning in the world of work. Learning through the teaching factory aims to develop the characters and work ethics (discipline, responsibility, honesty, cooperation, leadership, and others) needed by the business world and industry and to improve the quality of learning outcomes by simply equipping competence (competency-based training) becoming learning that equips the ability to produce goods/services (production-based training) (Kuat, 2017).

However, teaching factory learning in vocational high schools still needs to follow the actual learning demands, so graduates are not accepted in the industrial world and the world of work. The phenomenon revealed that vocational high school graduates still need to gain high competence, so their competence still needs to be recognized by the business world and the industrial world (Hartanto et al., 2019; Torun Tumen, 2019). This follows the results of Yunanto's (2017) research that implementing the teaching factory in the boutique fashion design skill program at SMKN 2 Gedangsari, Gunung Kidul could have gone better. The activities carried out have yet to be able to run optimally in a sustainable manner. In addition, the involvement of productive teachers and students needs to be maximized in teaching factory learning. As a result, the seven parameters of teaching factory management, workshop and laboratory management, training learning, communication media, products and services, teaching factory resources, and industrial relations have yet to be maximally achieved (Yunanto, 2017).

In this case, the mechanical engineering expertise competence at SMK Muhammadiyah 1 Sukoharjo has carried out teaching factory activities since receiving block grand teaching factory assistance from the government. At first, it could not develop because it was still doing early activities and experimenting. However, since becoming a center of excellence school, it has later become a center of excellence for teaching factory activities that developed rapidly and in harmony with the construction of a technopark. Thus, teaching factory activities can use a large area of land accompanied by the fulfillment of increased machine facilities by buying CNC machines and welding cutting machines. Teaching factory activities are also developing, especially after producing medical devices like patient beds, waiting chairs, etc (Liu et al., 2019).

On the other hand, growing students' entrepreneurial spirit is vital so that vocational school graduates are not unemployed. In this case, the policies made by the Indonesian government are to improve the quality of human resources through education, instill an entrepreneurial spirit at every level of education, and seek to expand employment opportunities. In schools, efforts to develop an entrepreneurial spirit are carried out with edupreneurship activities such as business centers and teaching factories. The growth of an entrepreneurial spirit through a business center is carried out through business practice activities by students (Kuat, 2015).

Meanwhile, the psychological aspects that characterize individuals are said to have an entrepreneurial spirit and attitude, according to Suryana (2008) are:

> *(1) Confidence in determining something, confidence in doing things, and confidence that they can overcome various risks faced are the basic factors that entrepreneurs must own. Someone with an entrepreneurial spirit feels confident that whatever he does will succeed despite facing various obstacles. He is also not always haunted by the fear of failure, making himself optimistic about keeping going; (2) Initiative (energetic and confident): in dealing with the dynamics of life full of changes and problems, an entrepreneur will always try to find a way out. They do not want their lives to depend on the environment, so they will continue trying to find a way out; (3) Having achievement motive: various targets to achieve success in life are usually and always designed by an entrepreneur. One by one, their targets continue to be achieved. When faced with a failed condition, they will continue to try to improve the failure they experienced. Success after success achieved by someone with an entrepreneurial spirit makes it a trigger to continue to achieve success in his life. For them, the future is success and beauty to be accomplished in life; (4) Having a leadership spirit (dare to be different and take calculated risks): leadership is a key factor in becoming a successful entrepreneur; and (5) Liking a challenge: people may often read or witness several cases of a manager or executive resigning from a company to become an entrepreneur.*

Based on the background of the problems that have been described, the problem formulations in this research are (1) How is the edupreneurship implementation through the teaching factory on the mechanical engineering expertise competence at SMK Muhammadiyah 1 Sukoharjo?; (2) What are the supporting factors for implementing edupreneurship through teaching factories on the mechanical engineering expertise competence at SMK Muhammadiyah 1 Sukoharjo?; and (3) How is the contribution of the edupreneurship implementation through the teaching factory in fostering the entrepreneurial spirit of students in the mechanical engineering expertise program at SMK Muhammadiyah 1 Sukoharjo?.

