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Workshop on the Implementation of Project-Based Learning Based Independent Curriculum Teaching Tools for Vocational Teachers throughout Manggarai Regency

Marianus Tapung*
UNIKA Indonesia St. Paul Ruteng, Indonesia
Email: unikamarianustapung@gmail.com

ABSTRACT

The objective of the workshop conducted in Manggarai Regency was to enhance the competency of Vocational High School (SMK) educators in implementing Project Based Learning (PjBL)-based Curriculum Merdeka teaching tools. This initiative aimed to augment teachers' comprehension and proficiency in facilitating meaningful learning experiences within their classrooms. The workshop adopted a participatory approach wherein teachers actively engaged in designing, executing, and evaluating project-based learning activities pertinent to their specialized domains. By doing so, they were equipped with practical skills to navigate challenges such as time management, assessing learning outcomes, and effectively managing project-based classrooms. Furthermore, the workshop fostered a collaborative learning milieu that not only addressed immediate obstacles but also prepared students for the complexities of the modern workforce. The analysis of post-workshop feedback unveiled several noteworthy findings. Participants demonstrated a commendable grasp of independent curriculum concepts, proficiency in analyzing curriculum documents, and a reflective stance towards best practices. They also exhibited a strong understanding of the PjBL model, its impact, and strategies for its seamless integration into the Independent Curriculum framework.The evaluation, based on a 1-4 scale, indicated that participants rated aspects such as understanding the PjBL model, integrating it with learning challenges, and planning PjBL-based teaching projects quite positively, falling into the "already good" category with an average score of 3.6. However, areas related to testing PjBL-based teaching tools received a lower rating of 3.2, suggesting room for improvement.

KEYWORDS *Curriculum Merdeka, Project Based Learning, workshop, vocational teacher, implementation.*

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INTRODUCTION

This study delves into the significance of implementing Project Based Learning (PjBL) strategies within the educational framework, particularly focusing on Vocational High School (SMK) settings in Manggarai Regency. In recent years, there has been a growing recognition of the limitations of traditional teaching methods, especially in vocational education, where practical skills and real-world application play pivotal roles in students' career readiness. One of the primary motivations for adopting PjBL approaches stems from the need to foster deeper understanding and meaningful learning experiences among students. The conventional lecture-based approach often falls short in engaging students actively and developing critical thinking, problem-solving, and collaboration skills essential for success in today's dynamic workforce. Recognizing this gap, educators and policymakers have increasingly turned to innovative pedagogical methods like PjBL to bridge the theory-practice divide and cultivate a more holistic learning environment.

The specific context of Manggarai Regency underscores the relevance and urgency of implementing PjBL-based strategies in SMKs. These schools cater to students with diverse backgrounds and aspirations, including those aiming for technical and vocational careers. As such, the curriculum must align with industry demands, technological advancements, and the evolving needs of society to ensure graduates are well-equipped for the challenges and opportunities they will encounter in their professional journeys.

However, despite the theoretical benefits of PjBL, its effective implementation poses practical challenges that need to be addressed. These challenges include but are not limited to time constraints, aligning projects with curriculum standards, assessing student performance, and providing adequate teacher training and support. Without overcoming these hurdles, the full potential of PjBL in enhancing student engagement, motivation, and skill development remains unrealized. Hence, this study aims to explore the implementation of PjBL-based Curriculum Merdeka teaching tools in SMKs in Manggarai Regency. By investigating the experiences, perceptions, and outcomes of educators and students involved in PjBL initiatives, this research seeks to identify best practices, challenges, and areas for improvement. The findings are expected to contribute valuable insights to educational policymakers, school administrators, and teachers, guiding future strategies for integrating PjBL effectively into vocational education curricula.

The implementation of the Independent Curriculum refers to Permendikbudristek No. 5 of 2022, Permendikbudristek No. 7 of 2022, Permendikbudristek No. 262/M/2022, amendments to Kemendikbudristek No. 56/M/2022 concerning Guidelines for Curriculum Implementation in the Framework of Learning Recovery. It also contains the structure of the Independent Curriculum, rules related to learning and assessment, the Peancasila Student Profile Strengthening Project, and teacher workload, the decision of the Head of BSKAP No.008/H/KR/2022 related to Learning Outcomes in Early Childhood Education, Primary Education, and Secondary Education, in the Independent Curriculum. Furthermore, the decision of the Head of BSKAP No.009/H/KR/2022 is related to

the Dimensions, Elements, and Sub-Elements of the Pancasila Student Profile in the Independent Curriculum, and contains explanations and stages of development of the Pancasila Student Profile that can be used in the Pancasila Student Profile Strengthening Project (Situmorang et al., 2023).

