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Research Article

Strategy and Implementation of Project-based Learning: Improving Learning Quality in Polytechnic

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Abstract.
The current implementation of polytechnic education must be adaptive to industry needs so that graduates must be equipped with digital literacy skills and project-based learning (PBL). The problem faced by polytechnics is that not all courses taught refer to PBL, so it is necessary to map the systems that must use PBL. This research was conducted to identify and analyze how the strategy and implementation of PBL are carried out in the registration course in the PNJ MICE study program in the digital era. Has the PBL, that has been carried out in the PNJ MICE study program, had any impact on improving the quality of learning? The research method used was descriptive qualitative data collection techniques using direct observation and distribution of questionnaires (using a Likert scale) to second-semester students of the PNJ MICE study program in 2023 and interviews. The results showed that learning registration courses using PBL provided practical experience (strongly agreed 81%), fostered learning motivation (strongly agreed 79%), created ideas and creativity (agreed 63%), created teamwork patterns (approved 60%), time management (strongly agree 69%), have the competence (agree 58%), project mastery (strongly agree 59%). As for the convenience of students in learning registration topics, namely: types of registration in MICE events, registration staff, designing forms, event layouts, logistical checklists, determining venues, event planner competencies, payment methods, and registration project work that is easy to understand and applied. PBL registration has impacted improving the quality of learning in the MICE study program, and responding to the needs of competent students in the digital era.

Keywords: registration, MICE, project-based learning

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1. Introduction

The increasingly dynamic development of information technology and policy changes in the implementation of higher education in Indonesia have an impact on the learning patterns provided to students as learners. The speed of change in information technology has also provided opportunities and threats for higher education providers in Indonesia in facing competition at the global level. What must be done to anticipate changes in information technology? The world of higher education as one of the levels

of education in Indonesia must be adaptive to these changes, one of which is by developing learning models that provide opportunities for students to learn together to develop their potential through project based learning. Referring to Law No. 12 of 2012, Article 3 states that the meaning of education is the improvement and development of the skills possessed by students. The improvements that occur can be in the form of increasing knowledge, knowledge, skills given to students to also have noble attitudes, morals and be able to think critically. According to Suprihatiningrum [1] explains that an educator is an individual who has strengths and abilities that are shared and taught to others when providing teaching. Educators also play an important role in providing opportunities for students to develop their potential, providing motivation in the learning process, and providing space so that students can succeed in going through the learning system well and smoothly. The learning model is a model that teachers and educators must know and master when providing material to students correctly. A learning model is a conceptual picture that describes the procedures and procedures that can systematically organize learning experiences in achieving certain learning goals and has a function as a guide for every learning designer so that teachers are able to plan and carry out learning activities [2]. The learning model is a series of teaching and learning processes from the beginning to the end of the learning design cycle which is equipped with creative and novel teaching materials in certain fields of science so that the learning process that is built becomes more interesting and comprehensive. The learning model also explains the stages of the learning process that must be carried out, including discussing the learning style of students (learning style) as well as the teaching style of the teacher (teaching style) so that both make the teaching and learning process enjoyable [3]. Meanwhile Trianto [4] explains that in the learning model there must be a plan or pattern that is used as a guiding rule for planning learning, both in-class learning and tutorial learning. Models can be interpreted as representations of three dimensions of real objects [5]. One of the learning models used in higher education is project based learning which provides learning space for students to work on projects from course material or can also take the form of collaboration between courses from internal and external study programs while still involving teachers in carrying out the learning process. , consultation, direction and monitoring of project completion. Project based learning is a learning approach that in the learning process provides freedom for students as students to be able to plan background activities, carry out projects collaboratively and produce work products that can be presented to others [6]. Currently, the project based learning approach

