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Indonesian vocational college students' attitudes towards project-based learning in English courses

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ABSTRACT

Following the mandatory adoption of project-based learning (PjBL) in Indonesian vocational education, there has been a revival in popularity as a prevalent instructional approach in higher education. However, no research on students' attitudes toward mandatory PjBL in Indonesia has raised concerns about its acceptance. This article describes Indonesian vocational college students' attitudes toward PjBL in English language courses. The study specifically focuses on cognitive, affective, and behavioral attitudes and how students perceive the advantages of PjBL for their English skills and career aspirations. This quantitative study included 336 Indonesian vocational students from twelve state and private colleges in Indonesia. The results of this study revealed that students had a positive attitude toward PjBL in their English courses. Students' cognitive, affective, and behavioral attitudes indirectly influenced their career aspirations, with English skill benefits acting as mediators. This study proves that how students feel, think, and behave affects their future career goals by shaping how they perceive improvement in their English language skills.

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1. INTRODUCTION

Project-based learning (PjBL) holds prominent status in vocational education in Indonesia, particularly since the issuance of the regulation of the director general of vocational education number 27 of 2022 concerning guidelines for implementing PjBL in higher education providers of vocational education. This regulation is structured as a reference for implementing PjBL in tertiary institutions that provide vocational education throughout Indonesia. Although PjBL has long been acknowledged in Indonesian vocational education and training (VET), it serves as the foundation for its inclusion as a key performance indicator for state universities in Indonesia.

Project-based learning has been widely implemented in foreign-language learning in Indonesia. Research has shown the importance of incorporating PjBL into English for specific, vocational, and occupational purposes for students [1]–[4] It has benefited educators in supporting learners' English language learning. In the context of Indonesian vocational students, PjBL has been associated with students speaking skills [5], [6], writing skills [7], listening skills [8], [9], and reading skills [10]. To enhance language learning, PjBL provides students with the necessary workplace skills desired by employers [11] since language competency has become the core [12] to cater to global industrial demands. Knowing and proficiency in foreign languages, particularly English is a requirement for employment [13], [14]. Language and communication serve as resources that facilitate individuals to demonstrate their ability to be pliant and

versatile and to construct and reconstruct their identities in response to the demands of dynamic and highly volatile work environments and professional standards [15]. the Indonesian government pays close attention to English language competency when preparing college graduates for the workforce.

Furthermore, mass implementation of PjBL in vocational colleges in Indonesia has attempted to address the mismatch between vocational graduates and industry demands. A long-standing challenge in Indonesia is the link between vocational graduate competencies and workplace requirements. Indonesia has the second highest unemployment rate in the Asia-Pacific region [16] with vocational graduates constituting the majority [17]. There is a gap between the education system and qualifications in the job market and industry requirements in Indonesia [18]. As a result, the mismatch between graduates' competencies and industry demands creates unemployment [19]. The enforcement of PjBL in VET in Indonesia aims to address skill mismatch to industry demands [4], [20], [21]. With PjBL, it is expected that Indonesian vocational graduates possess skills that meet the demands of the workforce [17]–[19] in addition to content knowledge.

Attitude plays a vital role in the reception of newly introduced regulations for the implementation of PjBL in Indonesia. People build attitudes that originate from their mental processes, such as feelings and perceptions. Ajzen has categorized three domains of response toward the object of attitude, which are cognitive, behavioral, and affective responses. Attitude encompasses cognitive perceptions and beliefs, affective likes and dislikes, feelings or evoked emotions, and behavioral actions or expressed intentions directed towards an object, based on the individual's cognitive and affective responses [22]. The cognitive aspect pertains to the person's thoughts and perceptions of the object, the affective element deals with the individual's emotional response such as liking or disliking, and the behavioral component relates to the person's actions directed towards the object of the attitude [23]. Several studies have reported students' positive attitudes toward PjBL [24]–[27].

Authenticity in PjBL also strengthens students' career aspirations, long-term hopes and ambitions [28], since PjBL bridges the gap between education and employment. PjBL mirrors real-life problems [29]–[31] that facilitate employability [32]–[34]. The outcomes of PjBL should focus on equipping vocational students with the skills necessary to meet industry demands. Consequently, students studying English do not do so to fulfill course requirements, but rather prepare for their future careers.