Circular Letter No. 0574/H.H3/SK.02.01/2023 which contains the follow-up of the Ministry of Education and Culture and Technology No. 262/M/2022 concerning Amendments to the Ministry of Education and Culture and Technology No. 56/M/2022 concerning Guidelines for Curriculum Implementation in the Framework of Learning Recovery. In this decision, it is stated that education units can implement the Independent Curriculum gradually according to their respective readiness. In this decision, there are three options for implementing the Independent Curriculum for education units that choose to use the Independent Curriculum in 2023/2024 (Pasaribu, 2023), namely: Mandiri Belajar, where education units apply several principles of the Independent Curriculum in the implementation of learning and assessment but still use the curriculum of the education unit that is being implemented; Mandiri Change, where education units use the Independent Curriculum in developing the curriculum of their education units and apply them in carrying out learning and assessment; Mandiri Berbagi, where education units use the Independent Curriculum in developing their education units and apply them in carrying out learning and assessment with a commitment to share good practices with other education units.

The introduction of the Merdeka Curriculum is important as part of the transformation of education in Indonesia. The Merdeka Curriculum emphasizes more contextual, collaborative, and competency-based learning (Purwanti &; Nurwati, 2023). Of course, this requires an innovative and relevant learning approach to the needs of the times. Changes in the digital age and globalization require graduates who not only have academic knowledge, but also relevant practical skills (Shopie Azizah et al., 2021). Project-based learning has been shown to be effective in developing critical thinking, collaborative, communication, and problem-solving skills, all of which are essential skills in the world of work. Vocational teachers have an important role in preparing students for the world of work. However, to implement the Independent Curriculum with a project-based learning approach, they may need more in-depth debriefing, training, and support (Rizki &; Fahkrunisa, 2022). This includes an understanding of the concept of the Independent Curriculum, the use of educational technology, the development of teaching equipment projects relevant to the industrial world (TEFA: Teaching Factory) (Dwijayanthi &; Rijanto, 2022), and the ability to design and evaluate project-based learning.

Workshops are an effective method of providing training and debriefing to teachers. Through workshops, teachers can be directly involved in active learning, share experiences and knowledge, and get direct feedback from facilitators and peers. This workshop aims to provide a deep understanding of the concept and implementation of the Independent Curriculum with a project-based learning approach to SMK teachers throughout Manggarai Regency. Through the workshop, it is expected that SMK teachers in Manggarai can develop the skills and knowledge

needed to design, implement, and evaluate effective and relevant project-based learning.

Based on BPS data in 2022, there are 322 Vocational High Schools (SMK) in NTT, and 15 vocational schools in Manggarai with a total of 11,403 students, and the number of teachers is 571 people (Fuad &; Metarum, 2021). Of the 15 vocational schools in Manggarai, since the implementation of the Independent Curriculum, 100% have implemented the Mandiri Belajar scheme in 2022, and in 2023 will use the Mandiri Ubah scheme. In order to introduce and increase understanding of the implementation of the Independent Curriculum, there is an education unit. in collaboration with Muyarawah Subject Teachers and SMK learning communities throughout Manggarai Regency, I as a Lecturer of St. Paul Ruteng Catholic University and at the same time Facilitator of the Mobilizing School and Facilitator of the Implementation of the Independent Curriculum held a Community Service (PkM) activity entitled "Workshop on the Implementation of Project-Based Learning Based Independent Curriculum Teaching Tools for Vocational Teachers throughout Manggarai Regency".

The basis of PjBL in the application of teaching tools in the classroom is very relevant to be used in this workshop activity with considerations, including: *First*, enabling SMK teachers to work collaboratively in implementing the Independent Curriculum, starting from identifying problems, designing projects, and evaluating learning outcomes (Lidyasari, 2023).

Second, the Merdeka Curriculum emphasizes the development of practical skills relevant to the world of work. PjBL allows vocational teachers to design projects that allow students to develop these skills directly through authentic learning experiences (Suyatna &; Manurung, 2017). *Third*, PjBL allows vocational teachers to integrate curriculum materials with projects relevant to students' fields of study, which has an impact on increasing student motivation and interest because they see the connection between what they learn and the real world (Pjbl et al., 2022). *Fourth*, PjBL naturally facilitates the development of *21st century* skills such as critical thinking, communicating, collaborating, and creating skills. This is in line with the objectives of the Merdeka Curriculum to prepare students with the skills necessary for success in the modern era (Simbolon &; Koeswanti, 2020).

RESEARCH METHOD

The workshop focuses on implementing the Independent Curriculum for Vocational Teachers across Manggarai Regency using the Project Based Learning (PjBL) Model, which was introduced by W. H. Kilpatrick in his work "The Project Method" (1918). Kilpatrick's emphasis on PjBL centers on the work process rather than solely the end result, encouraging active knowledge construction (Mones et al., 2023) (Simbolon & Koeswanti, 2020). Psychologist Vygotsky further highlighted PjBL as a learning model in "Works on social foundations of thought and action: A social cognitive theory" (1978), emphasizing the guidance aspect in designing quality projects for valuable learning experiences (Anggraini & Wulandari, 2020).

The PjBL-based workshop comprises several stages: first, instilling the concept of the Independent Curriculum, analyzing curriculum documents, and

reflecting on best practices; second, introducing the PjBL Model, understanding its impact, and strategically implementing it within the Independent Curriculum; third, identifying learning challenges and integrating the PjBL model effectively; fourth, planning PjBL-based teaching equipment projects (teaching modules); fifth, testing teaching tools based on PjBL, evaluating their efficacy, and reflecting on the learning process.