is used as a very important learning model to support the concept of Independent Learning Campus (MBKM) in higher education. Why is that? because according to the MBKM concept, it provides changes to learning models and patterns that no longer focus on teacher center learning (TCL) where the teacher's role is the only source of learning, but this paradigm has changed to student center learning (TCL) so that students are able to develop their learning potential. by continuing to involve teachers as coaches and mentors in learning. The curriculum which refers to the MBKM concept has provided changes to the pattern of higher education, so that this is a problem in the learning process in higher education which is still conventional and focuses on the TCL concept, has not changed and has resulted in students not developing their potential in participating in learning. Education provided in higher education includes academic and vocational pathways. Polytechnics as a form of vocational education provide an educational pattern that emphasizes a larger practical portion compared to academic pathways. The polytechnic education pattern produces work-ready graduates who are competent and professional in responding to the needs of industry and companies. The problem in this research is that at the Jakarta State Polytechnic there are still many courses taught using conventional learning models even though the curriculum has changed because it must support learning patterns based on the MBKM concept. Therefore, this research aims to identify and analyze how the strategy and implementation of problem based learning (PBL) is carried out in the Registration course in the MICE PNJ study program in the current digital era? Does the PBL that has been carried out in the PNJ MICE study program have an impact on improving the quality of learning? The research method used is descriptive qualitative, data collection techniques using direct observation, and distribution of questionnaires (using a Likert scale) to second semester students of the PNJ MICE study program in 2023, and interviews. For this reason, this research carries the theme: Project Based Learning Implementation Strategy: Efforts to Improve the Quality of Learning in Polytechnics in the Digital Era. The learning model basically explains how the choice of learning form is depicted from beginning to end which is presented in the form of the teacher's specifics including an approach, strategy, method, technique and learning strategy so that it is connected into a unified whole [7]. The project based learning (PBL) learning model or project-based learning model is a learning model that uses projects or activities as the medium. The project-based learning model is an innovative learning model that is centered on students as students and the teacher's role as motivator and facilitator, students are given the opportunity and opportunity to work autonomously in constructing their learning. The

project based learning model is interpreted as a learning model that involves projects in the learning process. The project learning model has given students the opportunity to work on assignments individually and is required to be able to observe, read and research [8-10]. Carrying out learning with the project based learning concept has provided opportunities not only for teachers but also students to develop thinking, knowledge and skills in completing projects or assignments independently, however collaboration and cooperation between individuals is still carried out. This project-based learning model has the characteristics of being a decision maker and creating a framework. The characteristics of project based learning (PBL) are developing students thinking skills, allowing them to have creativity, encouraging them to work cooperatively, leading them to access the information on their own, and to demonstrate how this information works. PBL usually requires students to participate willingly in the meaning of learning activities proposed, mostly on teamwork [10, 11]. Meanwhile, the principle of project based learning has the following principles: (a) centralized which focuses on learning for students, (b) incentives which provide meaning that students can have motivation to complete projects in certain fields, (c) constructive investigations which explain how to achieve goals that have inquiry, concept development and resolution, (d) autonomy where students are independent in carrying out the learning process and can freely determine their own choices, and (e) realistic where activities look like they are actually real [12]. This project based learning model can be implemented in Polytechnic higher education if there is an appropriate strategy between teachers and students in the learning process. The definition of strategy is interpreted as a series of decisions and actions that determine the company's performance over time and in long-term plans. In strategy is needed [13]. Strategic management is interpreted as an art and knowledge in formulating, implementing, and how to evaluate cross-functional decisions that enable an organization's goals to be achieved appropriately [14]. Strategic management is a set of decisions and actions that result in the formulation and implementation of plans that have been designed to achieve company goals [15]. Project-based learning (PBL) is a learning model that uses problems as an initial stage in gathering and students are able to develop new knowledge based on the results of real experience [16-19]. The project based learning (PBL) learning model in improving how active students are in the PBL teaching process becomes the main focus of learning and is a learning approach in which real world problems become a context for students to learn about critical thinking and such as problem solving skills, and to obtain essential knowledge and concepts from the subject matter. PBL is learning

based on cognitive theory which includes constructivist learning theory [20-22]. There are five phases in implementing PBL, such as: (1) orienting students to the problem, (2) organizing students to research; (3) assisting independent and group investigations; (4) develop and present work results; (5) analyzing and evaluating the problem solving process [20-24]. Referring to research results [20-22] PBL places more emphasis on cognitive theory and constructivist learning theory and is implemented in five phases, this is in line with the results of research on PBL [23, 24] and it could be happened on global education and same with objective in this research.

