Development Of A Pre-Industrial Field Work Training Model To Increase Student Readiness In Carrying Out PKLI at TKRO Vocational Middle School At Bina Satria Vocational School Medan

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Abstract. The objective of this study is twofold: (1) ascertain the viability of the pre-PKLI training model at SMK Bina Satria Medan's TKRO Vocational School in enhancing students' preparedness for the implementation of PKLI; and (2) evaluate the efficacy of the pre-PKLI training model in achieving the same outcome at secondary schools. Medan's Bina Satria Vocational School hosts TKRO Vocational. This is R&D research conducted in accordance with the Borg and Gall model of development. One material expert, one learning media expert, one learning design expert, and sixty students from class XI of SMK Bina Satria Medan T.A 2023/2024 comprised the participants in this study. The training model, the student response scale to the training model, and student learning outcomes assessments comprise the subjects of this study. The findings of the study indicate that (1) the material expert test achieves an excellent classification rate of 88%, (2) the training model expert test achieves a very good classification rate of 92.94%, and (3) the learning design expert test achieves an outstanding classification rate of 97.35%. The findings derived from testing a hypothesis establish the viability and efficacy of the pre-PKLI training model, as well as demonstrate a statistically significant distinction in learning outcomes between students who utilized the pre-PKLI training model and those who did not. This is demonstrated by the calculated value of t in the test results derived after performing data processing: 10.691. At a substantial extent ($\alpha = 0.05$) with df 58 obtained ttable = 1.167 so that tcount > ttable for practical results obtained t calculated price = 11.023. significant level ($\alpha = 0.05$) with dk 58 obtained ttable = 1.167 so tcount > ttable. In the set of students who do not utilize the pre-PKLI training model, the average effectiveness of learning outcomes is 68%, compared to 85% for those who utilize the pre-PKLI training model.

Keywords: Pre-Practical Training Model, Industrial Culture, Automotive basics

1 Introduction

As a result of the changes brought about by the advancement of science and technology, numerous problems in human existence can now only be resolved through the mastery and improvement of these fields. Vocational High Schools (SMK) are designed to cultivate proficient personnel who possess a wide range of work-related skills and are abreast of technological and scientific advancements. This is as defined in Article 15 of the National Education System Law of 2003, which states: "Vocational schooling is a form of secondary education that primarily equips students for employment in specific industries." As part of their mission to prepare and cultivate high-caliber students, vocational schools implement the

ICIESC 2023, October 24, Medan, Indonesia

DOI 10.4108/eai.24-10-2023.2343056

Dual System Education (PSG) program, also known as practicum practice (PKL) in the 2013 curriculum. Fieldwork practice is an educational approach that operates beyond the confines of traditional classroom settings, encompassing real-world scenarios within corporations or industries. Dual System Education (PSG) is an instructional approach that integrates vocational skills training with education in a synchronized and systematic manner. It combines academic programs in schools with work mastery programs with the following objectives: generate employees equipped with professional skills, enhance and fortify connections and alignments between vocational training educational institutions and the labor market, optimize the efficiency of the educational process and ensure a workforce of high professional caliber, and develop receptive and knowledgeable personnel. [1]

The PSG paradigm distinguishes between two settings of operation: educational institutions (referred to as school-based learning) and the workplace (called work-based learning). One of the departments belonging to the engineering department at SMK Bina Satria Medan is the Department of Automotive Light Vehicle Engineering. Students must have a foundational understanding of automotive light vehicle engineering, with a particular emphasis on automotive fundamentals during PKLI, in order to develop and refine their abilities in the industry. In accordance with observations made during the implementation of PKL, specifically the application of field work practices to class formality at Bina Satria Private Vocational School. As a location for PKLI, indicators of curriculum and industrial material synchronization for vocational school students have not been implemented. Students continue to engage in PKLI activities beyond the purview of the Brand Holder Sole Agent (ATPM). Students' intention in instituting PKLI, which was to provide an accurate depiction of the actual conditions at IDUKA, has not been realized. Curriculum competency standards (KI and KD) are not yet aligned with industry requirements, and teacher competency-building training has not been optimally implemented. Teachers' understanding of the work culture in industry remains limited, and students are generally resistant to being assigned to PKLI locations far from home; this sentiment is also shared by the students' parents. Consequently, students' knowledge of industry technology and work culture remains inadequate, and the school's facilities and infrastructure are insufficient to accommodate the technology available in industry. Lastly, the school endorses the formation of a memorandum of understanding (MoU) with industry.

Industry-based education or learning can be defined as a concept of on-the-job training or fieldwork practice, which is a competency with a competency standard objective expressed in the form of outcomes in the workplace by defining the knowledge, skills, work attitudes, and applications necessary for all positions within an organization or industry that places a premium on educational institution quality. In light of the fact that this will impact your future career, there is no harm in being concerned with vocational institutions that offer a PKL program if you aspire to be among the students who graduate as competent professionals.