To assess the workshop's effectiveness and its impact, a feedback instrument consisting of questionnaire questions was administered through a Google Form link. The collected data were analyzed to derive recommendations and develop Follow-up Plans (RTL) accordingly. This feedback-driven approach ensures continuous improvement and refinement in implementing PjBL strategies within the context of the Independent Curriculum for Vocational Teachers in Manggarai Regency.

RESULT AND DISCUSSION

The process of conducting Participatory Action Research (PAR) activities involved several structured steps aimed at enhancing the implementation of Project Based Learning (PjBL) within the Independent Curriculum framework for vocational teachers in Manggarai Regency. These steps were meticulously planned and executed to ensure a comprehensive and effective approach to professional development and curriculum enhancement. Firstly, the initial step involved establishing communication and coordination with schools and relevant stakeholders, including the Subject Teacher Deliberation (MGMP) and the Learning Community of SMK teachers in Manggarai Regency. This phase occurred during Week 2 of July 2023 and laid the groundwork for subsequent workshop activities.

The second step focused on gathering crucial information regarding the understanding of the Independent Curriculum among teachers and school principals across Manggarai district. This was achieved through diagnostic evaluations conducted during the third week of July 2023, allowing for a baseline assessment of participants' knowledge and readiness for PjBL integration. Following the diagnostic phase, facilitators proceeded to develop and prepare materials based on the extracted information and assessment outcomes. This preparation phase, which occurred in Week 4 of July 2023, ensured that the workshop content and materials were tailored to address specific needs and challenges identified during the diagnostic stage.

The pivotal stage of the process was the actual implementation of the Project Based Learning based Independent Curriculum workshop for vocational teachers in Manggarai Regency, held on August 10-11, 2023. This workshop provided participants with hands-on training, practical strategies, and collaborative experiences aimed at enhancing their capacity to integrate PjBL methodologies effectively. Subsequent steps included the practice trial of PjBL-based teaching tools during Week 3 of August 2023, allowing educators to apply newly acquired skills and techniques in real-world classroom settings. Feedback mechanisms were also established during this phase to gather insights and reflections on the workshop process and its impact on participants' teaching practices.

The final step involved synthesizing feedback and insights gathered throughout the PAR activities to generate recommendations and develop follow-up plans for the implementation of the Independent Curriculum using PjBL-based teaching tools. These recommendations and plans were designed to guide educators in refining their instructional approaches and ensuring continued progress and success in integrating PjBL methodologies during the academic year 2023/2024.The PkM Steps are illustrated with Figure 1 below:

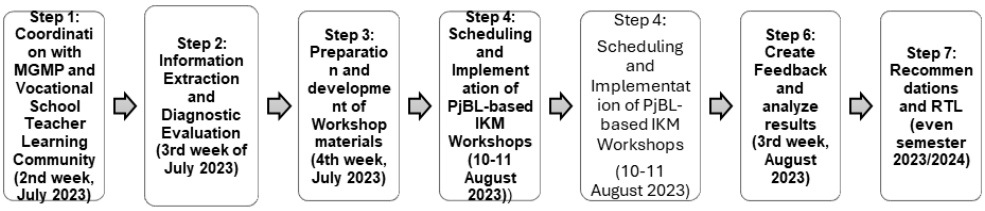

Figure 1. PkM Steps

While the stages of this Project Based Learning (PjBL)-based workshop activity follow the following stages:

1) The process of integrating the concept of the Independent Curriculum, examining curriculum materials, and reflecting on effective methodologies were key phases in the workshop. Initially, participants were thoroughly introduced to the Independent Curriculum during the first stage of the workshop. This entailed gaining insight into the philosophy, goals, and methodologies employed within the Merdeka Curriculum. This activity began with a presentation session by the facilitator. The facilitator explains the historical background and objectives of developing the Independent Curriculum, as well as understanding the philosophy behind it. This presentation may also include views on changes in education and how the Merdeka Curriculum responds to current challenges and needs. After the presentation, there was room for questions and answers to discuss key aspects of the Merdeka Curriculum. Teachers were given the opportunity to share their views and experiences, as well as discuss the implications of the Independent Curriculum for the learning practices carried out in their respective educational units so far (Aisam et al., 2022).

The next session, teachers and school principals were divided into discussion groups per educational unit to carry out curriculum document analysis by referring to the worksheet (LK) provided by the facilitator. Teachers are given the opportunity to analyze official Independent Curriculum documents, such as Education Unit Operational Curriculum (KSOP) documents, curriculum structures, implementation guides, examples of teaching modules, examples of diagnostic, formative, summative assessment tools, and other supporting materials. They are asked to study in detail the documents for Learning Achievements (CP), Learning Objectives (TP), and Learning Objectives Flow (ATP), differentiation learning models, determining Criteria for Completion of Learning Objectives (KKTTP), formulating Indicators for Achievement of Learning Objectives (IKTP), as well as the learning approaches recommended in the Independent Curriculum (Juita, 2021).