2. Methodology

The research method used is descriptive qualitative where the researcher will explain and describe the research results in the form of sentence descriptions. Referring to Darmadi [25] that qualitative research is a research method based on positivist philosophy which is used in researching natural objects. The researcher acts as the key instrument, and data collection techniques are carried out using triangulation where data analysis is inductive or deductive and the results of qualitative research emphasize meaning and phenomena rather than generalizations. The objects of this research are students who have studied the Registration course in the fourth semester of the D4-MICE study program, majoring in Business Administration at the Jakarta State Polytechnic (PNJ) where this course has implemented a project based learning learning model in the last two years, namely 2022-2023 since the MBKM curriculum was established. he number of D4 MICE students involved in this research was 52 people who returned answers to the questionnaire distributed. The selection of respondents in this study was carried out using random sampling from three classes (76 people) of D4 MCIE study program students that the researcher taught. The data collection technique was carried out using the direct observation method because the researcher was directly involved in implementing the project based learning learning model in teaching the Registration course in the D4 MICE-PNJ study program, was directly involved in the workshop regarding the implementation of the project based learning policy at PNJ, conducted interviews with: (a) Deputy Director for Academic Affairs PNJ, and (b) Coordinator of the D4 MICE Study Program-Department of Business Administration-PNJ, documentation study regarding the project based learning (PBL) policy at PNJ, questionnaire distributed using Google Form to second semester D4 MICE students, questionnaire using a Likert Scale and closed question form relating to the PBL learning

model as a response to the implementation of the Merdeka Belajar Kampus Merdeka (MBKM-Independent Learning-Independent Campus) curriculum policy. Observations are carried out directly during the teaching and learning process and directly interact with students. The interview was conducted with the MICE head of study program, and Vice Director of Academic PNJ by asking questions about policy and implementations of project based learning.

3. Analysis and Discussion

In this sections analysis talking about results of this research, that questionnaire answers returned by respondents regarding of 7 questions asked for the Project Based Learning as learning model in the Registration course for the D4 MICE-PNJ study program. The following figure is an explanation for each of the answers to the seven questions asked, starting from the explanation in Figure 1.

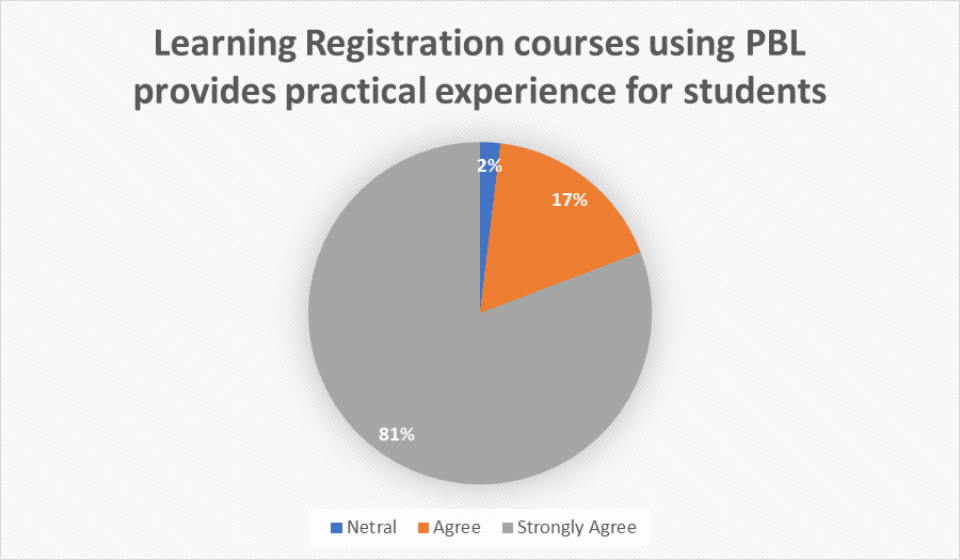

Figure 1: Registration course learning using PBL provide practical experience for students.

