



Teaching Factory-Based Learning Management in-State Vocational High School 4 Mataram

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Abstract

The purpose of this study is to analyze the planning, implementation, supporting factors, and inhibition of the successful implementation of teaching factory learning (TEFA) in State Vocational High School 4 Mataram. This study uses a qualitative approach descriptive method with the case study. Data collection techniques through observation, interview, documentation. Data analysis is conducted with data reduction measures, data presentation, and conclusion drawing, as well as checking the validity of data using credibility, transferability, dependability, and affirmability. The results showed: 1) teaching factory-based learning planning following applicable rules and procedures ranging from preparation, needs analysis, decision making, program planning, and fulfillment of teamwork program plans; 2) the implementation of TEFA-based learning is carried out with two patterns, namely: a) teaching factory learning in the school environment; b) TEFA learning in an industrial environment; (3) supporting factors; a) good partnership with IDUKA, Professional Association, LSP P-1, and stakeholders, b) curriculum meets SKKNI and based on local wisdom, c) the level of teaching factory learning is at level 4 (PBET) with rotation system, and e) professionally certified teachers; 4) inhibitory factors: a) have not implemented block system schedule; b) the number of teachers is still limited; c) insufficient silverware space and equipment; d) no technopark yet.

Keywords: *Management; Principal; Teaching Factory; State Vocational High School*

Introduction

Vocational education has caused structural problems that resulted in a lack of relevance to the Industrial World, The Business World, and the World of Work (IDUKA), the development of stagnant courses, formal legal educational tools tend to limit the creativity of program developers and more seem to shy away from "change" (Hasbullah, 2010). State Vocational High School problems have been a concern of the government, IDUKA community, and at least since the 1990s until now is still a hot discussion related; (1) the waiting period for graduate work, (2) high unemployment rate, (3) the quality of vocational school graduates, and (4) competency and certification system. Based on the curriculum changes of 1993/1994 based on consideration of new adjustments in law N0. 2 the year 1989 on the National Education System, PP No. 29 of 1990 on secondary education or vocational school, and other considerations that occur in the employment, development, and trends that will occur in the future.

Therefore, the implementation of the 1994 curriculum and the 1999 Curriculum Supplement emphasize more on competency-based learning that everything is determined based on consideration of achievement of abilities that must be mastered by graduates.

Depdiknas, (2009); Khurniawan, et al (2016); Tilaar and Nugroho, (2016), mentioned that among the indicators of the success of vocational schools are when: the intertwining of relationships with IDUKA with the formation of a community relations team in a solid education unit, the realization of cooperation in the form of polls with stakeholders, as well as the realization of a "Memorandum of Understanding" (MoU) between schools and industries by involving the government, the realization of inter-student exchange programs, principals and industry internships for students and teachers. Thus, this is an opportunity as well as a big challenge to improve the quality of education units (State Vocational High School) to prepare qualified human resources through cooperative relationships with various parties in meeting the demands of IDUKA along with the arrival of "demographic bonuses". The period is expected to materialize in 2030-2040. The demographic bonus is that the population is of productive age, the population of this productive age is greater than the population of unproductive age. The productive age population is predicted to appear as much as 64 percent and will be projected to reach 297 million people out of the total population.

Therefore, as revealed by Billett, (2011) vocational education experts mentioned the real steps in the implementation of vocational schools to obtain competitive human resources, namely: *"(1) the need for skilled workers, (2) a more educated youth, and (3) the engagement of young people with civil society"*. This means that a young man with skilled workers, a broader education, and participation with civil society is required. Thus, the core of the development of educational programs, and vocational training emphasizes more on the fulfillment of the competence of students. The competencies referred to by Burke, (2005), Reksoatmodjo (2010) are *"Competency: statements describe outcomes expected from the performance of professionally related functions, or those knowledge, skills, and attitudes thought to be essential to the performance of those functions"* means competency is a show of work displayed to produce something through the relevant profession, with another sense that, competence is an accumulation of a set of knowledge, skills, and attitudes that are important in certain areas of expertise to increase the availability of skilled medium-sized workers based on industry standards, procedures and quality.