The discussion group also discussed good practices in implementing the independent curriculum in their respective schools which have successfully

implemented it. This provides a concrete picture of how the Merdeka Curriculum can be implemented in various school contexts and subjects. After discussing in groups, each school presented the results of their group work and were responded to by teachers from other schools. After a dialectical process occurred, workshop participants formulated a Follow-up Plan (RTL) which contained a commitment to apply the concepts and principles of the Independent Curriculum in learning practices with the Independent Learning and Independent Change scheme (Desianti & Rahayuningsih, 2022). Of course, this involves planning further training, developing learning materials, or arranging collaboration between teachers to support the implementation of the Merdeka Curriculum.

2) Stages of introducing the Project Based Learning (PjBL) Model, the impact of use and strategic implementation in the Independent Curriculum. This stage begins with a presentation session discussing the basic concepts of PjBL by the facilitator. The facilitator explained that PjBL is a learning approach that emphasizes practical learning experiences through authentic projects, where students have the opportunity to apply knowledge and skills in real contexts. The facilitator compared PjBL with conventional learning approaches, such as lectures and textbook-based learning (Wiyanarti, 2018). The facilitator highlights differences in learning focus, student and teacher roles, and expected learning outcomes from each approach. This helps participants to understand the advantages of PjBL in preparing students to solve real world problems and develop 21st century skills such as critical thinking, creativity, communication and collaboration skills (Aditiya & Fatonah, 2023).

Next, the teachers were divided into discussion groups to discuss the impact of using PjBL and strategic implementation in the context of the Independent Curriculum based on the Worksheet (LK) provided by the facilitator. The teachers discussed and highlighted how PjBL can facilitate the development of 21st century skills such as critical thinking, collaboration, communication and creativity, which are the main focus of the Merdeka Curriculum (Rusdin et al., 2023). Apart from that, they also show how PjBL can increase student motivation and involvement in learning. Next, the participants in group discussions discussed PjBL implementation strategies. Based on the concepts and principles of implementation, teachers share practical strategies for implementing PjBL in the classroom at their respective schools. They share thoughts and ideas with each other in designing interesting projects, managing student work teams, facilitating discussions and reflections, and evaluating learning outcomes. Teachers can also share their own experiences in implementing PjBL and provide concrete examples of how they overcame challenges and maximized the benefits of this approach. After the discussion activity, the groups sequentially present their results based on the Worksheet (LK) that has been filled in. Teachers responded to questions from other participants while encouraging the exchange of ideas and experiences between teachers, as well as providing clarification about complex concepts or practices that were less appropriate and relevant to date. After discussion and presentation activities, it continues with the Follow-up Plan, where participants formulate a commitment to implementing PjBL in classroom teaching practices.

3) Stages of identifying learning problems and integrating the PjBL model. Teachers are encouraged to identify learning problems that are relevant to the field of study taught or student needs. For this session, vocational school teachers were divided into working groups to discuss potential learning problems that could be used as the focus of the PjBL project. Based on the Worksheet (LK) provided, they are asked to consider the challenges faced by students in understanding the subject matter or the abilities needed to be successful in the workplace. After group discussions, teachers conduct brainstorming sessions to generate ideas about learning issues that may be relevant to their field of study or students' needs. They identify various topics or issues that can be raised in PjBL-based teaching tool projects to solve problems or create innovative solutions. Teachers conduct further research to understand more deeply the challenges faced by students in certain fields of study or industries (Indra et al., 2021). They can use sources such as research reports, journal articles, or interviews with professionals in the field to gain deeper insights.

Referring to the worksheet in this session too, the teachers analyzed their students' specific needs. They identify gaps between the skills and knowledge needed to succeed in a career or real life, and the skills their students currently possess. Based on the results of discussions, brainstorming and research, vocational school teachers choose one or several learning problems that will be the focus of the PjBL-based teaching tool project. This selection is based on relevance to the student's field of study or needs, as well as the potential to generate deep and sustainable learning. Next, vocational school teachers develop clear learning objectives for their PjBL projects based on the selected learning problems. These goals include students' abilities to solve problems, collaborate, communicate, and develop a deep understanding of selected topics.

4) Implementation planning for the PjBL-based teaching device (teaching module) project. Workshop participants form teams and plan PjBL projects in the form of teaching tools. This also involves Educational Unit Operational Curriculum (KSOP) documents, curriculum structures, implementation guides, examples of teaching modules, examples of diagnostic, formative, summative assessment tools, and other supporting materials. They are asked to study in detail the documents for Learning Achievement (CP), Learning Objectives (TP), and Learning Objective Flow (ATP), the differentiation learning model, the formulation of Learning Objective Achievement Indicators (IKTP), as well as the learning approaches recommended in the Merdeka Curriculum.