From the picture above, respondents answered strongly agree (81%), agree (17%) and 2% answered neutral. This proves that the PBL concept in learning the Registration course has provided practical experience for students and is in accordance with the opinion of [10-12] that students are given the opportunity to develop their potential and be autonomous in working on their projects. Furthermore, regarding the question of whether the PBL model can foster high student learning motivation, the results can be seen in Figure 2 below:

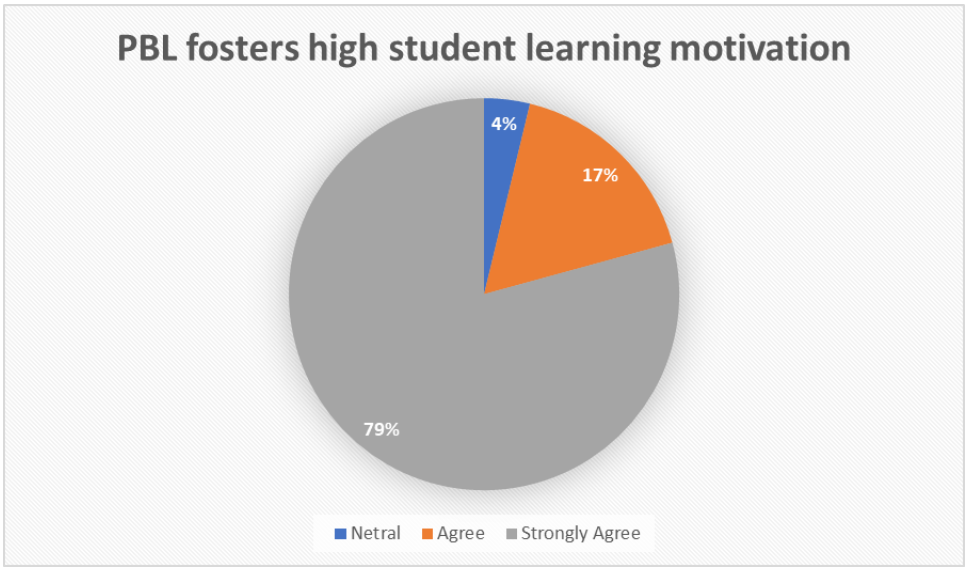

Figure 2: PBL fosters high student learning motivation.

Figure 2 above proves that respondents gave answers of strongly agree (79%), agree (17%), and 4% neutral. These results explain that the motivation within students has grown and created high enthusiasm for learning. These results support the opinion of [8-11]. Furthermore, in Figure 3 below you can see the results of the respondents' answers regarding the third question in this questionnaire, namely that the PBL model creates ideas and creativity in students.

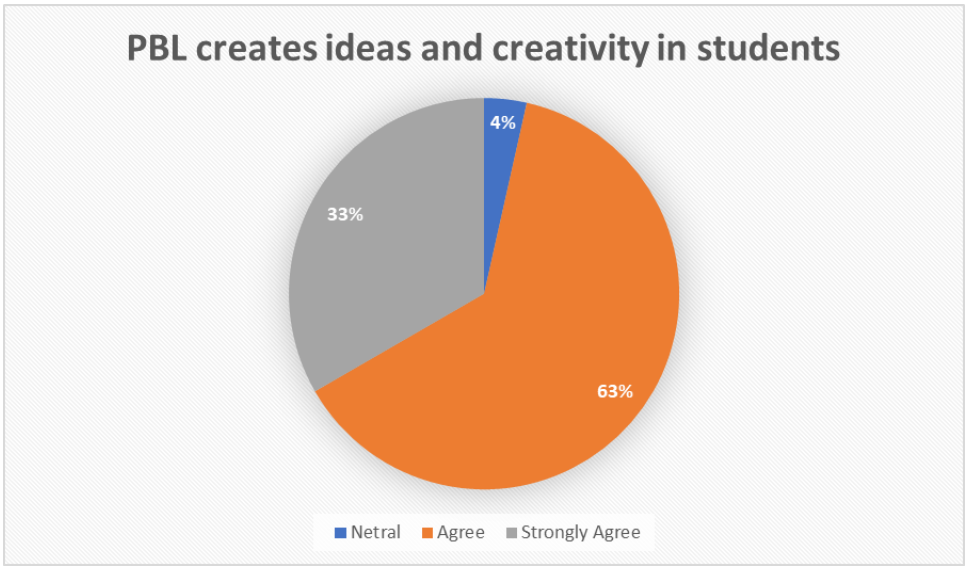

Figure 3: PBL creates ideas and creativity in students.