On this basis in 2000, Vocational High School began to develop production units in the simplest form as a learning platform. The purpose of the implementation of the Vocational High School production unit is explicitly mentioned in the Decree of the Minister of Education No. 0490/U/1992 article 29, to improve the quality of graduates, the ability of educational personnel, and autonomously increase education financing. According to Tovvey (1997) stated that the school production unit is a characteristic of vocational schools, as a differentiator with other schools, this unit is used as a training vehicle for students in providing hands-on experience in business activities, to become an independent human being and have an entrepreneurial spirit. The training system developed and integrated at the time was "competency-based training" (CBT).

Departing from the historical and juridical concept of Vocational High School implementation continues to be developed. In 2005, vocational schools began to focus on industry-based education and training which then expanded again into 3 (three) development periods, namely; (1) development of simple industrial-based vocational schools, (2) development of developing industrial-based vocational schools, and (3) development of industrial-based vocational schools that develop in the form of factories as places of study. In 2011, the Directorate of Vocational Development collaborated with the German government through the TVET SED program that developed the concept of a teaching factory. The concept of a teaching factory in Indonesia is the result of the adaptation of the dual system learning method that was successfully applied in TVET education in Germany and Switzerland (Khurniawan, et al

2016). This model integrates two main environments in each student's activities. The environment in question is the school environment and the industrial environment.

According to Cahyaningrum and Hery (2019), Risnawan, (2019), Jariah (2019), and Sema. et al (2001) over time, the implementation of teaching factory learning almost penetrated all vocational schools located in the territory of Indonesia, with management innovations that display their characteristics. Facts in the field show that the teaching factory can gradually be able to answer the problems that occur today. This is characterized by the increasing ability of students in producing products with industry standards and quality, the absorption rate of graduates is increasing, and the accountability of vocational schools is increasingly recognized.

Based on the observations of State Vocational High School 4 Mataram today, it is one of the oldest Vocational High School of 19 (nineteen) vocational schools on the island of Lombok that opens education and training services especially in the field of gastronomy. Therefore, in the period that has passed and currently the school can improve effective governance in improving learning services. This is characterized by the achievements in field competitions such as (1) champion hope Tata Boga cooking Student Competency Competition National Year 2012; (2nd champion of hope I cooking "ASC" in 2015 2013; (33rd winner of the National LKS cooking food competition in 2013; (4) the first winner of the national competition, the Year 2013 in Denpasar; (5) 4th winner of national cooking food in LKS Year 2015; (6) champion of hope I cooking catering LKS National Year 2016; (7) 3rd winner of national LKS cooking food in 2017; (8) 3rd winner of national cooking food in NTB; and (9) 3rd place cooking catering LKS national level on the line Year 2020. Based on the data above obtained information that, State Vocational High School 4 Mataram in a row in the last two years gained third place through the implementation of the National Student Competency Competition and in the same year the higher the success of graduates showed that the management of teaching factory learning is more effective in improving the skin of learning. There may be adequate management support as the results of previous research conducted by Riadi, et al., (2020) which show that "*State Vocational High School 4 Mataram has a commitment to the development of human resources for educators and education staff through various excellent programs to improve and develop the competence and professionalism of educators and education staff*".

Based on the description, the problem of this research can be formulated: (1) how to plan *teaching factory* learning at State Vocational High School 4 Mataram?; (2) how to plan *teaching factory* learning at State Vocational High School 4 Mataram?; (3) what factors are supporting the implementation of *teaching factory* learning State Vocational High School 4 Mataram?; and (4) what factors are supporting the implementation of *teaching factory* learning State Vocational High School 4 Mataram? The objectives that are expected in this study are: (1) learning planning *teaching factory* at State Vocational High School Negeri 4 Mataram; (2) learning *teaching factory* at State Vocational High School 4 Mataram; (3) know the supporting factors of *teaching factory* learning implementation at State Vocational High School 4 Mataram; and (4) factors inhibiting *teaching factory* learning at State Vocational High School 4 Mataram.