RESEARCH METHOD

The type of research used in this research is qualitative research. Qualitative research is used to understand a phenomenon or an event in the field related to what is experienced by the research subject. Qualitative research is used to understand certain situations, events, roles, groups, or social interactions (Creswell, 2016). This qualitative research uses a descriptive approach to describe or analyze a research result but is not used to make broader conclusions. The research was conducted with the mechanical engineering expertise of SMK Muhammadiyah 1 Sukoharjo. The informants for this research comprised principals, vice-principals of curriculum, heads of engineering expertise programs, productive teachers, and students. Collecting data in this study utilized interviews,

observation, and documentation. The data analysis technique used interactive techniques, starting from data collection regarding teaching factory learning. Then, data were reduced; after being reduced, the data were presented, and the last was verification (Miles & Huberman, 1992). To test the data validity, triangulation was performed. This study employed triangulation of sources by comparing information through observation, interviews, and documentation. From the results of these studies, evidence would be obtained following the phenomenon under study.

RESULT AND DISCUSSION

The Edupreneurship Implementation Through Teaching Factory on the Mechanical Engineering Expertise Competence at SMK Muhammadiyah 1 Sukoharjo

The implementation of edupreneurship through teaching factory competence in mechanical engineering skills at SMK Muhammadiyah 1 Sukoharjo is seen from planning, organizing, implementing, and monitoring/evaluating.

Planning

The planning of the Teaching Factory (TEFA) workshop on the mechanical engineering expertise competence at SMK Muhammadiyah 1 Sukoharjo aimed to prepare the implementation to run well. The initial planning was carried out from making the stipulation and the teaching factory program. Planning began with the selection of human resources, aimed to determine the minimum competence of teachers according to the needs of the mechanical expertise teaching factory program. The required competencies conducted the recruitment of teachers with a minimum undergraduate qualification from the Faculty of Teacher Training and Education, Department of Mechanical Engineering. To improve the performance and productivity of teachers, competence was increased by being sent to Educational and Training Institutions (Diklat) or internships in the industry. According to Ismail et al. (2018), teachers need creativity and flexibility to create functional conditions for students during the learning process and create educational experiences which enable the development of creativity among their students.

Product planning also aimed to ensure that the product met the quality and market needs. The products included medical devices, such as patient beds, patient waiting chairs, patient dining tables, and first aid kits. Product planning was carried out on an ongoing basis to maintain product quality and good customer service. In this case, every product entry and exit was always recorded to make it easier for the teacher to check the product's condition. The data were used to determine what products were needed by consumers and improve quality following industry standards. Some of the proceeds from product sales were used to develop teaching factory facilities and infrastructure. Sudiyono (2020) states that program planning related to products/services to be generally produced still on the type of product based on orders, not yet on product innovation, the number of products to be produced, and product sustainability.

Furthermore, marketing planning at the TEFA workshop on the mechanical engineering expertise competence at SMK Muhammadiyah 1 Sukoharjo used the marketing concept of STP (segmentation, targeting, positioning) with a marketing mix model of 7P (product, price, place, promotion, process, people, physical evidence). The marketing target segment is PKU Muhammadiyah Hospitals throughout Indonesia. In the initial stage, it is targeted to meet the needs of PKU Muhammadiyah hospitals in Central Java, Indonesia. In addition, aside from the use of social media as the main means of promotion, other forms of promotion also with affordable product prices, accompanied by product quality maintained and equipped with good service as the primary promotion.

Then, financial planning at the teaching factory workshop on mechanical engineering expertise competence aimed to protect the workshop finances from the impact of complex activities. Initial capital was used to develop capital (production). Finance came from assistance from the Ministry of Education and Culture of the Republic of Indonesia and capital from the school itself.