From Figure 3 above, the respondents answered strongly agree (33%), agree (63%) and 4% neutral. These results have proven that student creativity is born because there is an opportunity to learn using the PBL model. This is in line with the opinion of [16-19]

which illustrates that students in the PBL learning model have been given space to develop ideas and creativity in working on the project.

Figure 4 below explains whether the implementation of PBL also results in mastery of certain competencies. The results can be stated that the answer is strongly agree (36%), agree (58%) and 6% neutral. This answer illustrates that when students work on a project it has an impact on the emergence of mastery of both knowledge and skills in the competency where the project is carried out. Complete results can be seen in Figure 4 below describe implementation of PBL also results in mastery of certain competencies.

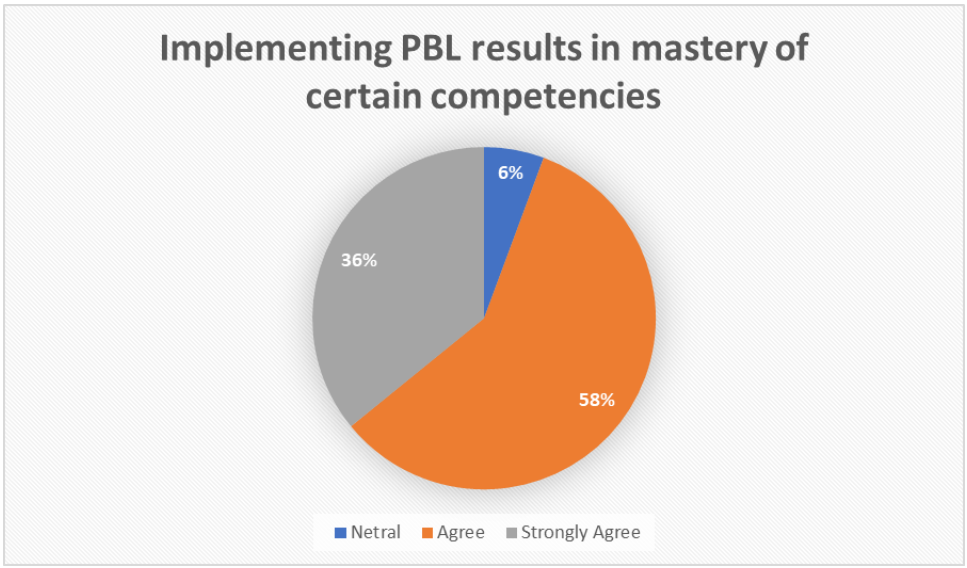

Figure 4: Implementation of PBL also results in mastery of certain competencies.

Furthermore, the respondents' answers regarding the question whether students understand project mastery can be seen in Figure 5 below:

For the question in Figure 5 above, whether the PBL concept can explain students' understanding of a project, the results show that respondents answered strongly agree at 59%, agree (33%) and neutral (8%). These results illustrate that with PBL students are better able to understand and master how projects can be carried out properly and correctly. This agrees with [20-22, 25] where students can orient students to problems and are able to carry out research and are able to provide assistance and investigations both independently and in groups.

Next is Figure 6 where the question is asked about whether PBL creates patterns of student collaboration in project teams? The results showed that 36% of respondents answered strongly agree, 60% answered agree and 4% answered neutral. This means that these results illustrate that the PBL model has proven that students can create