To run activities smoothly, vocational school teachers form work teams consisting of several members according to project needs (Pesa & Mukhaiyar, 2021). Each team member contributes with their expertise and knowledge to design a comprehensive PjBL-based teaching tool project. Work teams set clear and measurable learning objectives for their PjBL projects. These goals should include the skills, knowledge, and attitudes that students hope to achieve through participation in the project. The work team designs a series of activities that will be carried out in the PjBL project. They take into account student engagement in practical learning and authentic experiences that will help them achieve set learning goals. The working team also identified the resources needed to support the implementation of PjBL-

based teaching tools. This includes physical resources such as equipment or technology, human resources such as mentors or experts in relevant fields, and information resources such as reading materials or online resources. In preparing this teaching tool, the work team has also planned an evaluation strategy that will be used to assess the achievement of learning objectives in PjBL-based projects. This includes the use of evaluation rubrics, reflection assignments, and other assessment methods appropriate to the characteristics of the project. Based on all the components that have been designed, the work team drafts a comprehensive teaching tool. This teaching toolkit includes project implementation steps, a guide for teachers on how to accompany students, as well as necessary additional materials and resources.

After the teaching tools in the form of teaching modules have been completed, each working group presents and receives feedback from other participants and facilitators as part of testing and adjustments. Thus, before implementing PjBL-based teaching tools in the classroom, teachers need to test them to ensure their suitability. Through discussion space and input from facilitators, they evaluate the draft teaching tools and make adjustments if necessary based on the feedback provided, both during workshop activities and when they are later implemented in schools. Next, the working group made a Follow-up Plan (RTL) in the form of a draft plan and scheduling for the implementation of PjBL-based teaching tools in their respective schools. Plans and scheduling must be made clear, focused and measurable in terms of time, supporting resources and preparation from teachers and students.

Photo 1.
Opening Activity of the IKM Workshop with the PjBL Model

Photo 2.
IKM Workshop with PjBL Model on the first day

Photo 3.
IKM Workshop with PjBL Model on the second day

Photo 4.
IKM Workshop with PjBL Model on the third day

Figure 2. Some documentation of workshop activities

5) Practice testing teaching tools (teaching modules) based on PjBL, evaluating and reflecting on learning. Based on mutual agreement with the participants, the implementation of teaching tools in their respective schools was carried out one

week after the workshop activities with a lesson study pattern in accordance with the guidelines provided by the facilitator. Based on information obtained from each school principal and based on the results of feedback via the Google form link, trial activities for this device have been carried out. In this trial activity, teachers have carried out PjBL-based learning practices and evaluated their implementation. In their evaluation activities they have considered the success of the project in achieving learning objectives, the obstacles faced, and the lessons that can be applied in the future (Amboningtyas, 2018). Teachers evaluate the extent to which the PjBL project achieves the learning objectives set out in the teaching tools. They use evaluation rubrics or criteria that they have previously set to assess student achievement in terms of expected knowledge, skills and attitudes (Darmawati et al., 2023).

Next, the teachers reflected on the success of the PjBL-based teaching tool project in achieving learning objectives and overcoming the challenges faced during implementation. They identify factors that contribute to project success, such as student involvement, support from the school, or effective teaching strategies (Jatirahayu, 2013). Teachers also evaluate the obstacles and challenges faced during the implementation of the PjBL-based teaching tool project. In their evaluation activities, they identify factors that hinder the achievement of learning objectives or complicate the learning process, such as limited resources or problems in time management. Teachers reflect individually and collaboratively about their learning experiences during the implementation of the PjBL-based teaching tool project. They consider successes, obstacles, and lessons learned from the project, and look for ways to improve their teaching practices in the future (Darmuh & Ramdani, 2022).

Based on their evaluation and reflection, teachers develop follow-up plans to improve or improve their learning process in the future, including the development of more effective teaching strategies, increasing available resources, or adjustments in the planning and implementation of subsequent PjBL-based teaching tools. Teachers share experiences with fellow teachers and gain additional insight from different perspectives. They take the opportunity to learn from each other's experiences and seek inspiration to improve their teaching practices in the future.

Photo 1.
Practical Trial of the PjBL Teaching Module at Ruteng Tourism Awareness Vocational School (Class XI, Catering Services Department)

Photo 2.
Practical Trial of PjBL-based Teaching Modules at SMKS Widya Bhakti Ruteng (Class XI Computer Network Engineering Department)

Photo 3.
Practical Trial of the PjBL Teaching Module at SMKS St. Aloisius Ruteng (Class XI Automotive Light Vehicles)

Photo 4.
Practical Trial of the PjBL Teaching Module at SMKN 1 Satarmese (Class XI Computer Network Engineering Department)

Figure 3. Practical Testing of PjBL Based Teaching Tools at Vocational Schools in Manggarai

Furthermore, in order to measure the effectiveness and impact of workshop activities, processes and trials of PjBL-based teaching tools (teaching modules) in several vocational schools, feedback was carried out. The feedback instrument is carried out by distributing questionnaires via the Google Form link. The good bait questions use open answers using a Likert scale (1-4). At stage 1, feedback questions include: 1) To what extent do you feel that the Independent Curriculum Concept Cultivation activity is useful for your understanding of the Independent Curriculum? 2) What is your opinion about the suitability of the curriculum documents analyzed in the workshop with the principles of the Independent Curriculum? 3) How ready are you to plan and implement Project Based Learning-based learning after attending this workshop? 4) Do you feel more confident in applying the good practices learned in this workshop in the learning context at your school? 5) How do you assess the overall benefits of this workshop in preparing you to implement the Independent Curriculum Based on Project Based Learning in Vocational Schools throughout Manggarai Regency?