Methodology

In this case, researchers used a qualitative approach to descriptive methods through case studies. Data collection in qualitative research background is carried out through observation activities, interviews, and document studies. The observation is conducted by observing the school environment, observation of student practice learning, observation of competency test of students' expertise, observing entrepreneurial activities of learners, as well as a practice room, facilities, and infrastructure, as well as products produced in learning based on *teaching factory*. The interview was conducted by the question and answer with primary data sources, namely: Principal, Vice Principal of Curriculum, Vice Principal

for Public Relations, Vice Principal of Facilities and Infrastructure, Head of Skills Program, Head of Teaching factory Team, and productive teacher (competency of expertise) Of Tata Boga.

Studi documentation is done by looking at and reviewing documents related to the topic and focus of research such as implementation report *teaching factory*, Learning Implementation Plan, *job sheet*, learning schedule, rotation system learning model, implementation of Competency Test Skills, MoU schools with Stakeholders, and IDUKA, RAPBS, as well as photos of activities. To improve understanding of social situations or phenomena, problems to answer all research questions, in conducting interviews, observations and studies of research documentation using 2 (two) types of source triangulation techniques and techniques in an integrated manner, then conduct descriptive analysis, recheck the data through several stages of testing, namely testing: credibility, transferability, dependability, and affirmability.

Data collection in qualitative research background is carried out through observation activities, interviews, and document studies. The observation was conducted by observation of the school environment, observation of student practice learning, observation of Competency Test of expertise of learners, observing entrepreneurial activities of learners, as well as the practice room, facilities, and infrastructure, as well as products produced in teaching factory-based learning. The interview was conducted by the question and answer with primary data sources, namely: Principal, Vice Principal for Curriculum, Vice Principal for Public Relations, Vice Principal for Facilities and Infrastructure, Head of Skills Program, Head of Teaching factory Team, and Duru productive (competency expertise) Tata Boga. Documentation studies are conducted by looking at and reviewing documents related to the topic and focus of research such as teaching factory implementation report, Learning Implementation Plan, job sheet, learning schedule, rotation system learning model, implementation of Competency Test Skills, School MoU with Stakeholders, and IDUKA, RAPBS, and photos of activities. To improve the understanding of social situations or phenomena, problems to answer all research questions, in conducting interviews, observations, and studies of research documentation using 2 (two) types of triangulation techniques and techniques in an integrated manner, then conduct descriptive analysis, recheck the data through several stages of testing, namely tests: credibility, transferability, dependability, and affirmability. Thus, it will be seen the similarity of data in the field with the focus of research, that is what the findings on the background of qualitative research.

Result and Discussion

State Vocational High School 4 Mataram is a high school that has opened services in the field of education and training with various advantages and various skills professions, including a) pre-service training: High school education program, aimed at enthusiasts in the field of Tourism and Business Management. b) in-service training: Specific education program to develop professionalism and expertise for practitioners in the field of Product and Service Industry. The education program is in the form of education and training which includes; fashion skills programs, beauty, and 2 (two) skills programs that have integrated and developed teaching factory-based learning are culinary skills programs (catering) and hospitality and tourism services. The implementation of teaching factory development in State Vocational High School 4 Mataram is based on the text of the cooperation agreement No. 2015/D5.3/KU/2018, dated April 25, 2018, between Officials of Commitment Makers of Provision and Improvement of Vocational High School Services, SUBDIT Curriculum Directorate of Vocational Development and Head of State Vocational High School 4 Mataram.

George and Leslie in his book *Principle of Management*, dubbed by Ticoalu, (1999) suggest that management is a series of work processes involving elements of communication, coordination in the form of guidance or direction to colleagues towards organizational goals. Gary in his book *Leadership in*

Organizations, seventh edition" dubbed by Cahyani, (2017), suggest that management is a process or effort in achieving organizational goals carried out in an organized manner, through cooperation with other parties. Management is always related to the life of social organizations in which some leaders and subordinates have the responsibility of carrying out operational activities.

To achieve the objectives of effective learning management based on the grand design signs of teaching factory and technopark development in 2016 that leads to the fulfillment of national education standards, it is necessary to govern or manage systematically and logically in terms of planning, and implementation and know the supporting factors and inhibitions.

