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Improving the Quality of Vocational High School Graduates Through Partnership Models with Industry

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Abstract: The quality of Vocational High School graduates is considered insufficient and does not meet the requirements for performing high-skill jobs, leading to the highest open unemployment rate compared to other education levels. A preliminary study conducted in several Vocational High Schools with machining competency fields in Lhokseumawe found a systematic empirical phenomenon. Graduates are unable to meet the industry's needs, resulting in difficulties in entering the workforce in line with current conditions. This research specifically aims to find a partnership model for vocational high schools with machining competencies in facing the 4.0 disruption era. The importance of this research is to develop a partnership model between Vocational High Schools and industry in both quality and quantity, requiring optimal management. Therefore, continuous studies are needed to maximize management in partnership relations so that the quality of vocational education continues to improve. This research uses a qualitative approach with a case study method. Data analysis follows the Miles & Huberman model, which consists of data collection, data presentation, data reduction, and conclusion. The research results show that an effective partnership model should include continuous collaboration between educational institutions and industry, appropriate training programs, and internship opportunities to provide practical experience. Routine evaluation and adjustment of this model will ensure that the partnership remains relevant and beneficial amid the rapid changes in the 4.0 disruption era.

Keywords: Financial; good school governance; vocational education

1. Introduction

Vocational High Schools are a secondary education program focused on strengthening vocational education with the aim of preparing graduates who do not continue to higher education to be more ready to enter the workforce, in accordance with the competencies they possess in their field. Therefore, the curriculum implemented in vocational schools is designed differently from that applied in general secondary schools. Since the focus is on training students in specific job skills, the teaching materials and learning system in vocational schools emphasize practical aspects, predominantly related to psychomotor skills.

Until now, vocational education still faces challenges in both qualitative and quantitative alignment. Qualitative alignment issues arise because technological developments in industries are advancing rapidly, leading to a gap in the competencies required by the industry. Meanwhile,

quantitative alignment issues occur due to the imbalance between the number of job opportunities in the industrial sector and the number of graduates seeking employment [1]. The imbalance between the number of job seekers and the available job opportunities has become a classic problem, particularly among job seekers with Vocational High School qualifications [2].

On the other hand, the quality of vocational high school graduates is considered insufficient, with many not meeting the qualifications for high-skill jobs. Similarly, in Aceh Province data shows that vocational high school graduates contribute the most to the open unemployment rate, with details as follows: Vocational High Schools 10.55%, Bachelor's degree 6.53%, Diploma 7.27%, Junior High School 4.76%, and Elementary School 2.88% [3].

One of the efforts that must be immediately undertaken is to build a collaborative pattern between Vocational High Schools and the business/industrial intensively. Several school activities always involve the industrial world, such as industrial work practices, on-the-job training, industry visits, and teaching factories. However, sometimes the involvement of business/industrial is minimal because they often have a pragmatic mindset focused on business profits [4]. The gap between education and employment will widen if the skills required by workers do not align with the needs of business/industrial. To narrow this gap, education must incorporate the expectations of business/industrial. Reveals that schools need to adopt an approach that engages business/industrial in developing the planning, implementation, and evaluation of teaching programs so that vocational high school graduates become competent workers [5]. The absorption of Vocational High Schools graduates into the workforce faces various challenges, including a very low readiness for work mentality, even though the technical skills required for the job are generally well mastered [6].

Problems in the management of Vocational High Schools that have not been thoroughly resolved include: 1) The low quality of learning in Vocational High Schools due to the weak implementation of curricula that align with the competencies required by the workforce, the limited availability of qualified productive teachers, insufficient educational facilities and infrastructure, and challenges in assessment systems and quality assurance; 2) The difficulty in obtaining industry partners business/industrial that have the capacity to accommodate students and align with the schedules for industrial work practices. In terms of obtaining business/industrial, issues often encountered include: (a) a mismatch between the skill programs taught to students in schools and the work performed at business/industrial, and (b) inadequate duration for prakerin, which hinders the full achievement of the required competencies; 3) The suboptimal management and governance of Vocational High Schools operations [7-9].

This study specifically aims to find a partnership model between Vocational High Schools in the field of mechanical engineering expertise and the business/industrial in facing the challenges of the 4.0 disruption era. The importance of this research is to develop a partnership model between Vocational High Schools and business/industrial in both quality and quantity, which requires optimal management. Therefore, a continuous study is necessary to maximize management in the collaborative relationship, ensuring that the quality of vocational education continues to improve.