Organizing

The organization of the TEFA workshop on the mechanical engineering expertise competence at SMK Muhammadiyah 1 Sukoharjo aimed to determine the division of personnel and each task and authority in carrying out their duties. The TEFA workshop has its managem structure outside of the school management structure. The management structure helps facilitate the division of tasks in the organizational structure of the TEFA workshop. The division of tasks for the TEFA workshop unit at SMK Muhammadiyah 1 Sukoharjo were divided into responsible persons with the positions of director, stakeholder, implementation coordinator or chairman, head of the workshop of teaching factory production unit, secretary, treasurer, teachers, employees, and students. In the teaching factory at SMK Muhammadiyah 1 Sukoharjo, the person in charge also served as the director of TEFA.

In addition, the preparation of the organizational structure made detailed job descriptions, so there was no overlap and could coordinate well. This follows research conducted by Sanatang (2020), who states that the organization is carried out through establishing the TEFA organizational structure, job descriptions, and standard operating procedures for each department's activities. However, the implementation of each department's activities has not been well documented. The human resources involved in the organizational structure are all internal to the school. There is no participation from the relevant government

In organizing production, the production schedule was written after the teaching factory workshop received orders from consumers. It made it easier to determine work and anticipate a student work system that used a rolling system so that students were not burdened with learning hours. In addition, product sales data were used to determine the number of products sold and where the products were sold.

Implementing

The implementation of teaching factory learning on the mechanical engineering expertise competence involved students, i.e., students of class XI and XII, on the mechanical engineering expertise competence. The learning process with the teaching factory implementation on the mechanical engineering expertise competence began with planning the approach application of the teaching factory learning model, carried out by applying an industrial culture approach, setting up school practice laboratories adapted to conditions in the industry, and applying the block system learning hours.

The implementation of learning strategies and systems was prepared by adjusting the industry-based curriculum, selecting and implementing learning strategies appropriate to the learning conditions, and utilizing the production unit as a place and a good learning environment. In addition, the making of learning job sheets followed the needs of the industry. The management of practical learning facilities and infrastructure was also added by constructing a teaching factory building with equipment facilities following industry standards and separate from the school building. Management was also carried out by applying industrial environmental management standards, such as spatial planning, equipment, and waste management.

Moreover, implementing teaching factory learning at SMK Muhammadiyah 1 Sukoharjo began with an introduction to practical learning, starting from preparing to wear practical clothes and Personal Protective Equipment (PPE). Prior learning was done by opening, praying, checking student attendance by the teacher or instructor, and continuing with the division of work or practical jobs. Especially for class XI and XII, who had their turn rolling, they would practice in the production building of the TEFA workshop. Implementing the practice also began with an explanation and direction to the job, work safety, and the purpose of the practice carried out by the teacher or instructor. Implementation of the practice was following the job given and directed. Students learned to analyze, solve problems, and make reports or records of the work. The teacher or instructor also monitored and guided the practicum process.

Products in medical devices resulted from the practicum carried out in the TEFA workshop in the form of medical devices, especially patient beds, that have been produced and marketed to PKU Muhammadiyah hospitals in Central Java. Standard Operational Procedure (SOP) was used in carrying out all types of work. Related to this, students need to be trained for emergency conditions

and limited tools, which are expected to grow and develop their creativity (Efendi & Sudarwanto, 2018). Then, sales of service products were carried out by employees with the help of students as implementers. Proceeds from product sales were used as production funding, divided into operational costs, employee salaries, and school income funds. It confirms that the TEFA workshop became income for schools by the TEFA concept.

The implementation of teaching factory learning on the mechanical engineering expertise competence has been proven to involve students, namely students of class XI and XII, in the mechanical engineering expertise competence.

Monitoring and Evaluating

Supervision activities are needed to record the progress of the teaching factory, monitor the process and progress of implementing policies continuously, identify problems and deviations that arise, formulate problem-solving, and make progress reports regularly in a short period. Evaluation is an effort to assess something technically and economically for the possibility of implementing development. In the teaching factory implementation, evaluation means an assessment of the learning model that has been implemented to make continuous improvements. Through the evaluation process, the institution could consider the strengths and weaknesses of the elements influencing the teaching factory implementation at SMK Muhammadiyah 1 Sukoharjo and get an idea to improve the quality and quality to support the successful implementation of the teaching factory.