Teaching Factory Learning Planning at State Vocational High School 4 Mataram

Based on the results of the study, in organizing school planning in teaching factory learning activities carried out are as follows;

First, preparing by coordinating, forming a work team, making guidelines for analysis of needs then, 1) estimating and calculating the learning needs of teaching factories as opposed to the results of School Self Evaluation by identifying problems in the implementation of vocational services in the previous year based on SWOT analysis guided by the ISO 9001:2008 reference framework, so that all aspects of teaching factory learning run well following the ideal that has been mentioned in the grand design in the implementation of teaching factory in State Vocational High School 4 Mataram. planning is carried out jointly through the school's internal team; 2) assess or analyze the needs of planning activities at least meet some indicators that must be met to support teaching factory learning including a) learning with industrial atmosphere; b) the use of silverware in industrial standard kitchen space; c) learning that produces products with processing standards and industry quality; d) build entrepreneurial spirit in producing processed bakery and pastry products; e) conduct promotions and sales using social networks; f) receive orders; and g) delivery; 3) decision making through internal meetings of principals with the team so that it becomes a package of a work program plan for teaching factory learning implementation.

Second, fulfillment of the work program plan of teaching factory learning implementation. The fulfillment of this program plan includes: 1) environmental conditioning, facilities, facilities and infrastructure; a) improvement of the workshop of food that includes: structuring the practice space in accordance with the field of interest in the competence of culinary expertise such as processing, food presentation, pastry products and bakery air ventilation arrangements, sanitation, lighting, cold room, improvement "Cafe Pastry and Bakery"; b) revitalization of equipment includes repair and replacement of equipment components for the manufacture of products such as: *sweet, bread, soft roll, croissant, danis*; c) environmental arrangement, the creation of a garden in the area of the learning implementation room *teaching factory*; and d) the creation of the web site State Vocational High School 4 Mataram as a forum for promotion of the results of teaching factory learning practice products, 2) build partnerships through the MoU with IDUKA (Aston Inn Hotel and Hotel Lombok Raya), Professional Association namely Indonesia Chef Association "ICA" BPD West Nusa Tenggara, and LSP-P1 namely State Vocational High School 1 Praya; 3) alignment of curriculum based on local wisdom and fulfilling SKKNI; 4) the creation of syllabus, Teaching Factory Learning Program Plan, and Job Sheet validated by IDUKA, and the Professional Association; 5) the creation of rotation system schedule and 6) development of Teaching Staff Resources through "On The Job Training" or intern teachers at Aston Inn Hotel which is attended by two teachers of gastronomy competency for one month and "Off Job Training" training in the form of workshops for all teachers competency of tata skills held in schools.

Implementation of Teaching Factory Learning at State Vocational High School 4 Mataram

The implementation of TEFA learning at State Vocational High School 4 Mataram has been designed in the Learning Planning Plan based on scientific learning standards with TEFA learning models. RPP consists of two learning level models including; **first**, including the 4th level job sheet called the level (PBET), and **secondly**, the 4th level job sheet called the level (TEFA). The similarity between RPP with job sheet model level 4 (four) and job sheet level 5 (five) is a demonstration displayed by students is equally produce products with industry standards and quality, while the difference from both where job sheet level 4 (four) learners have been able to receive orders of simulation products sourced from the internal school, producing products and sales for residents in the school environment only, while RPP with job sheet level 5 (five) learners have been able to design pastry and bakery products based on market share, conduct promotions through social networks in the form of sales of existing products based on the picture in the menu list of products that have been prepared (ready Stock) or perform services by receiving orders in advance (open order), producing products ordered, quality control products up to delivery orders (delivery).

The Design of Learning Program both of job sheet model, each implemented in the process of teaching factory learning that occurs in two different environments namely; a) the internal environment of the school includes: 1) teaching factory learning that occurs in the classroom/kitchen by integrating using job sheet level 4 (four), 2) teaching factory learning through entrepreneurial activities in Café Pastry and Bakery integrating job sheet level 5 (five), and b) teaching-learning factory that occurs in the external environment of the school (industry/hotel) integrates the learning program plan to a higher level that is job sheet level 7 (seven) adjusts to the needs that exist in the place that lasts for 6 (six) months from the drop to the withdrawal to the school. More details can be seen in Table 01.

