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Students' Perception: The Technology Integration into Project-Based Learning in Writing Class

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ABSTRAK

Pembelajaran Berbasis Proyek berbantuan teknologi adalah strategi pengajaran inovatif yang dibawa oleh teknologi informasi dan komunikasi yang tak terbatas. Penelitian ini bertujuan untuk mengetahui persepsi siswa tentang integrasi teknologi ke dalam Pembelajaran Berbasis Proyek di kelas menulis. Studi ini mengadopsi desain metode penelitian sequential explanatoryl. Sebanyak 98 siswa bahasa Inggris setuju untuk berpartisipasi dalam penelitian ini. Data dikumpulkan melalui formulir kuesioner dan wawancara untuk mendukung temuan dari kuesioner. Data dianalisis dengan menghitung hasil kuesioner menggunakan analisis deskriptif kuantitatif dan didukung dengan deskripsi dan interpretasi kualitatif. Temuan ini mengungkapkan bahwa siswa merespons positif Pembelajaran Berbasis Proyek dengan bantuan teknologi. Tujuh item ranah afektif menunjukkan siswa memperoleh pengalaman positif selama integrasi teknologi. Selain itu, enam item ranah kognitif menunjukkan persentase yang tinggi yang menunjukkan respon positif siswa. Terakhir, dua ranah psikomotorik menunjukkan bahwa teknologi mendorong mereka untuk lebih aktif dan antusias. Oleh karena itu, hasil ini menyiratkan bahwa guru dan siswa harus merangkul integrasi teknologi untuk meningkatkan proses dan hasil pembelajaran.

ABSTRACT

Technology-assisted Project-based Learning is an innovative teaching strategy brought by the inevitability of information and communication technology. The present study examined the students' perception of technology integration into Project-based Learning in writing class. The study adopted an explanatory sequential mixed-method design. A total of 98 English students agreed to participate in the study. The data were collected through close-ended questionnaire forms and interviews to support the findings from the questionnaires. The data were analyzed by calculating the questionnaire responses using descriptive quantitative analysis and supporting them with a qualitative description and interpretation. The finding revealed that the students responded positively to technology-assisted Project-based Learning in their writing class. Seven items of the affective domain showed the students obtained positive experiences during the technology integration. Besides, six items of the cognitive domain also showed high percentages that indicated students' positive responses. Lastly, two items of the psychomotor domain showed that the technology encouraged them to be more active and enthusiastic. Therefore, this result implies that teachers and students should embrace technology integration to improve learning processes and outcomes.

1. INTRODUCTION

Writing is one of the crucial skills that language students should develop. This skill has also been considered an important communication skill for language students (Rao & Durga, 2018). In learning writing skills, five dimensions of writing should be concerned: content, organization, structure, vocabulary, and mechanics (Dwiyanti & Suwastini, 2021; Manik & Suwastini, 2020; Toba et al., 2019). These five dimensions are used as indicators of language learners' competence (Hidayati, 2018). However, some research discovered that students had difficulties related to those dimensions when composing their writing (Adnyani et al., 2021; Maheswari et al., 2020). An inappropriate teaching strategy was one reason causing these problems (Abhari & Salehi, 2021; Mahmood, 2020). Furthermore, another cause is some teachers still do not conduct the lesson based on curriculum 13 (K-13). In this case, this curriculum requires

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teachers to assign meaningful tasks for the students where they can use the knowledge and skills they learn in real life (Ratminingsih et al., 2018). However, most teachers still conduct a controlled writing activity focused only on textbooks. As a result, the student's writing skills cannot be optimally improved.

Concerning these problems, considerable studies have been conducted to find appropriate teaching strategies for writing. Among the existing strategy, Project-Based Learning has become one strategy used to improve learners' writing skills (Rahmawati et al., 2020; Sa'diyah & Cahyono, 2019; Yunus et al., 2020). Project-Based Learning is a strategy focusing on a student-centered that implements the concept of 'Learning by Doing' (Apriliani & Listyani, 2021). Moreover, it has been considered the strategy that can provide students with meaningful tasks that can be useful in real life (Apriliani & Listyani, 2021; Somani & Rizvi, 2018).