The research results in support by Putra (2022), stated that the research results showed that planning, organizing, implementing, and supervising were following the teaching factory concept on the motorcycle engineering and business expertise competence at SMK Ma'arif 1 Wates was carried out well but not optimal. In addition, in their study, 65% of students had been involved in organizing and implementing, while for planning, organizing, and evaluating, 100% were carried out by the management team of the teaching factory unit on the motorcycle engineering and business expertise competence at SMK Ma'arif 1 Wates.

Based on the data obtained, the implementation of edupreneurship through teaching factory competence in mechanical engineering skills at SMK Muhammadiyah 1 Sukoharjo, seen from planning, organizing, implementing, and monitoring/evaluating, has gone very well, by producing medical equipment products, especially patient beds that have been produced and marketed to the PKU Muhammadiyah Hospital in Central Java, Indonesia.

The Driving Factor for the Successful Implementation of Edupreneurship Through Teaching Factory on the Mechanical Engineering Expertise Competence at SMK Muhammadiyah 1 Sukoharjo

The successful implementation of edupreneurship was supported by several factors. First, human resources had high competence because the number of teachers in the mechanical expertise program was five, all of whom had undergraduate backgrounds. Improving teacher competence was also carried out by involving productive teachers in education and training activities held by the government. Thus, all teachers attended education and training. Another effort was to attend industrial internships; all five productive teachers had taken industrial internships. From these data, it can be concluded that human resources, especially productive teachers related to the teaching factory learning implementation, all had an undergraduate background and had attended education, training, and internships.

Second, the facilities and infrastructure owned were a four-story building with sufficient classrooms; there was air conditioning, Wi-Fi facilities, and LCD in each class. The teaching factory laboratory had facilities for CNC machines, lathes, cutting machines, welding tools, and painting tools. In addition, there was room for painting the product in the context of finishing the product. Third, work operational standards refer to work standards in the industry in terms of work culture, production work standards, and work safety standards under the guidance of experienced supervisors.

Fourth, the products produced in the teaching factory had high quality because each product had passed the quality test in collaboration with the university's engineering faculty laboratory. The product results were medical devices, including patient beds, patient waiting chairs, push tables for

patients eating, tools for placing infusions, first aid kits, and modifying ambulance cars. Fifth, the product marketing network had been well established by holding an MOU with PKU Muhammadiyah Hospitals in Central Java, so that the need for hospital beds could be met from the teaching factory of SMK Muhammadiyah 1 Sukoharjo. PKU hospitals that have purchased patient beds are PKU Sukoharjo, PKU Surakarta, PKU Gombong, PKU Karanganyar, PKU Tegal, and others. Meanwhile, modifying ambulance cars from the community was also quite a lot.

The driving factor for the successful implementation of edupreneurship through the teaching factory is supported by the Sanatang (2020) research results, revealing that: (1) the TEFA implementation in the TKJ expertise program at SMK Negeri 5 Makassar was going well because it applied management principles, i.e., planning, organizing, implementing, and controlling, supported by TEFA components: human resources, administration, and finance, equipment, curriculum, learning, products, and marketing; (2) The TEFA implementation in the TKJ expertise program at SMK Negeri 5 Makassar was also running due to supporting factors, including (a) principals who had an entrepreneurial spirit and enthusiasm to develop TEFA, (b) some TEFA managers and instructors (teachers and employees) had attended industry training, (c) adequate equipment facilities, (d) support from students who were always enthusiastic in the TEFA learning process, and (e) there was support from the business and the partner industry world, although the number of participating industries was still lacking.