Table 1 Learning Level Achievement *teaching factory* State Vocational High School 4 Mataram

No.	Learning Level	Job Sheet Material	Place of Implementation
1	level 1	CBT Focusing basic engineering knowledge	Classroom learning
2	level 2	CBT Focusing work planning	Classroom learning
3	level 3	PBET Grouping basic mastery of competencies based on work standards	Classroom learning
4	level 4	PBET Grouping to apply competence, emphasis on innovation, based, production to the extent of internal fulfillment of schools	Learning in the kitchen
5	level 5	TEFA Focusing on implementing competencies, which emphasize innovation, for the external fulfillment of schools with limited production	Learning at Cafe Pastry and Bakery
6	level 6	TEFA Grouping to apply competencies, emphasize process management/production and mass production	Learning outside of school (industry/hotel)
7	level 7	TEFA Focusing on implementing competencies, emphasizing product sales and adjustments	Learning outside the school (industry/hotel)

For the fulfillment of the competence of learners through teaching factory learning, the implementation is guided by the learning schedule that has been designed in the one-year program described in the semester program. To support the adequate use of facilities, facilities, and tools, in the implementation of TEFA learning, State Vocational High School 4 Mataram applies a rotational learning system or learning with a rotation system. The technical implementation of teaching factory learning through entrepreneurial activities in Café Pastry and Bakery was carried out after school through the division of groups and schedules arranged in turns every day except Sundays.

To measure the achievement of students' competence through teaching factory learning for one year for class XII (twelve), State Vocational High School 4 Mataram conducts learning evaluation activities through the Skill Competency Test (UKK) which begins with the implementation of UKK simulation in advance as a form of enrichment and preparation in implementing UKK held by the school in collaboration with the assessor team from IDUKA, and Professional Certification Body-P1 (State Vocational High School 1 Praya). Indicators of Competency Achievement (GPA) of students are prepared by the LSP P-1 team based on The Indonesian National Work Competency Standard (SKKNI)). The scheme or order of certification of competency expertise in State Vocational High School 4 Mataram include: a) food and drink services; b) manufacture of non-alcoholic beverages; c) the manufacture of Indonesian food; d) the manufacture of continental food; e) manufacture of pastry products 1 (one); f) manufacture of pastry products 2 (two). The activity was carried out for one week using a rotation system, with 77 participants who had met the criteria set by the school.

The assessment conducted by assessors in the UKK guided by: (a) the assessment sheet, according to competency characteristics, is based on performance, performance, products produced by students; (b) in assessor assessment provides competency achievement for each component, and provides an opportunity to repeat several components that reach the standard within a predetermined time limit. The criteria for achieving competency results from UKK through the LSP P-1 implementation scheme in its certification do not bring up scores. The determination of the score of the participants is determined by the number of repetitions performed, the fulfillment of the set time standards, and aspects of attitude shown by the learners. Determination of graduation in UKK if the student reaches a minimum score of 70.

Supporting Factors of Teaching Factory Learning at State Vocational High School 4 Mataram

The supporting factors of teaching factory learning at State Vocational High School 4 Mataram are as follows: a) curriculum developed and through the process of alignment with the curriculum with IDUKA and professional associations guided by the fulfillment of SKKNI and Graduate Competency Standards as well as local content-based curriculum; b) have competent and certified food industry educators

Teaching Factory Learning Inhibition Factors at State Vocational High School 4 Mataram

The factors inhibiting teaching factory learning at State Vocational High School 4 Mataram are as follows: a) the integration of learning with the scheduling of block systems; b) not yet the maximum of the local government in providing New Building Unit to support the teaching factory in State Vocational High School 4 Mataram, and c) the absence of technopark in State Vocational High School 4 Mataram.

According to Kompri, (2014) Management is always related to social organizations where there are groups of people occupying various levels of leadership and another group of people whose responsibility is to organize operational activities. This view is very basic because the success of a principal who occupies a managerial position is no longer measured by the skills of organizing operational activities but rather from the skills and ability to mobilize others in the organization. According to Alma, (2014) the management room of the principal is not only within the organization but with the destructive era has changed the scope of the principal's managerial competence in a more developed direction such as; management that usually occurs in schools today is done outside the school, the orientation of learning is emphasized more on the development of human relations, and in addition to its management in the scope of the organization but now the principal grouped on the management of learning. According to Mulyasa

(2007), the principal is the leader in charge of micro-education management, which is directly related to the learning process in schools.