According to the author, SMK Bina Satria Medan could benefit from the creation of a pre-PKLI training model that enhances students' preparedness for PKLI implementation. This model would not only assist schools in preparing facilities and infrastructure, but also student competencies, particularly in the domain of industrial culture and fundamentals. Furthermore, it could inspire students to pursue PKLI implementation in the real world. Automobile fundamentals for students in order to improve the quality and effectiveness of PKLI implementation. The purpose of this study is to increase students' readiness to implement PKLI at the TKRO Vocational High School at SMK Bina Satria Medan through the development of a pre-PKLI training model.

2 Theoretical Study

2.1 Industrial Work Practices

Field work practices, when implemented, will indirectly impart work-related knowledge and experience. In addition to imparting job-searching skills, industrial practice teaches students how to secure employment that is personally satisfying and in line with their individual interests and abilities. As stated by Hamalik [2] , Fieldwork practice, also known as on-the-job training in academic settings, is a training model designed to equip workers with the requisite skills for a specific occupation in accordance with the ability requirements of the workforce. This is extremely beneficial for students' readiness to adapt and enter the workforce, as it enables them to meet the demands of the workplace. Fieldwork practice, formerly referred to as dual system education, combines classroom-based instruction and training with practical application in the business world to ensure that the skills acquired in the classroom correspond to the requirements of the workplace. [3].

2.2 Vocational Education

When viewed from a systemic perspective, vocational education is classified as a subsystem of the education system. "Experts have put forth numerous definitions of vocational education, and these definitions evolve in accordance with societal expectations and perceptions of the role it ought to fulfill."[4]. According to [3], "The long history of development in Indonesia has given rise to the diversity of understanding and all its implications among society with regard to technological and vocational education," it is stated. Vocational education has incorporated technology education into its evolution. "Vocational" is the equivalent term in a foreign language for vocational education; therefore, vocational education will encompass what is referred to as "vocational education" in other nations. On the contrary, an education system that yields technicians as graduates, irrespective of the specific field of study, will be comparable to what is referred to as "technical education" in other nations.".

3 Research Method

This research is a development (Research & Development), which was developed by Borg & Gall [5]. the type of research developed by Borg and Gall [6]. Moreover, educational R&D research comprises the following ten stages: (1) Information gathering and research; (2) Strategic planning; (3) Preliminary product development; (4) Preliminary field testing; (5) Revision of the main product; (6) Main field testing; (7) Revision of the operational product; (8) Operational field testing; (9) Revision of the final product; and (10) Distribution and implementation.

The participants in this study were students. The subject of the study is fieldwork practice material.

It is possible to use the developed model to determine whether the pre-PKLI model is effective, practical, and valid. In order to ascertain the validity of this study, a panel of experts with experience evaluating training model products, including learning designs and materials, was assembled. The criterion for determining whether learning media is "valid" is whether it meets both the minimum and maximum levels of validity. According to Akker[7] Practicality is

attributed to a learning model that satisfies the following criteria: all validators must have furnished a product evaluation that is applicable and implementable.

4 Research Result

The following conclusions can be drawn from research concerning the development of a pre-PKLI training model to increase student readiness for PKLI implementation: (1) The efficacy of the pre-PKLI training model in enhancing students' preparedness for the implementation of PKLI at SMK Bina Satria Medan is confirmed; (2) However, there is evidence of improper utilization of the aforementioned model.

This is demonstrated by the validation results of material experts, design experts, and model experts for the pre-PKLI training model's feasibility test to increase student readiness for PKLI implementation: the average validation result for material experts is 88%, the average validation result for design experts is 97.35%, and the average validation result for expert models is 92.94%. Evaluations conducted by material experts, design experts, and model experts indicate that the pre-PKLI training model, which aims to enhance students' preparedness for PKLI implementation, falls within the excellent category and merits experimental consideration.

Moreover, regarding the percentage of expert validation test results on the pre-PKLI training model to enhance students' preparedness for PKLI implementation, it is documented that 94.44% of assessments of subject matter aspects fall within the very good category, while 92.94% of assessments fall within the very good category for learning model aspects. On average, 97.35% of assessments fall within the very good category for learning model aspects. The overall assessment achieves an average of 94.91% in the "very good" category.

Based on the findings of the post-data analysis, the control group, which did not utilize the pre-PKLI training model to enhance students' preparedness for PKLI implementation, achieved an average learning outcome score of 68.00. In contrast, the experimental group, which implemented the pre-PKLI training model to improve students' readiness for PKLI implementation, achieved an 85.00 average learning outcome score, with a classical completeness of 100%.

Conclusion

The following conclusions are drawn from research regarding the development of a pre-PKLI training model to increase student readiness for PKLI implementation: The pre-PKLI training model implemented at SMK Bina Satria Medan to enhance student preparedness for PKLI implementation is both appropriate and flawed in execution.

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