The effects of Project-based Learning on writing classes have been argued widely. Many research found that this strategy could improve learners' writing skills (Alotaibi, 2020; Lu, 2021; Qing, 2019; Yamada, 2021). Besides, it also could enhance students' creativity, participation, and self-reliance (Aghayani & Hajmohammadi, 2019; Alotaibi, 2020; Ismuwardani et al., 2019). Other studies have also been conducted, yet technologies were integrated into the implementation of this strategy. Quasi-experimental studies were conducted, which resulted in the improvement of learners' writing skills (Aghayani & Hajmohammadi, 2019; Sa'diyah & Cahyono, 2019; Somani & Rizvi, 2018). Undoubtedly, technology can promote innovative learning in this 21st-century context. Thus, many argue that the learning process should be integrated with technology to increase learners' critical thinking, communication, collaboration, and digital literacy skill (Alakrash & Razak, 2021; Albiladi, 2022; Daweli, 2018; Hazaymeh, 2021). Regarding these benefits of technology, the present study considers the importance of integrating technology into the learning process. Thus, it aimed to examine learners' perception of technology integration in the implementation of Project-Based Learning. This study aimed to investigate the learners' perception as their perception is a valuable thing that significantly contributes to learning success (Yulia & Paseleng, 2021). They argued that when the learners have positive perceptions of the learning process, they will be more engaged, which leads to their learning success. Different from other studies focused on quasi-experimental research to examine the effect of Project-based learning, therefore, this study aimed to examine learners' perceptions of the technology integration into Project-based Learning to ensure the effectiveness of this strategy of teaching writing.

2. METHOD

This study employed an explanatory sequential mixed method where quantitative data were analyzed first to build on the results and were supported by qualitative data to get more detailed results (Creswell & Clark, 2011). The phases of an explanatory design are presented in Figure 1.

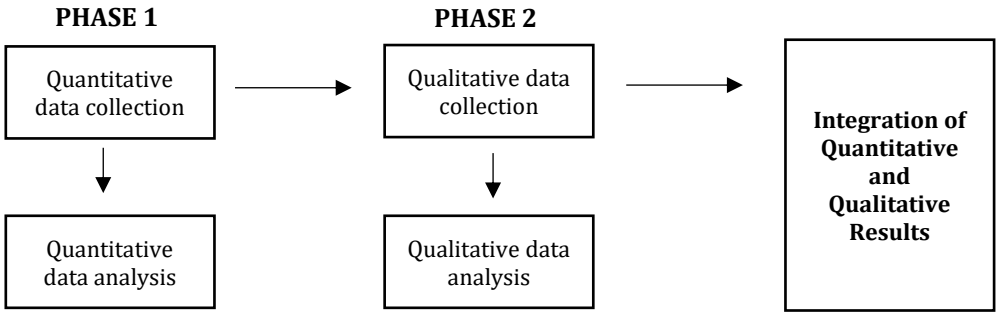

Figure 1. The Phases of Explanatory Design

As presented in Figure 1, two phases of data collection and analysis were conducted. In the first phase, quantitative data of the current study were conducted by a survey as a data collection method. In this phase, close-ended questionnaires were distributed to the sample of the study. The questionnaire contains 15 items in total which are divided into 3 learning domains, such as affective, cognitive, and psychomotor domains. The results of the questionnaires were analyzed through descriptive data analysis by calculating each item of the questionnaire responses in each learning domain. Then, the quantitative results were supported by qualitative data collection in the second phase. In the second phase, the qualitative data were collected through interviews and were interpreted by qualitative data analysis. In this case, qualitative data collection through the interview was conducted to reveal the reasons behind the students' responses to the questionnaires.

The study involved the eighth-grade students of SMPN 1 Gianyar, located in Bali, as the research population. Cluster random sampling was used to select two of eight classes that consisted of 98 students

in total as the research sample, namely VIII A and VIII C. As mentioned previously, the data were collected through close-ended questionnaire forms that were divided into three domains of learning, such as affective, cognitive, and psychomotor learning domain. The Likert scale with five options was used to score the questionnaire items. Those options include five statements, such as SA= Strongly Agree, A= Agree, N= Neutral, D= Disagree, SD= Strongly Disagree. The empirical validity was conducted by finding the correlation among items. The Pearson correlation was used to test if there is a correlation among items. The items are categorized as correlating if the value of Sig. (2-tailed) is lower than 0.05. Based on the validity result, the Sig. (2-tailed) value of all items is below 0.05 which indicates there is a correlation among items. In other words, it indicates that the instrument is valid.