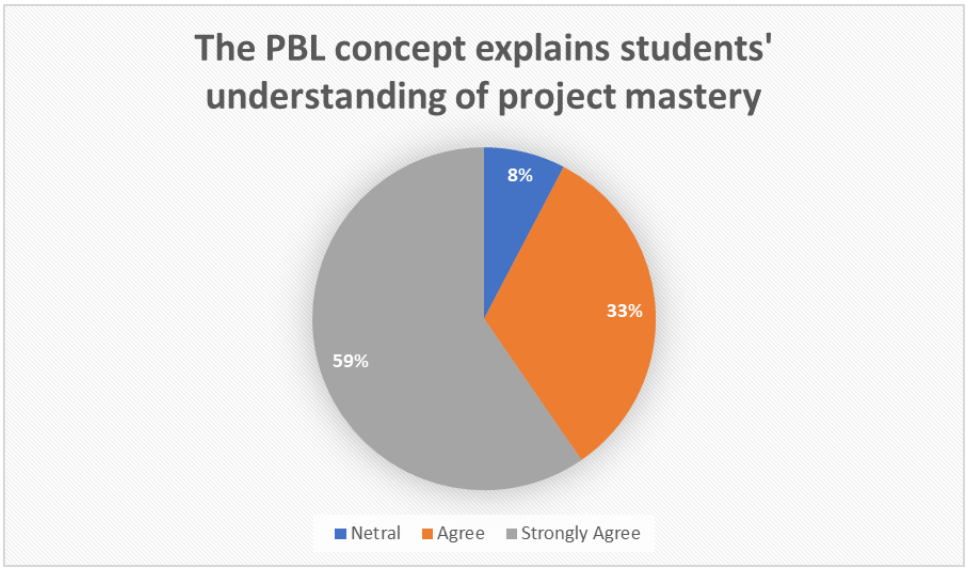

Figure 5: The PBL concept explains student understanding regarding project mastery.

collaboration in project teams and of course this condition can simplify and expedite the tasks that must be completed in the project. This is in line with [20, 22, 26, 27] that through the PBL model students can apply cognitive theory which includes constructivist learning theory.

The following is Figure 6 regarding the question of whether PBL creates patterns of student collaboration in project teams or not, which can be seen in the following results:

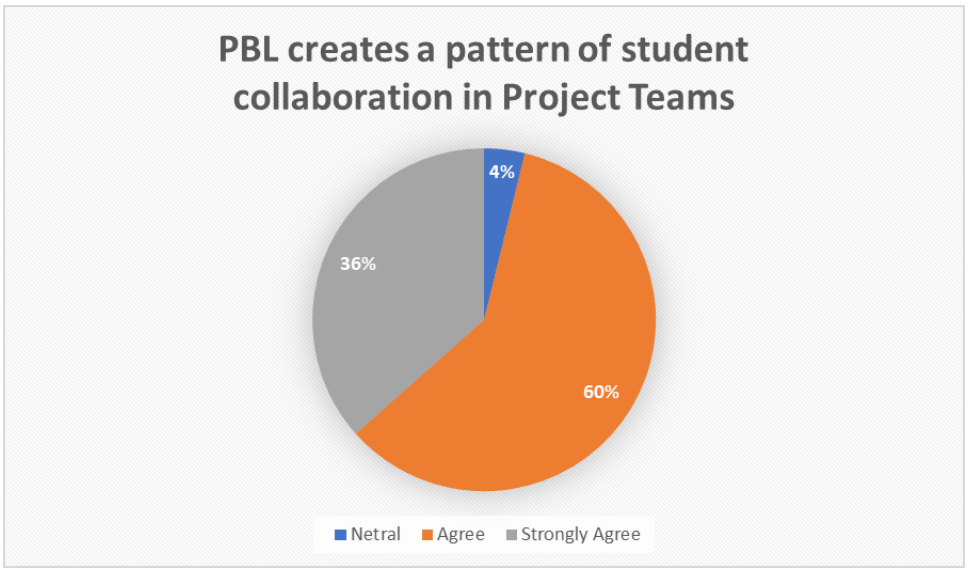

Figure 6: PBL creates patterns of student collaboration in project teams.

The next question is whether implementing PBL requires good mastery of time management. The following are the results of the answers from respondents which

are presented in Figure 7 below implementing PBL requires good mastery of time management.

