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Productive Laboratory Management of Agribusiness Processing Agricultural Products in Developing Students' Entrepreneurship Attitudes in Vocational Schools

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Abstract

Education is the most important part that determines the progress of a nation. One of the levels in national education is the SMK (Vocational High School) level which is one of the educational institutions that is expected to be able to produce faithful and pious human resources who have the abilities, skills and expertise as well as character. Research on productive laboratory management in fostering entrepreneurial attitudes of students at SMK in Cianjur district uses a qualitative research approach that describes and analyzes events that aim to describe and reveal and explain events based on case studies. Data collection techniques used were interviews, observations, literature studies, which were focused on obtaining data unity and conclusions. . In this study there are several data collection techniques that will be used, namely: 1) Interview, 2) Observation, 3) Documentary Study, and 4) Triangulation. The purpose of planning learning programs in productive laboratories is to instill entrepreneurial attitudes in students from an early age, carry out learning that emphasizes and trains entrepreneurial attitudes in practical learning in especially productive laboratories for Agribusiness Processing of Agricultural Products (APHP). The work program of the Entrepreneurial Printing School which is synergized with activities in the APHP laboratory is going well, starting from planning, programmed in the RKAS, implementation which is supported by the location of the school which is close to government agencies as a potential market in marketing student entrepreneurship products, and monitoring evaluation from the head school.

Keywords
Management, Productive laboratory, Entrepreneurship Attitude, Vocational School

Education is the most important part that determines the progress of a nation. The Indonesian nation has determined the goals of its national education, namely the intellectual life of the nation and the development of the whole Indonesian human being, namely human beings who believe in and are devoted to God Almighty and have noble character, have knowledge and skills, are physically and spiritually healthy, have a strong and independent personality and sense of social and national responsibility. In essence, education aims to shape the character of someone who believes and fears God.

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To achieve maximum results, Vocational Schools develop productive laboratories as places for student practice that are adapted to the real world of business and industry. Therefore, effective, optimal and efficient laboratory management is needed to achieve learning objectives at Vocational High Schools. As mandated in the national education goals, students are not only required to have knowledge and skills, but also to have independent character. Therefore, it is hoped that effective laboratory management can also foster and increase student independence, which in the challenges of today and in the future requires an entrepreneurial attitude as a major capital for students to be independent in society.

In accordance with Presidential Instruction No. 9 of 2016 concerning Revitalization of Vocational Schools, to further strengthen the program to improve the quality of vocational graduates, the Ministry of Education and Culture has established National Vocational Education Standards through Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 34 of 2018 (SNP SMK). In SNP 2 SMK, the competency standards for SMK graduates cover 9 competency areas which include aspects of character (soft skills), technical competence and entrepreneurship. One of the levels in national education is the SMK (Vocational High School) level which is one of the educational institutions that is expected to be able to produce faithful and pious human resources who have the abilities, skills and expertise as well as character. In the learning process at SMK, more emphasis is placed on increasing the expertise and skills of students in a particular field, which is commonly referred to as productive subjects. In Permenpan No. 3 of 2010 Chapter 1 Article 1 explains that, a laboratory is an academic support unit in an educational institution, in the form of a closed or open room, permanent or mobile, managed systematically for testing, calibration and/or production activities on a limited scale, using equipment and materials based on certain scientific methods, in the context of implementing education, research, and/or community service

Prosser & Quigley (1950) stated that vocational education will be effective if the equipment, machines, and work assignments are in accordance with the environment in which graduates will work. Equipment support that is relevant to the industry, which is in a productive laboratory, and the arrangement of the learning environment in accordance with the work environment in industry and learning programs that are in accordance with the tasks to be carried out in the industry are important factors in achieving competence for SMK graduates. This proves the importance of a productive laboratory in the learning process at SMK.

According to Emda (2014: 4) in outline the functions of the laboratory are as follows:

1. provide completeness for the lessons that have been received so that theory and practice are not two separate things.
2. provide scientific work skills for students / students.
3. provide and cultivate the courage to seek the nature of scientific truth of an object in the natural environment and social environment.
4 ncrease skills in using available tools and media to seek and find the truth.
5. Fostering students' curiosity as a capital for the scientific attitude of a prospective scientist.
6. Fostering and fostering self-confidence as a result of skills acquired, discoveries obtained in the process of laboratory work activities.