The findings of this study expand again that not only management standards, in general, are considered for the progress of a school but consider the legal aspects in organizing its operational activities but also a concern, aspects of the school's self-condition, Human Resources (HR) and other resources. Human resources are aspects that must be fulfilled by the school as well as other aspects as conveyed by Khurniawan, et al (2016) that the ideal aspects are referred to such as aspects of learning programs, facilities, silverware activities, partnerships, products, and services, and aspects of openness. This is similar to the results of previous research that stated that the management of the school itself if done professionally then teaching factory learning can run effectively (Jariah, 2019).

Therefore, in terms of planning the principal in teaching factory learning has been running effectively, however, it still needs to be developed especially in the planning of work programs related to the program: the development of facilities such as the addition of silver stick space to support the effectiveness of the teaching factory learning process, considering the availability of practical rooms is not yet following the ratio of the number of students to 287 people, as well as the number of teachers as many as 6 (six) people, not to mention the allocation of time for vocational interest content subjects in the curriculum spectrum in 2018 as much as 3,030 hours.

Whereas according to Khurniawan, et al (2016) workload converted from 24 hours/week/one competency to 24 hours/week/one portion of workload with the ratio of teachers and students carrying out the theory learning in class should be 1 teacher: 36 students with an allocation of 24 hours of learning/week, while for silver learning at the workshop is 1 teacher/instructor: 10 Students with an allocation of time 8 hours/week, then the use of manual tools with a ratio of 1 teacher/instructor: 16 students and the allocation of time as much as 12 hours/week.

Therefore, in this study the findings are not fulfilled between the number of students, the number of teachers, the facilities of the practice room, with the availability of time allocation, so that teaching factory learning at State Vocational High School 4 Mataram is still in a transitional position that is between levels 4 (four) PBET. To be able to reach a higher level of job sheet State Vocational High School 4 Mataram should implement a block scheduling system. Block scheduling system which is one of the characteristics in the implementation of PBET learning and teaching factory in vocational schools as conveyed by Khurniawan, et, al (2016) another characteristic of PBET and teaching factory is silver activities in the block system continuously, meaning that the block system means practices implemented over a long period, for example, 1-2 weeks of practice and 1 week of theoretical learning tailored to the skills program. With the planning of the development of this block system, it is expected that TEFA learning can be further improved to a higher level in stages, namely from level 5 to level 7.

Based on the results of this study there is a similarity of research conducted by Indriturrahmi and Sudiyatno (2016) to the role of IDUKA in the implementation of local wisdom-based vocational schools in Mataram city is in terms of (a) the implementation of dual system education for students in the industry/hotel goes well; (b) industry as an apprenticeship for teachers; (c) the industry is involved in the UKK; and (d) IDUKA support in curriculum development with the fulfillment of SKKNI standards As for the difference in the results of the current research in State Vocational High School 4 Mataram are; (a) there is no regulation that binds the ability of IDUKA as a place of distribution of graduates; (b) there has been no impact of revitalization programs, especially in the provision of New Building Units (UGB) from local governments that are more adequate.

Cahyaningrum and Agus (2019) stated that management in teaching factory learning is two things that cannot be separated in supporting the creation of the atmosphere, environment, and industrial culture

in schools. The relationship between the two has other impacts such as school accountability towards IDUKA is increasingly recognized so that graduates are absorbed properly following SKKNI, (Risnawan, 2019).

Therefore, this fact requires State Vocational High School 4 Mataram to be able to align and balance the units in the micro-education system concerning inputs, processes, and outputs, as described by Haris (2017) "The headmaster, should pay more attention to balance the input, process, and output in the process of teaching factory based...". This means that schools should balance inputs, processes, and graduates into teaching factory-based learning.

Conclusion

Based on the results and discussion concluded that to optimize the management of teaching factory learning in State Vocational High School 4 Mataram is by doing; a) analysis of needs that may increase the effectiveness of learning to a higher level of Job Sheet through the block system schedule; b) optimization of cooperation with stakeholders for the procurement of supporting facilities new building units (UGB) more representative, and institutional technopark school support teaching factory learning; and c) fulfillment of teachers competency of more adequate gastronomy.