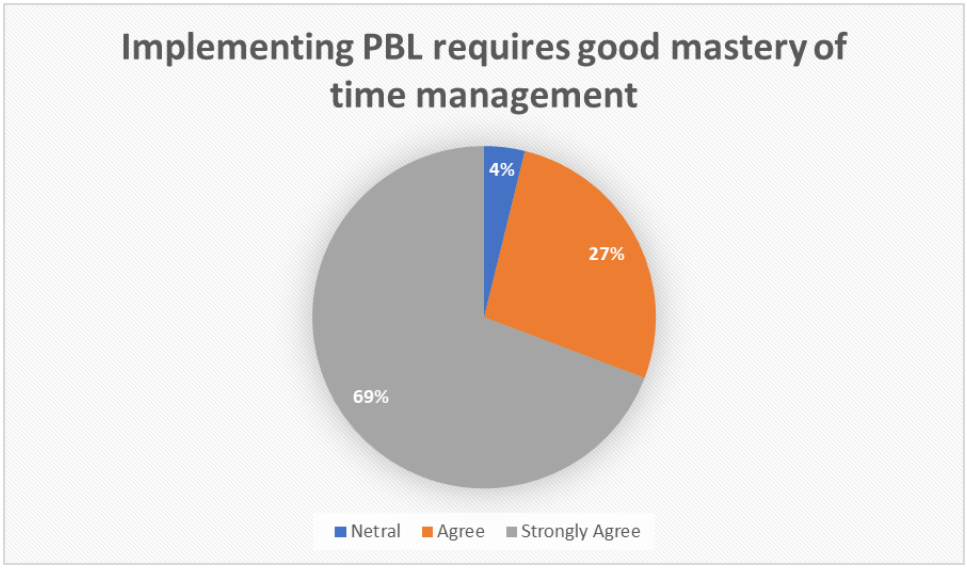

Figure 7: Implementing PBL requires good mastery of time management.

The results obtained in Figure 7 regarding the application of PBL whether it requires mastery of good time management have been answered by respondents strongly agree (69%), agree (27%) and neutral (4%), meaning that time management in working on a project is urgent for students. Why? because with planning and strategies in carrying out projects that have been made before the project is implemented, of course determining and calculating the length of time the project will be carried out is important. Thus, this answer is in line with the concept of [11, 13, 17, 26, 27] where strategic management in increasing work cooperation and collaboration is important for students to have. Students must develop and present their work well and correctly and have the ability to carry out analysis and evaluate problems in the project.

Afrer analysis of this research, now discussion of results it can be said that there are other question indicators related to the PBL learning model which must also be asked to respondents regarding cost considerations which must also be calculated, so that every project carried out, especially tailor made from industry or companies, will bring benefits, not only the transfer of appropriate knowledge, but also real costs. The results of the researcher's observations during the registration course and interviews with the head of the D4 MICE-PNJ study program showed that it was very easy for students to learn the material for each topic in the Registration course, namely: types of registration in MICE events, registration staff, designing forms, event layout, logistics check list, venue determination, event planner competency, payment methods, and

project work registration are easy to understand and apply. Apart from that, it can be given an overview of the results that the PBL model for the Registration course has had an impact on improving the quality of learning in the MICE study program and has answered the needs of competent students in the digital era [26, 28, 29]. Life-based learning focuses on a person's life at any time and any learning source. Furthermore, life-based learning focuses on developing a person's will and ability as a whole in meeting all his life needs. Vocational education as one of the institutions for developing human resources has an important role in transforming new competencies [11, 23, 30, 31]. Vocational education is required to be adaptive to the industrial revolution 4.0 to become a sustainable development [17, 23, 29].

4. Conclusion

Referring to the problems and results of research discussions regarding PBL learning implementation strategies in improving the quality of learning in the current digital era, by taking the research locus on PBL implementation in the Registration course, the following conclusions such as: the PBL model is a learning model that can be used in registration courses where the PBL results have made students able to apply problem solving, carry out projects, PBL has made students more competent and professional. able to increase student learning motivation, teamwork becomes stronger, autonomy, good time management and practical experience working on projects. PBL has encouraged creativity and students' ability to improve their scientific mastery of the projects they are working on. Likewise, the PBL model has been able to lay a strong foundation for not only students but also teachers in an effort to improve the quality of learning using the PBL model as an answer that is adaptive to the MBKM curriculum in today's digital era education.

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