According to the Ministry of Education and Culture, the aim of procuring laboratories is to improve the practical abilities of students in the laboratory. The purpose of using a chemistry/science laboratory for students includes:

1. Develop skills (observation, data recording, use of tools, and making simple tools). Students who carry out learning activities in the laboratory can practice individual
2. Practicing careful work, as well as knowing the limits of laboratory measurement capabilities. In laboratory learning, many learning activities have standard sizes and measurements, thus training students' accuracy in learning.

3. Practice the accuracy of recording and clarity of reporting the results of experiments. In the laboratory, it requires students or students to be more thorough, train literacy and communicate the results of experiments or products in the laboratory.
4. To train critical, analytical thinking through experimental interpretation. Experiment-based learning in the laboratory trains students to think critically and analytically because it is related to data collection.
5. Deepen knowledge. Students studying in the laboratory also simultaneously increase their knowledge and psychomotor abilities.
6. Develop honesty and a sense of responsibility. Students are trained to be responsible and work according to the data obtained.
7. Train planning and carrying out and further experiments using existing materials and tools. Train students in carrying out good planning according to the materials and tools in the laboratory.

According to Permendikbud No. 5 of 2021 and Permendikbud No. 11 of 2020 concerning DAK Assistance for Agribusiness Laboratory for Processing Agricultural Products or what is commonly called RPS (Student Practice Room). RPS Agribusiness Processing of Agricultural Products (APHP) with its complete equipment, is one of the supports for learning productive subjects in the APHP Expertise Competency.

Research Methods

Research on productive laboratory management in fostering entrepreneurial attitudes of students at SMK in Cianjur district uses a qualitative research approach that describes and analyzes events that aim to describe and reveal and explain events based on case studies.

Research Engineering

Data collection techniques used were interviews, observations, literature studies, which were focused on obtaining data unity and conclusions. In this study there are several data collection techniques that will be used, namely: 1) Interview, 2) Observation, 3) Documentary Study, and 4) Triangulation. Data collection instruments as a reference in data collection are arranged in the form of data collection grids and research questions. The research grid is made in tabular form as well as the researc

The research will be conducted using the case study method, which describes productive learning practice activities at SMK (Case studies at SMKN 2 Cilaku and SMKN PP Cianjur). To obtain comprehensive and in-depth data, several data collection techniques are needed.

In this study there are several data collection techniques that will be used, namely: 1) Interview, 2) Observation, 3) Documentary Study, and 4) Triangulation. Data collection instruments as a reference in data collection are arranged in the form of data collection grids and research questions. The research grid is made in tabular form as well as the research questions.

Results and Discussion

Planning

According to the Principal of SMKN 2 Cilaku, the purpose of planning a learning program at the APHP productive laboratory is to instill an entrepreneurial attitude in students from an early age. This is in accordance with Kurniawan's statement (2022) in an entrepreneurship education webinar organized by the Middle School Directorate of the Ministry of Education and Culture (2022), by instilling an entrepreneurial spirit from an early age, students can create various creative and innovative ideas, and are critical in seeing an opportunity to start entrepreneurship which of course has a honesty and responsibility.

Entrepreneurship education provided in educational units can be the starting point for preparing students to develop their potential and be ready to face the world of work in the future. Good planning starts with setting goals and vision: Determine long-term goals and visions to foster students' entrepreneurial attitudes in the laboratory. These goals and visions must be clear and measurable so as to provide a clear direction for activities in the laboratory. In addition, planning should be

able to identify needs and resources.
Identify what needs must be met to foster students' entrepreneurial attitudes in the laboratory, such as equipment, subject matter, instructors, and others. Ensure needed resources are available and accessible to students.
Then plan relevant lessons by making lesson plans that are in accordance with the goals and vision that have been determined. Consider the entrepreneurial skills you want to develop, such as problem solving, creativity, collaboration, etc. Make interesting and interactive plans to motivate students.
Next provides clear guidance, by providing clear guidance to students regarding learning objectives, steps to be followed, and expected results. This guide will help students understand the lesson.
Finally, by encouraging collaboration and innovation, by providing space for students to work collaboratively and innovate. Encourage them to work in groups or teams, share ideas, and inspire each other. Provide opportunities for students to develop new ideas and explore innovative solutions.