In stage 2, the feedback questions are as follows: 1) To what extent do you feel that the PjBL Introduction Stage activities helped you understand the concepts and principles of PjBL? 2) What do you think about the impact of using the PjBL Model in the Independent Curriculum on learning in your school? 3) How ready are you to apply the PjBL Model in vocational school learning after attending this

workshop? 4) Do you feel more confident in planning and implementing PjBL-based learning after attending this workshop? 5) What is your assessment of the strategy for implementing the PjBL Model in the Independent Curriculum discussed in this workshop?

At stage 3, the feedback questions are: 1) To what extent do you feel helped in the process of identifying learning problems after following this stage in the workshop? 2) What do you think about the relevance of the PjBL model in identifying learning problems in your school environment? 3) How well do you understand the concepts and steps for integrating the Project Based Learning (PjBL) model in overcoming identified learning problems? 4) What is your level of readiness in implementing the PjBL model after following this stage? 5) What is your assessment of the relationship between identifying learning problems and integrating the PjBL model in the context of the Independent Curriculum?

At stage 4, the feedback questions are as follows: 1) To what extent do you feel that the project planning material in the form of teaching modules helps you understand the concepts and steps of project planning in the context of the Independent Curriculum? 2) What do you think about the clarity of material relationships in the teaching module regarding project planning in the Independent Curriculum Based on Project Based Learning? 3) How relevant and practical is this teaching module in helping you plan PjBL-based learning projects in vocational schools? 4) What is your level of confidence in applying the concepts and steps taught in this teaching module in designing PBL-based learning projects in your class? 5) How do you assess the overall benefits and usefulness of this project planning teaching module in helping you implement the PJBL-Based Independent Curriculum in your school?

At stage 5, the feedback questions are as follows: 1) To what extent do you feel that the practice of testing PjBL-based teaching tools (teaching modules) helps you understand learning concepts practically? 2) What do you think about the quality of the teaching tools tested in practice, are they in accordance with the principles of the Independent Curriculum and learning needs in vocational schools? 3) How effective do you feel in evaluating the results of practical testing of PjBL-based teaching tools in measuring student learning achievements? 4) What is your level of satisfaction with the learning reflection process after carrying out practical trials of PjBL-based teaching tools? 5) How do you assess the overall benefits and relevance of this practice of testing, evaluation and learning reflection in preparing you to implement the PjBL-Based Merdeka Curriculum in your school.

Based on the analysis of the results of filling out this feedback questionnaire, an overview of the data is obtained, as in Figure 4 in the following diagram.

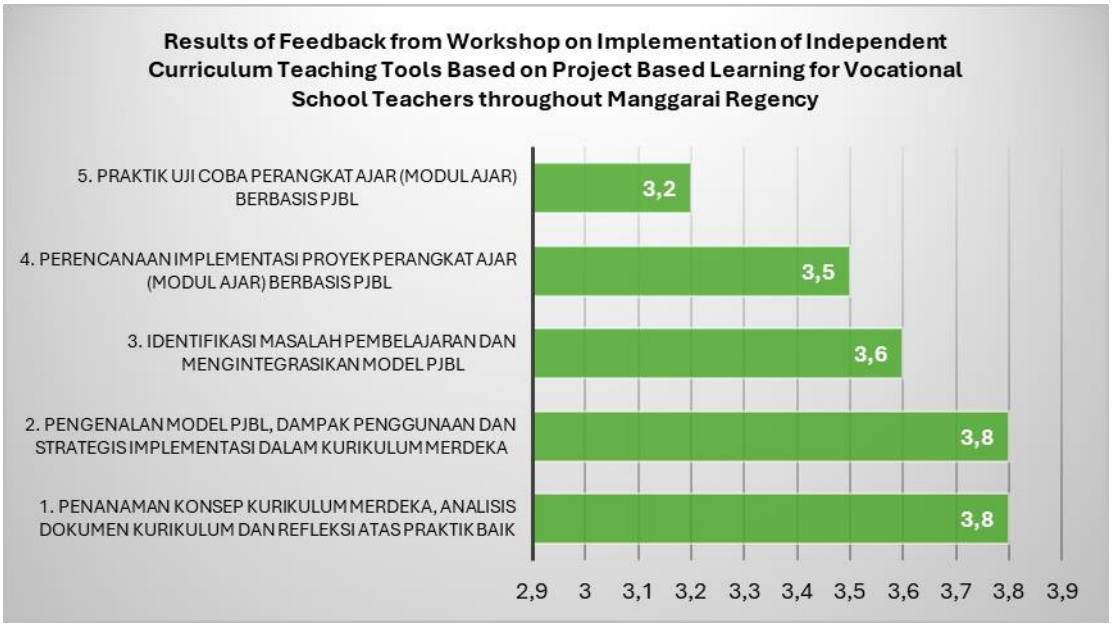

Figure 4. Activity Feedback Analysis Results Diagram Workshop on Implementation of Independent Curriculum Teaching Tools Based on PjBL for Teachers Vocational Schools throughout Manggarai Regency