While PjBL is a crucial aspect of education, very few studies have investigated students' attitudes towards its implementation. Given that Indonesian vocational college students have recently been assessed based on their performance in PjBL, it is essential to understand their attitudes towards the implementation of this approach, as well as their English language skills and career aspirations. This study sought to evaluate the attitudes of students towards the implementation of PjBL across all vocational colleges in Indonesia, with the aim of determining whether this approach is well received. It also aims to investigate the impact that English lessons acquired through projects can have on students' understanding of the language's relevance to their future careers. This study is one of the first to explore the implementation of PjBL in vocational colleges at a national level. This study sheds light on the government's new policy enforcement regarding the application of PjBL in vocational colleges in Indonesia. This study is expected to guide the advancement and dissemination of PjBL in vocational colleges in Indonesia while ensuring their match with the requirements and preferences of diverse industry demands. Drawing on this research gap, this study aims to gauge Indonesian vocational students' attitudes toward the implementation of PjBL in their English courses. This study sought to determine the following: i) What are the attitudes of Indonesian vocational college students towards PjBL in English courses? ii) Do students' attitudes affect their career aspirations through their perceptions of the benefits of PjBL for their English skills?

2. RESEARCH METHOD

This quantitative study intends to gauge Indonesian vocational college students' attitudes toward the implementation of PjBL in English language courses. An online survey was conducted to collect data from vocational colleges in Indonesia. Data were analyzed using SPSS 26.

2.1. Participants and context

This study included 336 Indonesian vocational students from 12 states and private polytechnics, comprising 126 males and 210 females. Only odd-semester students from the 1st (n=52), 3rd (n=170), 5th (n=95), and 7th (n=19) semesters were included. The online questionnaire was distributed nationwide to polytechnic lecturers, and responses were received from vocational students residing in Kalimantan, Java, Sumatra, and Sulawesi. Of the 362 completed questionnaires, 26 were excluded as they were filled out by students not enrolled in polytechnics or lacking prior exposure to project-based learning in English for specific purpose (ESP) courses. The sample of this study is considered adequate since an appropriate sample size in path analysis should be at least ten times the number of parameters [35]. The questionnaire was administered anonymously.

In the online questionnaire, students were instructed to write down the PjBL they had experienced in an English language course. They may write about more than one PjBL implementation, including those that they had received in their previous semesters. Table 1 presents the projects vocational college students undertook as part of their English courses. Given that the participants in this study came from different programs, the projects they worked on were also diverse.

Table 1. Project-based learning in English language course

Project-based learning language course					
1	Making video presentation	10	Making a video of a job interview	19	Making proposal
2	Making a video of the news report	11	Making short film	21	Making infographics
3	Making self-introduction video	12	Tourism destination visit	21	Making posters
4	Making interview video	13	Making tour package	22	Making brochure
5	Making video telling opinion	14	Holding English expo	23	Field observation
6	Making a food review video	15	Making itinerary	24	Making activity report
7	Making entrepreneurship video	16	Making business plan	25	Drama
8	Making financial report	17	Article review	26	Product presentation
9	Making promotion video	18	Tourism design	27	Making tender document

2.2. Instrument

The questionnaire in this study was divided into three parts: i) vocational college students' attitudes toward PjBL, comprising cognitive, affective, and behavioral attitudes; ii) benefits for English skills; and iii) career aspirations. The first part of the questionnaire was adapted from Tran and Tran [35]. The second and third parts of the questionnaire were added considering the Regulation of the Director General of Vocational Education Number 27 of 2022 concerning guidelines for implementing PjBL in Higher Education Providers of Vocational Education of the Republic of Indonesia. Learning activities in vocational colleges are now directed to students' career aspirations and English language proficiency. The survey was designed using a Likert scale comprising five response options ranging from finally "strongly agree" (5), through "agree" (4), "neutral" (3), "disagree" (2), and finally "strongly disagree" (1).

This study consisted of 5 constructs and 18 items. A validity test was conducted before the questionnaire was administered to the 30 vocational college students. Using Pearson's correlation, the validity test showed that all items were valid since it was more than the r table (0.374). A reliability test was performed using Cronbach's alpha test. A Cronbach's alpha value of 0.952 was obtained, which was greater than 0.6. Thus, these items were deemed reliable.

2.3. Data analysis

Data analysis was performed using SPSS 26 software. Students' attitudes were determined from the mean score and standard deviation of each item, as well as per indicator. A normality test was performed prior to analysis. The results of the normality test using the Kolmogorov-Smirnov test showed that the data obtained was not normally distributed with a significance value of less than 0.05 ($p=0.000 <0.05$). Based on these results, comparisons between categories were performed using a nonparametric test, namely, the Kruskal-Wallis test. Path analysis was conducted to examine the effect of the inter-variables cognitive, affective, and behavioral attitudes on career aspirations mediated by the benefits of English skills. Path analysis was possible because all classical assumptions were fulfilled. A Sobel test was conducted to examine the mediating effect of benefits on English skills. The results of the classic assumption test, namely the residual normality test using the normal P-P plot graph, show that the points reflecting the standardized residual coincide with the diagonal line; thus, it is stated that the model residuals are normally distributed. The heteroscedasticity test using the standardized predicted value (ZPRED) and studentized residual (SRESID) scatterplots showed that the data points were spread randomly and did not form a certain pattern. Therefore, it was stated that there was no heteroscedasticity problem in the model. These results demonstrate that the classical assumptions are fulfilled.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Attitude of Indonesian vocational college students towards PjBL in English language courses