Execution

In practice, the school principal stated that the management of the APHP laboratory at SMKN PP Cianjur was carried out in accordance with the school program, and was determined in the school's RKT and RKJM. This is in accordance with Sutar (2019) that schools must make, as follows:

a) Medium Term Work Plan (RKJM) which describes the goals to be achieved within 4 years relating to the quality of graduates to be achieved and improvement of components that support improving the quality of graduates.
b) The Annual Work Plan (RKT) stated in the School Activity and Budget Plan (RKAS) which is implemented based on the Medium Term Work Plan (RKJM).

Assessment

Formative assessment according to the Chairman of APHP SMKN PP Cianjur's competency skills is an assessment that is carried out at the beginning and during the practicum. This is in accordance with Abidin (2016) which states that formative assessment is an activity of teachers and students intended to monitor student learning progress during the learning process. This assessment will provide feedback for improving learning programs, identifying and reducing errors that require improvement. And summative assessment is an assessment activity that produces a value or number which is then used as a decision on student performance9. This assessment activity is carried out if the unit of learning experience or all of the subject matter has been completed. Summative assessments are used to determine award classifications at the end of a course or program. Summative assessment is designed to systematically record student overall achievement.

Trouble

According to the Chairperson of APHP SMKN 2 Cilaku's competency skills, teachers need additional experience for apprenticeships in industries related to APHP skill competencies. This is in accordance with Fauzan (2022) which states that productive vocational teacher internships in industry are expected to run effectively so that they can increase the professionalism of productive vocational teachers in carrying out their duties, especially introducing the work climate and aligning competency standards according to the demands of the industrial/business world that must owned by teachers and informed to their students in SMK, so that the quality of learning that is relevant to the needs of the industrial/business world can be achieved.

Solution

To overcome the problem of human resources, equipment and laboratory costs in fostering student entrepreneurial attitudes, according to the statement by the Head of SMKN PP Cianjur who is always focused on seeking assistance from the Central and Regional Governments to increase new sources of financing other than BOS and BOPD, both in the form of central and regional assistance. DAK assistance, especially assistance with practical tools in the APHP laboratory. We can use the aid funds, in addition to tools, also for:

1. Staff training and development: Funds can be used to train existing staff in

entrepreneurship education, laboratory management and human resource management. By increasing the skills and knowledge of staff, they will be able to provide better guidance.
2. Collaboration with external parties. We can find out if there are organizations or companies that are willing to work together in developing student entrepreneurship programs. They may be able to provide the necessary human resources, tools, and costs.
3. Increased use of technology. We use technology to support student entrepreneurial activities. For example, you can use applications or software to manage laboratory inventory, plan activities, and track student results.
4. Collaboration with the community:. We can involve the local community in helping to overcome the problem of human resources, tools, and costs. There may be members of the community who have specific knowledge or resources that can be used to support student self-employment programs.
6. Internship program and industrial cooperation. We work with related industries to provide internship programs for students. Industry may be able to provide the tools and human resources needed, while students can learn directly from experienced practitioners.

Results

By enforcing laboratory rules, students become more disciplined, as evidenced by the implementation of practical learning in the APHP laboratory that always looks orderly and the process runs seriously. Also the use of laboratory equipment facilities, in fact supports the increase in insight and entrepreneurial attitude of students, regarding the use and skills of using tools in the APHP laboratory.

The results of this study are in accordance with Amalia (2021), Discipline greatly influences learning outcomes because with students who are disciplined in school rules, these students will also have a disciplined attitude in learning such as studying on time, being disciplined in following lessons students can achieve good learning outcomes optimal. According to anonym (2023), the objectives of practical learning are as follows:

a. improve students' ability to real conditions in the field,
b. add insight into information and train students' mindsets to be able to explore problems, which will then be analyzed and sought for solutions in an integral and comprehensive manner,
c. broaden students' general insights about the orientation of technology development in the future so that they are expected to be able to realize the reality that exists between the theory given in class and the tasks faced in the field,
d. provide solutions to existing problems in practice.