Also in line with research conducted by Sudiyatno et al. (2013) which states that the supporting factors for implementing the teaching factory at SMK St. Mikael Surakarta are a good culture or culture, competent human resources in their field, and adequate equipment facilities. Also supported by the results of Muhitasari and Purnami (2022), the supporting factors in teaching factory learning are infrastructure facilities according to industry standards and competent teachers, and also in line with the results of Sari's et al. (2022) research, which states that the supporting factors include: competent teachers, supporting facilities and infrastructure, enthusiastic students, toolman, block system practicum schedule, and collaboration with Industrial World Business Internship Program (DUDI), the inhibiting factor is less than optimal time, marketing and a less strategic place. Casmudi et al. (2022) The supporting factors for the curriculum, teacher human resources, facilities and infrastructure, support from DUDI partners, and the management of TEFA products show good and very good categories; and (3) Obstacles and implementation solutions are identified and resolved through a consensus meeting at SMKN 4 Balikpapan.

The Edupreneurship Implementation Through the Teaching Factory Contributes to Fostering an Entrepreneurial Spirit

Teaching factory activities could increase the students' entrepreneurial spirit if the activities follow the learned competencies. At SMK Muhammadiyah 1 Sukoharjo, the edupreneurship implementation through teaching factory activities was carried out following competence in engineering expertise. In addition, the activities done will contribute more positively if they involve students, starting from planning and production to marketing processes.

The involvement of students in the planning, production, to marketing processes is also needed to provide students with direct experience in entrepreneurship. What was done at SMK Muhammmadiyah 1 Sukoharjo, students were involved since receiving orders, and then orders were analyzed between the supervising teacher and students. Then, it was drawn, and the students worked out the order from the base of the picture. The supervising teacher controlled the quality of the work, and to ensure the continuity of the product and to maintain quality in product testing, collaboration with universities was conducted.

After the product was finished, it was handed over to the customer. In marketing activities, students were also involved in printing product catalogs and advertising through existing social media. In other words, after getting an order, students design the product to be made, carry out production, and determine the price consumers must pay. In one activity, students could gain experience in planning, producing, marketing, and managing finances.

Based on the experience of successful schools in implementing teaching factories and contributing to the improvement of students' entrepreneurial spirit, the strategy that must be carried out is to involve students directly in the entire business process. It needs to be emphasized because,

in general, schools still involve students in teaching factory activities, limited to production activities. As a result, students need to learn whether the resulting product sells well, how much it costs, and how much profit it will make. It is supported by Siswanto (2011) research results, stating that teaching factories can improve students' entrepreneurial spirit by involving students directly in the entire business process from planning, production, and marketing. This is also in line with the results of Habiba et al. (2020) which states that the product of the teaching factory program provides positive results in creating an industrial culture that can increase productive competencies and foster students' entrepreneurial spirit, as well as produce products/services that have added value with absorbable quality and are accepted by society.

CONCLUSION

Judging from planning, organizing, implementing, and monitoring/evaluating, the edupreneurship implementation through teaching factory on the mechanical engineering expertise competence at SMK Muhammadiyah 1 Sukoharjo has gone very well by producing medical device products, especially patient beds that have been produced and marketed to PKU Muhammadiyah Hospitals in Central Java. Factors driving the success of edupreneurship through factory teaching include (1) quality educator resources, (2) adequate infrastructure, both in quantity and quality, (3) standard operating procedures work according to industry standards, (4) quality products, and (5) well-developed product marketing network. The edupreneurship implementation through the teaching factory fosters an entrepreneurial spirit by directly involving students in planning, production, and marketing.

ACKNOWLEDGMENT

This work has been supported and funded by the Research and Community Service Institute (LPPM) of Ahmad Dahlan University. The author would like to thank the Head of LPPM UAD, the school principal, the vice principal for the curriculum, the head of the engineering department, productive teachers, and mechanical competency students at SMK Muhammadiyah 1 Sukoharjo for the assistance that has been given.

REFERENCES

Casmudi, C., Sugianto, S., & Maulida, D. T. (2022). Implementation of teaching factory vocational school of center of excellence (PK)(Case study of learning aspects of the culinary and clothing expertise program at SMK Negeri 4 Balikpapan). *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, *5*(2), 11033–11045. https://bircu-journal.com/index.php/birci/article/view/4921

Creswell, J. W. (2016). *Research design: Pendekatan kualitatif, kuantitatif, dan campuran* (R. K. Pancasari (trans.); 4th ed.). Pustaka Pelajar.