Based on the results of the analysis above, stage 1 is related to instilling the concept of an independent curriculum, analysis of curriculum documents and reflection on good practices, stage 2 is related to the introduction of the PjBL model, the impact of use and implementation strategies in the Independent Curriculum, stage 3 is related to identifying learning problems and integrating the PjBL model, and stage 4 related to planning the implementation of the PjBL-based teaching device (teaching module) project, are in the "good" category (average 3.6). However, what is of note and needs attention is related to stage 5 feedback related to the practice of testing PjBL-based teaching tools (teaching modules) which are categorized as "not good" (3.2). In this case, if it is a percentage, it is still minus 16% to reach the "good" category.

After evaluation, there were several practical obstacles that caused the practice of testing teaching tools (teaching modules) to still be categorized as poor, namely: first, teachers felt that the available time was insufficient to design and implement PjBL-based projects well. They still have to complete the established curriculum, and adding PjBL projects can take more time. Second, despite having an understanding of PjBL, teachers may have difficulty finding or allocating the resources needed to implement these projects. This includes resources such as software, equipment, materials, or even support from the school (Jatirahayu, 2013).

Third, assessing the results of PjBL projects in an adequate and objective manner can be a challenge. After trial practice, it turns out that many teachers may feel unsure about how to assess these projects fairly and effectively, especially if the projects involve various aspects that cannot be measured by standard tests (Rehani & Mustofa, 2023). Third, managing PjBL-based teaching tools in a classroom environment can be complicated, especially if there are many students working in groups or if the project requires a high level of autonomy from students. Teachers

may face challenges in maintaining classroom discipline and facilitating collaboration between students (Tapung et al., 2024). Fourth, even though teachers have attended workshops, they may not get enough institutional support from the school, or other related parties, such as parents or the school community (Tapung et al., 2018). This could hinder the implementation of PjBL practices as a whole. Fifth, some teachers may still be attached to conventional teaching methods that they have previously mastered. Changing these habits and adopting a more collaborative and project-based approach can be a challenge (Sene, 2016).

Based on the practical obstacles above, there are several recommendations to overcome them, including: First, collaborate with curriculum staff and school management to integrate the PjBL approach into the existing curriculum. This can help reduce conflicts between PjBL projects and established curriculum requirements (Syslová, 2019). Second, schools can allocate additional resources such as software, equipment and materials needed to support the implementation of PjBL projects. This can be done by submitting a proposal to the school or seeking support from sponsors or other parties outside the school (Fang, 2021). Third, provide training to teachers on alternative assessment techniques that are in accordance with the PjBL approach.

These include formative assessments, portfolio-based assessments, or peer-to-peer assessments (Zee & Koomen, 2016). Teachers can also be encouraged to collaborate with their colleagues to develop effective assessment strategies. Fourth, provide additional training to teachers in classroom management that supports the PjBL approach, including strategies to facilitate collaboration between students, manage time efficiently, and build a classroom culture that supports active learning (Zee & Koomen, 2016). Fifth, schools need to ensure that teachers receive sufficient institutional support from school management, teachers' councils and other related parties. This can be done through support and mentoring programs, regular meetings to share experiences, and recognition of achievements and innovations in teaching (Bhayangkara & Raya, 2023). Sixth, encourage collaboration between teachers in compiling and sharing their best experiences in implementing PjBL. This can be done through discussion forums, collaborative workshops, or online platforms dedicated to sharing resources and best practices (Ahyanuardi & Efronia, 2022).

As a reinforcement of the recommendations above, in general this workshop activity provides an opportunity for teachers to gain an in-depth understanding of the concepts and principles of the Independent Curriculum, along with its teaching tools (Purwati et al., 2024). This includes an understanding of curriculum flexibility, a competency-based approach, and an emphasis on contextual and relevant learning experiences. In addition, with this workshop activity teachers are enabled to develop the pedagogical skills needed to implement the Merdeka Curriculum, including the ability to design and manage project-based learning, facilitate meaningful learning models in the classroom, and provide constructive feedback (Nugraha & Frinaldi , 2023). Teachers are trained to utilize educational technology effectively to support project-based learning. This includes the use of relevant digital learning platforms, productivity applications and online collaboration tools.