References

- Alma, B. (2014). *Manajemen Pemasaran dan Pemasaran Jasa*. Bandung: Alfabeta.
- Billett, Stephen. (2011). *Vocational Education*. New York: Springer Science and Business Media.
- Burke, John. (2005). *Competency-Based Education and Training*. London: Taylor & Francis: Falmer Press.
- Cahyaningrum Nur & Agus Heri, S.I. (2019). *Implementation of learning Teaching Factory Clothes in State Vocational High School 3 Malang*. *Advances in Social Science, Education and Humanities Research, volume 406 2nd International Conference on Social, Applied Science, and Technology in Home Economics (ICONHOMECES 2019)* -<http://creativecommons.org/licenses/by-nc/4.0/>: Atlantis Press.
- Depdiknas. (2003). *Undang-Undang RI Nomor 20, Tahun 2013*. Sistem Pendidikan Nasional. Jakarta: Depdiknas.
- Depdiknas. (2009). *Permendiknas No.28, Tahun 2009, tentang Standar Kompetensi Kejuruan Sekolah Menengah Kejuruan (SMK)/Madrasah Aliyah Kejuruan (MAK)*.
- George Terry, R. dan Leslie W. Rue. (1999). *Dasar-dasar Manajemen*, terjemahan. G. A. Ticoalu. Jakarta: Bumi Aksara.
- Haris, Abdul. (2017). *Learning System Management Based on Teaching Factory in Indonesia*. *Journal of Advanced Research in Social Sciences and Humanities*, Volume 2, issue 4 (237-248). DOI: <https://dx.doi.org/10.26500/JARSSH-02-2017-0402>

- Hasbullah. (2010). *Implementasi Pabrik Pengajaran (teaching factory) untuk meningkatkan kompetensi siswa SMK. Seminar Internasional, ISSN 1907-2066. Peran LPTK dalam Pengembangan Pendidikan Vokasi di Indonesia.*
- Jariah, Ainun. (2019). *Manajemen Teaching Factory di SMK Negeri 1 Barabai.* Proceeding Seminar Nasional PS2DMP ULM Vol 5 No 2.
- Keputusan Menteri Pendidikan Nasional Nomor 162/U/2003. Tentang Pedoman Penugasan Guru Sebagai Kepala Sekolah.
- Khurniawan, A. W., & Haryani, Tri. (2016). *Grand Design Pengembangan Teaching Factory dan Technopark SMK.* Jakarta Pusat: Direktorat Jenderal Pendidikan Dasar dan Menengah Kementerian Pendidikan dan Kebudayaan Republik Indonesia Kompleks Kementerian Pendidikan dan Kebudayaan RI.
- Kompri. (2014). *Manajemen Sekolah Teori dan Praktek*, Bandung: Alfabeta.
- Mulyasa, Edi. (2014). *Manajemen Berbasis Sekolah*, Bandung: Rosda.
- Reksoatmodjo, T., N. (2010). *Pengembangan Kurikulum Pendidikan Teknologi dan Kejuruan.* Bandung: PT Refika Aditama.
- Riadi, S., Sukardi, & Hakim, M. (2020). *Human resources management in Middle School Vocational State 4 Mataram.* International Journal of Multicultural and Multireligious Understanding ISSN 2364-5369.
- Risnawan. (2019). *Manajemen Teaching Factory dalam Upaya Pengembangan Mutu Pembelajaran di SMK Muhammadiyah 1 Prambanan.* Media Manajemen Pendidikan Volume 2 No. 1 Juni 2019 p- ISSN: 2622- 772X e- ISSN: 2622- 3694.
- Sema E Alptekin, Pouraghabagher Reza, McQuaid Patricia & Waldorf Daniel. (2001). *Teaching factory, Proceedings of the 2001 American Society for Engineering Education Annual Conference & Exposition.* San Luis Obispo, 3563.
- Tilaar, Henry. A. R & Nugroho, R. (2016). *Kebijakan Pendidikan: Pengantar Untuk memahami kebijakan pendidikan dan kebijakan pendidikan sebagai kebijakan publik.* Yogyakarta: Pustaka Pelajar.
- Tovvey, Michael, D. (1997). *Competency-Based Training.* NTL Institute for Applied Behavioral Science.

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