Dariansyah, D., & Djuhartono, T. (2017). *Evaluasi efektifitas bussines plan training untuk guru dalam rangka meningkatkan edupreunership di SMK Bisnis dan Teknologi Bekasi* (pp. 171–180). Mercu Buana. http://digilib.mercubuana.ac.id/manager/t!@file_artikel_abstrak/Isi_Artikel_815675957890.pdf

Efendi, Y., & Sudarwanto, S. (2018). Penguatan karakter mandiri, disiplin, kerjasama dan kreatif ("marikerja kreatif") melalui lesson study pada pembelajaran teknologi sepeda motor. *Jurnal Pendidikan Vokasi Otomotif*, *1*(1), 89–99. https://doi.org/10.21831/jpvo.v1i1.21786

Habiba, P. G. S., Sujanto, B., & Karnati, N. (2020). Evaluation of implementation of teaching factory programs in state vocational school, South Jakarta. *International Journal of Education and Research*, *8*(1), 157–164. https://www.ijern.com/journal/2020/January-2020/13.pdf

Hartanto, S., Ratnasari, S. L., & Arifin, Z. (2019). Work skills factor for mechanical engineering students of vocational high school. In N. H. Noh@Seth, N. M. Noor, M. Arsat, D. F. Ali, A. N. M. Nasir, N. H. A. Wahid, & Y. Kamin (Eds.), *TVET Towards Industrial Revolution 4.0* (pp. 70–79). Taylor & Francis. https://doi.org/10.18502/kss.v3i15.4349

Hasbullah, H. (2010). Implementasi pabrik pengajaran (teaching factory) untuk meningkatkan kompetensi siswa SMK. In *Konvensi Nasional V Asosiasi Pendidikan Teknologi dan Kejuruan Indonesia 2010* (pp. 395–402). https://ejournal.undiksha.ac.id/index.php/APTEKINDO/article/view/78

Hynes, B., & Richardson, I. (2007). Entrepreneurship education. *Education + Training*, *49*(8/9), 732–744. https://doi.org/10.1108/00400910710834120

Ismail, M. E., Utami, P., Ismail, I. M., Khairudin, M., Amiruddin, M. H., Lastariwati, B., & Maneetien, N. (2018). The effect of an augmented reality teaching kit on visualization, cognitive load and teaching styles. *Jurnal Pendidikan Teknologi Dan Kejuruan*, *24*(2), 178–184. https://doi.org/10.21831/jptk.v24i2.20031

Kuat, T. (2015). Penumbuhan jiwa kewirausahaan melalui praktik bisnis di business center (studi kasus: SMK Muhammadiyah 2 Surakarta). *Jurnal Pendidikan Ilmu Sosial*, *25*(1), 155–168. https://doi.org/10.2317/jpis.v25i1.827

Kuat, T. (2018). Implementation of edupreneurship through the teaching factory in vocational high school of hotel accommodation: Case study at SMK N 6 Yogyakarta. *Journal of Vocational Education Studies*, *1*(1), 7–12. https://doi.org/10.12928/joves.v1i1.590

Kuat, T. (2017). Penumbuhkan jiwa kewirausahaan melalui implementasi edupreneurship di sekolah menengah kejuruan. *Prosiding SNP (Seminar Nasional Pendidikan) Prodi Pendidikan Akuntansi FKIP Universitas Muhammadiyah Surakarta*, 130–143. https://publikasiilmiah.ums.ac.id/xmlui/bitstream/handle/11617/8881/11.1 Menumbuhkan Jiwa Wirausaha Melalui implementasi edupreneurship.pdf?sequence=1&isAllowed=y