Conclusion

By using the interview triangulation method with the Principal, Head of Skills Competency, and APHP productive teachers, both at SMKN 2 Cilaku and SMKN PP Cianjur, SMKN 2 Cilaku includes carrying out learning that emphasizes and trains entrepreneurial attitudes in practical learning in especially productive laboratories Agribusiness Product Processing Agriculture (APHP). The work program of the Entrepreneurial Printing School which is synergized with activities in the APHP laboratory is going well, starting from planning, programmed in the RKAS, implementation which is supported by the location of the school which is close to government agencies as a potential market in marketing student entrepreneurship products at SMKN 2 Cilaku, and continuous evaluation of monitoring from school principals. In accordance with the role of a leader who must have a clear vision and mission, but also must be accompanied by strong implementation and execution.

In addition, at SMKN PP Cianjur, an Entrepreneurial Printing School was also implemented which was echoed by the West Java Provincial Education Office. The program is budgeted for in the RKAS, although with inadequate infrastructure facilities, where APHP's productive laboratories are still united

between production, processing and packaging laboratories. The existence of a market day program every Friday also adds to and trains the entrepreneurial spirit of students at SMKN PP Cianjur.

The system used in schools is in accordance with theological values, namely the values of believing in God and carrying out His commands in planning to implementing teaching and learning activities at SMKN 2 Cilaku and SMKN PP Cianjur. In addition, there is a physiological value, namely the efforts of schools and students to try their best in learning in APHP's productive laboratories. And there is an ethical value of mutual respect between students and their teachers, and teleological values with very efficient and beneficial learning activities for students.

As well as the existence of logical values applied by students, by understanding the processes carried out in participating in learning and practicum in the APHP laboratory. As well as the existence of aesthetic value in the application of increasing the entrepreneurial attitude of students, by organizing exhibitions or market days at schools.

Bibliography

Alfianto. E. (2012). Entrepreneurship: A Community Service.

Amalia, N. (2021). The Influence Of Student Discipline On Learning Outcomes In Class Xi Creative Products And Entrepreneurship Class At Smk Stb Depok. Aufklarung: Journal of Education, Social and Humanities Vol. 1 No. 2, Sept. 2021

Arikunto, S. and Yuliana, L. (2008). Education Management. Yogyakarta: Aditya Media.

Arisena, G.M.K. (2022). Entrepreneurship Diktat.

Asmani, J. (2015). Effective Management of School Marketing. Yogyakarta : Diva Press Publisher.

Bahri. (2019). Introduction to Entrepreneurship. Yogyakarta: New Press Library.

Cashmere, (2011). Entrepreneurship. Depok : Rajawali Press Publisher.

Daryanto. (2018). School Laboratory Management. Yogyakarta : Gava Media Publisher.

Depdikbud, RI, Indonesian General Dictionary, Jakarta: Balai Pustaka, 1989, p. 243. 8 A. Mangunhajana, Development of Meaning and Method, Yogyakarta: Kanisius, 1991, p. 12. 1

Emma, A. (2014). Laboratory As a Means of Learning Chemistry in Improving Knowledge and Scientific Work Skills. Lanthanide Journal, Vol 2 No 2.

Gunawan, I. (2019). Management of Tool and Material Management in the Microbiology Laboratory. Journal of Educational Laboratory Management. I(1) 2019, 19-25, e- ISSN : 2654-251X.

https://blog.deprintz.com/5-peran-kepemimpinan-memimpin-change-in-the-company/

https://ditsmp.kemdikbud.go.id/tanamkan-jiwa-entrepreneur-sejak-dini-direktorat-smp-gelar-webinar-dinding-kewirausahaan/

https://hedisasrawan.blogspot.com/2016/05/hasil-manajemen-artikel-lengkap.html?m=1

https://ppmschool.ac.id/dinding-management/

https://www.duniapelajar.com/2012/04/09/pengertian-pembinaan-menurut-psikologi/

https://www.gurusiana.id/read/fauzanmohamad/article/magang-guru-antara-kewajiban-formal-dan-kewajiban-substnasi-1474044

https://www.studocu.com/en-us/document/universitas-negeri-padang/kewirausahaan/

Indrawan, I. et al. (2020). Educational Laboratory Management. Pasuruan: Qiara Media.