Five variables were examined in this study. The independent variables were cognitive, affective, and behavioral attitudes, while the mediating variable was the benefits for English skills. The dependent variable was career aspirations. The cognitive attitude responses averaged 3.99 (SD=0.72), indicating a good category. The highest average (4.15) was in "Project-based learning hones my communication skills," and the

lowest (3.78) was in "My independent learning ability is honed in completing projects." Affective attitude responses averaged 3.64 (SD=0.86), indicating a good category. The highest average (3.91) was in "I enjoy participating in project-based learning," and the lowest (3.46) was in "Project-based learning activities are less stressful than other learning methods." Behavioral attitude responses averaged 3.85 (SD=0.71), indicating a good category. The highest average (3.97) was in "I pay more attention to the teacher's explanation so that the projects I work on are improved," and the lowest (3.73) was in "I organize my learning independently to succeed in the project I am working on." Benefits of English responses averaged 3.78 (SD=0.71), indicating high benefits. The highest average (3.86) was in "I practice speaking when working on the project," and the lowest (3.71) was in "I practice writing when working on the project." Career aspirations responses averaged 4.15 (SD=0.71), indicating high benefits. The highest average (4.21) was in "Project-based learning is an exercise for me to be ready for the workplace," and the lowest (4.11) was in "I think project-based learning will be useful for my career aspiration." Descriptions of the respondents' answers can be seen in Table 2.

Table 2. Description of respondents' answer

No	Statement	N	Min	Max	Mean	SD
	Cognitive attitude	336	1	5	3.99	0.72
1	Project-based learning sharpens my creativity	336	1	5	4.13	0.72
2	Project-based learning sharpens my critical thinking	336	2	5	4.01	0.65
3	Project-based learning honed my decision-making skills	336	2	5	3.96	0.67
4	Project-based learning hones my problem-solving skills	336	2	5	3.89	0.71
5	Project-based learning hones my communication skills	336	2	5	4.15	0.69
6	My independent learning ability is honed in completing projects	336	1	5	3.78	0.77
7	Project-based learning helps me assess the learning process that I and my team are doing	336	2	5	4.01	0.73
	Affective attitude	336	1	5	3.64	0.86
1	I enjoy participating in project-based learning	336	1	5	3.91	0.78
2	Project-based learning activities are less stressful than other learning methods	336	1	5	3.46	0.91
3	I want project-based learning to continue in my English class	336	1	5	3.54	0.81
	Behavioral attitude	336	1	5	3.85	0.71
1	I pay more attention to the teacher's explanation so that the projects I work on are improved	336	2	5	3.97	0.68
2	I organize my learning independently to succeed in the project I am working on	336	1	5	3.73	0.72
	Benefits for English skills	336	1	5	3.78	0.71
1	I learn a lot of English vocabulary with project-based learning	336	2	5	3.77	0.71
2	I practice speaking when working on the project	336	2	5	3.86	0.69
3	I practice writing when working on the project	336	1	5	3.71	0.72
	Career Aspiration	336	1	5	4.15	0.71
1	I think project-based learning will be useful for my career aspiration	336	2	5	4.11	0.72
2	Project-based learning hones soft skills that might be useful for my career aspiration	336	1	5	4.14	0.71
3	Project-based learning is an exercise for me to be ready for the workplace	336	2	5	4.21	0.71

3.1.2. The influence of cognitive, affective, and behavioral attitudes on students' perception of the benefits of PjBL for career aspiration mediated by benefits of PjBL for English skills

The next step was to examine the effect of the inter-variables cognitive, affective, and behavioral attitudes on the benefits of career aspirations mediated by the benefits of English skills. The flow of this section is illustrated in Figure 1. Path analysis was conducted, and the tests for classical assumptions yielded satisfactory results, with normal distribution observed in the residuals based on the normal P-P plot graph and no evidence of heteroscedasticity found in the ZPRED and SRESID scatterplots. Therefore, classical assumptions were met in the model.