Kuat, T., & Santosa, B. (2020). Edupreneurship through teaching factory in vocational school of hospitality expertise. *International Journal of Scientific & Technology Research*, *9*(4), 3115–3118. http://www.ijstrorg.wwwsg1-ss17.a2hosted.com/final-print/apr2020/Edupreneurship-Through-Teaching-Factory-In-Vocational-School-Of-Hospitality-Expertise.pdf

Li, F., Yang, J., Wang, J., Li, S., & Zheng, L. (2019). Integration of digitization trends in learning factories. *Procedia Manufacturing*, *31*, 343–348. https://doi.org/10.1016/j.promfg.2019.03.054

Liu, Y., Zhang, L., Yang, Y., Zhou, L., Ren, L., Wang, F., Liu, R., Pang, Z., & Deen, M. J. (2019). A novel cloud-based framework for the elderly healthcare services using digital twin. *IEEE Access*, *7*, 49088–49101. https://doi.org/10.1109/ACCESS.2019.2909828

Miles, M. B., & Huberman, A. M. (1992). *Analisis data kualitatif : Buku sumber tentang metode-metode baru* (T. Rohendi (trans.)). UI Press.

Muhitasari, R., & Purnami, A. S. (2022). Manajemen pembelajaran teaching factory dalam mewujudkan jiwa kewirausahaan pada siswa. *Media Manajemen Pendidikan*, *4*(2), 194–202. https://doi.org/10.30738/mmp.v4i2.8206

Mulyatiningsih, E., Sugiyono, S., & Purwanti, S. (2014). *Pengembangan edupreneurship sekolah kejuruan.* Fakultas Teknik Universitas Negeri Yogyakarta. http://staffnew.uny.ac.id/upload/131808329/pendidikan/edupreneurship.pdf

Oxford Project. (2012). *Leading through edupreneurship*. Oxford Community School.

Putra, N. M. (2022). Implementasi teaching factory kompetensi keahlian teknik dan bisnis sepeda motor di SMK Ma'arif 1 Wates. *Jurnal Pendidikan Vokasi Otomotif*, *4*(1), 57–68. https://doi.org/10.21831/jpvo.v4i1.46153

Sanatang, S. (2020). Implementasi teaching factory pada program keahlian teknik komputer dan jaringan SMK Negeri 5 Makassar Sulawesi Selatan. *Jurnal MediaTIK*, *3*(3), 19–24. https://doi.org/10.26858/jmtik.v3i3.15175

Sari, A. K., Giatman, M., & Ernawati, E. (2022). Manajemen pembelajaran teaching factory dalam meningkatkan kompetensi keahlian siswa jurusan tata kecantikan di sekolah menengah kejuruan. *JRTI (Jurnal Riset Tindakan Indonesia)*, *7*(2), 148–155. https://doi.org/10.29210/30031696000

Siswanto, I. (2011). Pelaksanaan teaching factory untuk meningkatkan kompetensi dan jiwa kewirausahaan siswa sekolah menengah kejuruan. *Prosiding Seminar Nasional Pendidikan Teknik Boga Dan Busana*, *6*(1), 1–13. https://journal.uny.ac.id/index.php/ptbb/article/view/30889

Sudiyatno, S., Sampurna, Y., & Siswanto, I. (2013). Pabrik pengajaran di SMK ST Mikael Surakarta. *Jurnal Taman Vokasi*, *1*(1). https://doi.org/10.30738/jtv.v1i1.134

Sudiyono, S. S. (2020). Teaching factory sebagai upaya peningkatan mutu lulusan di SMK. *Jurnal Penelitian Kebijakan Pendidikan*, *12*(2), 159–181. https://doi.org/10.24832/jpkp.v12i2.271

Suhartini, Y., Muchlas, M., & Kuat, T. (2022). Kompetensi kewirausahaan kepala sekolah dalam mengembangkan edupreneurship di sekolah menengah kejuruan. *Jurnal Pendidikan Dan Konseling (JPDK)*, *4*(5), 4833–4849. https://doi.org/10.31004/jpdk.v4i5.7395

Suryana, S. (2008). *Kewirausahaan pedoman praktis: Kiat dan proses menuju sukses*. Salemba Empat.