Based on Project-Based Learning (PjBL) in this workshop, teachers can participate, collaborate and apply their knowledge in the form of learning planning document projects and teaching tools that are interesting, relevant and challenging in learning, which has an impact on increasing motivation and interest in learning students in class, in the practical field and when in the world of work (Kahar & Ili, 2022). Just as project-based learning creates a learning experience that is more authentic and similar to the challenges students will face in the world of work, this workshop activity provides an overview of how teachers can design projects that integrate skills and knowledge relevant to industry needs (TEFA: Teaching Factory) (Dwijayanthi & Rijanto, 2022), thereby increasing students' readiness to enter the world of work. In the process, this workshop facilitates collaboration and exchange of experiences between teachers. Through discussions, sharing ideas, and collective reflection, teachers can learn from each other about best practices in implementing the Merdeka Curriculum with a project-based learning approach.

This PjBL-based Independent Curriculum teaching tool implementation workshop can provide teachers with the opportunity to explore and discover themselves in teaching (Khodijah, 2021). Teachers can learn to develop relevant topics and complete collaborative projects that expand understanding and practice of the material taught. PJBL-based workshops can also help teachers build collaborative skills and increase the sense of togetherness in the group. In the PJBL workshop, teachers will be given the opportunity to work together in groups, which involves discussion, reflection and discovery together (Khodijah, 2021). This will improve their ability to work together with collaborators and optimize their contribution to the team.

The process of engaging in Participatory Action Research (PAR) activities encompassed a series of systematic steps aimed at improving the integration of Project Based Learning (PjBL) within the framework of the Independent Curriculum tailored for vocational teachers in Manggarai Regency. These steps were meticulously planned and executed to ensure a thorough and efficient approach to both professional development and curriculum enhancement. Initially, the primary phase involved initiating communication and coordination with educational institutions and pertinent stakeholders, such as the Subject Teacher Deliberation (MGMP) and the Learning Community of SMK teachers in Manggarai Regency. This foundational step took place during Week 2 of July 2023, setting the groundwork for subsequent workshop activities.

The subsequent step focused on acquiring vital information regarding participants' comprehension of the Independent Curriculum among teachers and school administrators throughout Manggarai district. This was accomplished through diagnostic evaluations conducted in the third week of July 2023, providing a baseline assessment of individuals' knowledge and readiness for incorporating PjBL strategies. Following the diagnostic phase, facilitators proceeded to develop and prepare instructional materials based on the information gleaned and the assessment outcomes. This preparatory phase, conducted in Week 4 of July 2023, ensured that workshop content and materials were tailored to address specific educational needs and challenges identified during the diagnostic phase.

The pivotal stage of the process entailed the actual implementation of the Project Based Learning based Independent Curriculum workshop for vocational teachers in Manggarai Regency, held on August 10-11, 2023. This immersive workshop provided participants with hands-on training, practical strategies, and collaborative experiences geared towards enhancing their proficiency in integrating PjBL methodologies effectively into their teaching practices. Subsequent stages included conducting trial runs of PjBL-based teaching tools during Week 3 of August 2023, allowing educators to apply newly acquired skills and techniques in authentic classroom settings. Feedback mechanisms were also established during this phase to gather insights and reflections on the workshop process and its impact on participants' teaching methodologies.

The final step involved synthesizing the feedback and insights gathered throughout the PAR activities to formulate recommendations and develop follow-up plans for implementing the Independent Curriculum using PjBL-based teaching tools. These recommendations and plans were crafted to assist educators in refining their instructional strategies and ensuring continuous progress and success in integrating PjBL methodologies effectively during the academic year 2023/2024.

CONCLUSION

This workshop has afforded vocational school teachers the chance to enhance their comprehension of the PjBL concept. Throughout this session, educators received hands-on training and expertise in crafting and executing teaching tools based on PjBL principles. They learn how to identify topics or projects that are relevant to the curriculum, and plan activities that allow students to be actively involved, as well as evaluating learning outcomes holistically. This workshop also became a platform for building networks and collaboration between vocational school teachers throughout Manggarai Regency. They can exchange experiences, share ideas, and support each other in implementing PjBL in their respective schools. Through this workshop activity, it is hoped that institutional support will be strengthened from schools, local governments and other related parties for the implementation of PjBL in vocational schools.

In this context, it is crucial for educators to receive support in overcoming the practical challenges associated with implementing Project Based Learning (PjBL) within their classrooms. These challenges encompass a range of areas such as time management, allocation of resources, effective assessment of student learning outcomes, and creating a conducive environment for interactions within a project-based classroom setting. Addressing these challenges is pivotal to fostering an environment conducive to the development of innovative learning practices at the school level, particularly aimed at enhancing the quality of education in vocational schools across Manggarai Regency through the adoption of PjBL methodologies.

The primary goal is to provide students with more meaningful and impactful learning experiences that are active, participatory, and contextually relevant. By doing so, it is anticipated that student learning outcomes will witness improvement, enabling them to better navigate the evolving demands of a dynamic workforce and the complexities of a rapidly changing world. This aligns with the broader objective of preparing students to effectively cope with the challenges posed by change and

to equip them with the necessary skills and competencies needed to thrive in diverse professional settings. By offering support and resources to educators in managing the practical aspects of PjBL implementation, educational institutions can facilitate a more engaging and effective learning environment. This, in turn, contributes to the overarching goal of enhancing the overall quality of education and preparing students to excel in their academic pursuits and future careers.

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