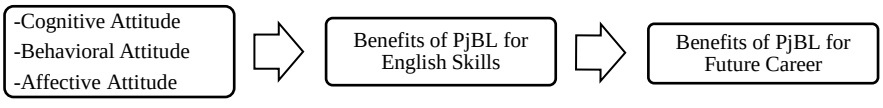

Figure 1. The flow for answering the second research question

Table 3 shows the effect of cognitive, affective, and behavioral attitudes on career aspirations, mediated by benefits for English skills, is explained through two equations. In the first equation, cognitive attitude (β=0.245, p=0.000), affective attitude (β=0.200, p=0.000), and behavioral attitude (β=0.293, p=0.000) significantly and positively affect the benefits for English Skills at the 5% significance level. This

implies that higher levels of cognitive, affective, and behavioral attitudes lead to greater benefits for English skills. In the second equation, cognitive attitude (β=0.345, p=0.000), affective attitude (β=0.109, p=0.044), behavioral attitude (β=0.145, p=0.015), and Benefits for English skills (β=0.171, p=0.002) also had a direct positive and significant effect on Career aspiration at the 5% significance level. This suggests that improved cognitive, affective, and behavioral attitudes and the benefits of English skills in students result in greater benefits for their career aspirations. The test of the indirect effect was calculated using the Sobel test, where the test results showed that cognitive attitude (β=0.042, p=0.017), affective attitude (β=0.034, p=0.019), and behavioral attitude (β=0.050, p=0.009) had positive and significant indirect effects at the 5% significance level on career aspirations by mediating the benefits of English. The findings suggest that students with stronger cognitive, affective, and behavioral attitudes toward English language skills will reap greater benefits, which will indirectly have a significant effect on their future career aspirations.

Table 3. Path test results

Independent variable	Path coef.	SE	t count	p	Description
Dependent variable: Benefits for English skills					
Cognitive attitude	0.245	0.064	3.833	0.000	Significant
Affective attitude	0.200	0.054	3.708	0.000	Significant
Behavioral attitude	0.293	0.058	5.018	0.000	Significant
Dependent variable: Career aspiration					
Cognitive attitude	0.345	0.064	5.387	0.000	Significant
Affective attitude	0.109	0.054	2.020	0.044	Significant
Behavioral attitude	0.145	0.060	2.436	0.015	Significant
Benefits for English skills	0.171	0.054	3.165	0.002	Significant
Mediation variable: Benefits for English skills					
Dependent variable: Career aspiration					
Cognitive attitude	0.042	0.018	2.392	0.017	Significant
Affective attitude	0.034	0.015	2.358	0.019	Significant
Behavioral attitude	0.050	0.019	2.646	0.009	Significant

3.2. Discussion

This study was conducted at the beginning of the mandatory implementation of PjBL in vocational colleges in Indonesia. This study found that Indonesian vocational college students had a positive attitude toward the implementation of PjBL in their English courses. Since previous studies have mostly examined university students, this study indicates that vocational students also have a positive impression of PjBL in their English classrooms. Thus, since vocational students spend more time on practical knowledge, PjBL is ideal for implementation in English classrooms. This study echoes previous studies that PBL can have a positive effect on students' attitudes toward content subjects [27], [36], [37] as contradicted with [38] who state no difference in students' attitudes toward the implementation of PjBL. PjBL provides authentic use of language [34], [39]–[41]. Since vocational college is skill and training-focused, and less theoretical than a university setting, it places higher value on practical knowledge than on theoretical knowledge [42]. Within the context of VET, learning content is commonly perceived as concrete and particularized, and vocational learning incorporates physical labor and interactions between participants and artifacts [43]. This suits UNESCO's description that the current TVET practice in Indonesia shifts the vocational education paradigm to more practical skills than theoretical knowledge.

This research demonstrated that cognitive, affective, and behavioral attitudes indirectly influence students' career aspirations through their perceptions of the benefits of PjBL on their English language skills. This study showed that the way students think, feel, and behave indirectly affects their career goals. This influence occurs through how they perceive the benefits of PjBL on their English language skills. Knowing that English will be useful for their career aspirations, students develop a positive attitude toward the implementation of PjBL, which underlines the importance of raising their awareness of the importance of English. It is necessary to ensure that students can see the connection to realize that what they learn in college is useful for their careers. When students make connections between their experiences and the educational information provided, their learning outcomes improve. Thus, students study English for long-term purposes instead of merely fulfilling their obligation to pass the subject.

Rapid changes due to the industrial revolution have spurred swift transformations and evaluations of the competencies required by the labor market [18]. PjBL is a perfect match for implementation in English courses at vocational colleges in Indonesia. This study demonstrates the potential of PjBL as a promising pedagogical method in English language courses to increase student employability, which is the primary goal of vocational education.

4. CONCLUSION

The results of this study suggest that students have a positive attitude towards PjBL in their English classes. The new regulation promoting PjBL among vocational students in Indonesia has been well-received, as evidenced by various positive indicators. The study found that students' perceptions of the benefits of PjBL on their English skills influenced their cognitive, affective, and behavioral attitudes, which in turn influenced their career aspirations. This study suffers from limitations given that it was conducted on a national scale and the detailed activities of PjBL were not explored because they were diverse from place to place. Future studies are expected to specify and solicit the types of PjBL implemented in vocational colleges during English lessons. In addition, vocational college stakeholders must anticipate rapid industrial changes by changing their mindsets and trying new pedagogical instructions to lessen the gap between vocational graduates and industry requirements.

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