2. Materials and Methods

This research is a qualitative descriptive study with a case study approach. This approach was chosen because the study uses all types of information from facts that are described in narrative form. Data sources in this study were determined using purposive sampling. Based on the criteria set, the data sources or informants in this research are the school principal, the vice principal of curriculum, the vice principal of public relations, the head of the mechanical engineering expertise program, productive teachers from Vocational High Schools 7 Lhokseumawe, and leaders from the business and industrial sectors in Lhokseumawe.

The instruments used in this research include interview guidelines and documentation guidelines. Data analysis begins with data validity. The criteria for qualitative data validity are

credibility, transferability, dependability, and confirmability. The techniques used to validate the data include source triangulation and technique triangulation. After continuous data triangulation to reach data saturation, the next step is data analysis using the Miles & Huberman (1998) model, which follows four steps: data collection, data presentation, data reduction, and drawing conclusions & verification [10].

3. Results and Discussion

The implementation of the partnership program between Vocational High Schools 7 Lhokseumawe and the business/industrial includes several activities: (1) Training provided by the business/industrial one week before exams, such as finishing exams. The school submits a proposal to DU/DI requesting finishing training; (2) Industrial Work Practice is a work activity conducted in the business or industrial world to improve the quality of Vocational High Schools graduates. The goal is to prepare students with the skills needed to enter an increasingly competitive job market; (3) Alumni recruitment is substantial at companies and industries in the Lhokseumawe city and North Aceh regency areas, which annually recruit potential workers from Vocational High Schools.

The relationship between the school and the business/industrial is built through alumni promotion and products. The procedure for organizing partnerships with the business/industrial at Vocational High Schools begins with the Vice Principal for Public Relations and the Graduate Career Center planning activities for alumni tracking and creating drafts of alumni tracking and marketing plans. If not approved by the school principal, the proposal will be revised. The Vice Principal for Public Relations then socialize these plans to the graduates and collect forms where the data analysis is based on the classification of whether graduates will continue their studies or enter the workforce. The Public Relations team establish relationships with business/industrial through job fairs, visits, the internet, or phone calls. Then, the Vice Principal for Public Relations prepare a recruitment schedule and coordinate with the school principal and vice principal for curriculum to ensure the recruitment activities align with the school's agenda. Then sends students who pass the selection to DU/DI and inputs data on the students who have been placed, followed by evaluating the alumni tracking and marketing activities.

However, the partnership implementation between the school and business/industrial faces several obstacles and challenges, including: the partnership program not being fully optimized, the work units not aligning, the memorandum of understanding (MoU) not fully realized, unclear partnership activity types, a lack of commitment from both the school and business/industrial in executing the collaborative programs, and competition among industries reducing student involvement in production processes.

Despite these challenges, there are opportunities in the partnership, such as: school involvement in the production process through Teaching Factory, updating technology according to industry needs, aligning student competencies with industry demands, and increasing graduate absorption into the industry.

Vocational High Schools partnership with business/industrial follows specific success indicators, including: (1) At least 80% of alumni are absorbed into business/industrial within four months after graduation; (2) A confirmation of internship placements aligning with the students' expertise is provided at least one month before starting the internship; (3) Establishing collaborations with at least three universities to broaden students' perspectives; (4) Developing certification schemes in Mechanical Engineering Expertise. These quality goals are used Vocational High Schools to remain focused on improving graduate quality.

The collaboration between Vocational High Schools and the business/industrial in the teaching and learning process is carried out through several activities:

1. Gaining information about the job market relevant to the competencies offered at the school. Both teachers and students can adjust the teaching process according to real-

world conditions, such as using jobsheets, materials, and new technologies, which are then implemented in lessons, helping students develop skills as expected by the industry.

2. Internship placements. The business/industrial partners contribute to the teaching process indirectly by providing students with real-world work experience during their internships, which are part of the curriculum's requirements to assess their skills.
3. Teaching by Factory. The teaching factory model helps bridge the competency gap between school-taught knowledge and industry requirements. It is an extension of the school's production unit, using a partner's industrial system to provide real-world work experience. The goal is to develop students' character and work ethic (discipline, responsibility, honesty, teamwork, leadership, etc.), which are critical in the industrial world, while also improving the quality of learning by focusing on production-based training rather than just competency-based training.

The findings of this research aim to propose a partnership model between Vocational High Schools in mechanical engineering expertise and the business/industrial in facing the 4.0 disruption era. The partnership model design considers theoretical partnership patterns, needs analysis, and problem-solving. Several key indicators, as components of the model, were analyzed to create a feasible partnership design that can achieve the objectives of the collaboration.

4. Conclusions

Effective partnership model should include ongoing collaboration between educational institutions and industries, relevant training programs, and internship opportunities to provide practical experience. Regular evaluation and adjustments to this model will ensure that the partnership remains relevant and beneficial amidst the rapid changes occurring in the 4.0 disruption era.

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