Joint Decree of the State Minister for Cooperatives and SMEs and the Minister of National Education No. 02/SKB/MENEG/VI/2000 and No. 4/U.SKB/2000 dated 29 June 2000 concerning Cooperative and Entrepreneurship Education. The objectives of the SKB are (a) to socialize and develop cooperatives and entrepreneurship through education,

Kerasetda. (2020). Development of Entrepreneurial Spirit / Entrepreneurship among the Young Generation

Law No. 20 of 2003 concerning the National Education System, Article 3.

Lestari, NAAU. 2020. Solutions to Increasing Entrepreneurial Interest and Reducing Barriers to Student Entrepreneurial Interest. Journal of Management and Business, Volume 1 No 1, 2020.

Lindawati, M. Lilis, and Suyanto. (2015). The role of school cooperatives in increasing the entrepreneurial attitude of students at SMK Negeri 1 Wonogiri. Journal of IPS Education Volume 2, No 2, September 2015 (170-180) http://journal.uny.ac.id/index.php/hsjpi

Minister of Education and Culture No. 15 of 2018 concerning Fulfilling the Workload of Teachers, Principals, and School Supervisors.

Minister of Education and Culture No. 36 of 2018 concerning curriculum structure

Muldayanti, N.D. (2021). Laboratory Management as Supporting Biology Science Teaching and Learning Activities. Widya Laksana Journal, Vol 10 No 2, August 2021.

Novitasari, E. Fundamentals of Management Science. Bandung : Unicorn Publisher

Nurhadi. A. (2018). Laboratory Management in Efforts to Improve the Quality of Learning: Scientific Journal of Education Management. Vol. 4 No. 01, June 2018, 1-12 (2018) Tarbawi.

Pancasila and the 1945 Constitution of the Republic of Indonesia.

Permendiknas No. 63 of 2009 concerning Education Quality Assurance,

Permendiknas number 13 of 2007 concerning school/madrasah principal standards.

Podomoro University. (2021). Basic Knowledge About Entrepreneurship / Entrepreneurship.

Presidential Instruction No. 4 of 1995 concerning the National Movement to Socialize and Cultivate Entrepreneurship.

Rohman, M. and Amri, S. (2012). Education Management. Analysis and Solutions for Classroom Management Performance and Effective Teaching Strategies. Jakarta : PT. Library Achievement.

Rusmini.R.(2014).http://digilib.iain-palangkaraya.ac.id/644/3/BAB%20II%20telaah%20%28RU%29.pdf

Sallis, E. (2002). Total Quality Management in Education. Yogyakarta ; Diva Press Publisher.

Saputra, K. Entrepreneurship-Based Education. Yogyakarta: Diva Press Publisher.

Sugiyanto, Lenia W. (2022). Lab Management Journal https://id.scribd.com/doc/217750744/Manajemen-Lab.

Sukmadinata, N. (2016). Educational Research Methods. Bandung: Youth Publisher Rosda Karya.

Sukman. (2017). Entrepreneurial Spirit and Entrepreneurial Values Increasing Business Independence Through Entrepreneurial Behavior. Volume 20 No. 1, April 2017 . Faculty of Economics, Muria Kudus University.

Sulthoni, M. (2021). Strategy for Organizing Practicum and Management of Educational Laboratories in the Electrical Engineering Undergraduate Study Program. Journal of Educational Administration. Bandung : Journal of UPI.

Susanto, I. (2017). Correlation of Laboratory Management Capabilities and Learning Outcomes in Laboratory Management Courses. Journal of Educational Research Volume 23(2): 80-85, 2017 .

Sutar. Drs (2019). School Development Plan. Jakarta: Directorate of GTK Kemdikbud

Suyanta, (2010). Laboratory Operational Management. Department of Chemistry FMIPA, Yogyakarta State University.

The President's speech at the 2010 National Summit has mandated the need to promote an entrepreneurial spirit and educational methodology that further develops entrepreneurship.

Vision, Mission of the Governor of West Java