Torun, H., & Tumen, S. (2019). Do vocational high school graduates have better employment outcomes than general high school graduates? *International Journal of Manpower*, *40*(8), 1364–1388. https://doi.org/10.1108/IJM-11-2017-0314

Yunanto, D. (2017). Implementasi teaching factory di SMKN 2 Gedangsari Gunungkidul. *Vidya Karya*, *31*(1), 29–36. https://doi.org/10.20527/jvk.v31i1.3971

HASIL CEK_Jurnal Pendidikan Vokasi

ORIGINALITY REPORT

13%	11%	8%	4%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.ajhssr.com Internet Source	1%
2	journal.staihubbulwathan.id Internet Source	1%
3	www.bircu-journal.com Internet Source	1%
4	Supari Muslim. "THE IMPLEMENTATION TEACHING FACTORY AND IMPLICATIONS ON THE PREPARATION OF CANDIDATES FOR VOCATIONAL HIGH SCHOOL TEACHERS", Humanities & Social Sciences Reviews, 2019 Publication	1%
5	journal.unismuh.ac.id Internet Source	1%
6	repository.ustjogja.ac.id Internet Source	1%
7	staffnew.uny.ac.id Internet Source	1%
8	Submitted to IAIN Bukit Tinggi Student Paper	

		<1 %
9	ijicc.net Internet Source	<1 %
10	files.eric.ed.gov Internet Source	<1 %
11	www.scribd.com Internet Source	<1 %
12	journal.fkm.ui.ac.id Internet Source	<1 %
13	pinpdf.com Internet Source	<1 %
14	Sintha Wahjusaputri, Bunyamin Bunyamin. "Development of teaching factory competency-based for vocational secondary education in Central Java, Indonesia", International Journal of Evaluation and Research in Education (IJERE), 2022 Publication	<1 %
15	Reni Muhitasari, Agustina Sri Purnami. "Manajemen Pembelajaran Teaching Factory dalam Mewujudkan Jiwa Kewirausahaan pada Siswa", Media Manajemen Pendidikan, 2022 Publication	<1 %
16	Submitted to Universitas Negeri Malang Student Paper	<1 %

17	repo.iain-tulungagung.ac.id Internet Source	<1 %
18	eprints.ums.ac.id Internet Source	<1 %
19	ppjp.ulm.ac.id Internet Source	<1 %
20	journal2.um.ac.id Internet Source	<1 %
21	search.blossom.com Internet Source	<1 %
22	www.appptma.org Internet Source	<1 %
23	Sunardi Sunardi. "Pengelolaan Praktik Kerja Industri di Sekolah Menengah Kejuruan Muhammadiyah 1 Sukoharjo", Manajemen Pendidikan, 2017 Publication	<1 %
24	eprints.umk.ac.id Internet Source	<1 %
25	ijern.com Internet Source	<1 %
26	vm36.upi.edu Internet Source	<1 %
27	"Cyber Defence in the Age of AI, Smart Societies and Augmented Humanity", Springer	<1 %

	Science and Business Media LLC, 2020 Publication	
28	E Diwangkoro, Soenarto. "Development of teaching factory learning models in vocational schools", Journal of Physics: Conference Series, 2020 Publication	<1 %
29	ejurnal.mercubuana-yogya.ac.id Internet Source	<1 %
30	embiss.com Internet Source	<1 %
31	icolais.ui.ac.id Internet Source	<1 %
32	id.123dok.com Internet Source	<1 %
33	repository.kisti.re.kr Internet Source	<1 %
34	www.ilomata.org Internet Source	<1 %
35	www.journal2.uad.ac.id Internet Source	<1 %
36	Nicky Estu Putu Muchtar, Imam Suprayogo, T Supriyatno. "The Implications of Religious Tolerance and Nationalism Values at Islamic Boarding School", AL-ISHLAH: Jurnal Pendidikan, 2021	<1 %

Publication

Exclude quotes	On	Exclude matches	Off
Exclude bibliography	On		