3. RESULT AND DISCUSSION

Result

The effectiveness of using various technologies in Project-based Learning viewed from three domains of learning are illustrated in the Table 1, Table 2, and Table 3.

Table 1. Questionnaire Result on Students' Perception of Their Affective Domain

No	Statements	SA %	A %	N %	D %	SD %	n %
1	Learning writing through the use of various technologies in Project-based Learning was effective	27	53	20	0	0	100
2	Through the use of various technologies, I felt comfortable participating in the writing class during the Project-based Learning	26	47	11	16	0	100
3	Through the various technologies used, the writing activity became more fun	55	39	6	0	0	100
4	I felt motivated to create a project due to the use of various technologies	17	46	14	23	0	100
5	Mentimeter and video used in the opening activity could increase my motivation to be engaged in the learning process	36	55	9	0	0	100
6	Through the use of various technologies, I felt confident to use my writing skill during the class	22	31	17	30	0	100
7	The use of technologies in the Project-based learning class made me excited to finish the project given by the teacher	16	48	20	16	0	100

As illustrated in Table 1, the questionnaire results showed that the students generally exhibited positive responses to technology-assisted Project-based Learning for their affective domain. Item 1 showed that 80% of the students deemed using various technologies was positive for them. Next, 73% of them agreed that technology could make them comfortable, which was revealed in item 2. Then, 94% of them expressed their positive responses in item 3 which states technology could make the activity more fun. In terms of motivation in creating a project, Item 4 also showed positive responses from 63% of the students. Besides, students' motivation was also presented in item 5 which revealed that 91% of them felt motivated in the opening activity. Meanwhile, in terms of confidence, the findings were quite interesting for item 6, which showed a slight difference between students' perceptions. Item 6 showed that 53% of the students agreed, 17% were not sure, and 30% of them disagreed. Lastly, in terms of students' excitement, item 7 revealed that 64% claimed that they were excited to finish their projects. Therefore, these higher percentages of each item indicated that the students obtained positive experiences during the technology integration, viewed from their affective domain. Next, Table 2 shows the questionnaire results based on the cognitive domain.

Table 2. Questionnaire Result on Students' Perception of Their Cognitive Domain

No	Statements	SA %	A %	N %	D %	SD %	n %
8	Through the use of various technologies in the Project-based learning class (i.e., Mentimeter and video), I felt easier to generate the idea for creating a project given by the teacher	28	67	5	0	0	100

No	Statements	SA %	A %	N %	D %	SD %	n %
9	The video played at the beginning of the lesson helped me to get the idea for writing the project	19	50	26	5	0	100
10	The use of Canva to design the project made me think creatively during the process	40	58	2	0	0	100
11	Padlet helped me evaluate my project easily	19	45	22	14	0	100
12	Evaluation through Padlet was effective to correct the grammar, punctuation, and spelling of my project	5	48	19	28	0	100
13	After following the lesson, I felt that my writing ability is getting better	12	52	36	0	0	100

The same with data found in Table 1, the students' responses regarding technology-assisted Project-based Learning for their cognitive domain also indicated positive perceptions. Item 8 presented that 95% of students agreed that technology could help them in generating their idea. Then, 69% of them agreed with item 9, which showed the use of technology to enable their ideas in writing their projects. Item 10 showed the greatest percentage in which 98% of the students felt that technology could stimulate them to think more creatively. Meanwhile, in terms of evaluation, item 11 only showed that 64% of the students agreed on the easiness of using technology to evaluate their project. Item 12 also showed that 53% of them agreed on the effectiveness of using technology in their writing evaluation. Lastly, 64% of the students agreed on the use of multiple technologies could impact their writing positively. Therefore, based on the results in this cognitive domain, it could be interpreted that the technologies were effective, the same with data in the affective domain. Furthermore, the psychomotor domain is presented in Table 3.

Table 3. Questionnaire Result on Students' Perception of Their Psychomotor Domain

No	Statements	SA %	A %	N %	D %	SD %	n %
14	Through the use of various technologies in the Project-based learning class, I felt more active to participate in the writing process	34	58	0	8	0	100
15	Through the use of various technologies in the Project-based learning class, I feel more enthusiastic during group discussion	53	39	8	0	0	100

As presented in Table 3, the questionnaire results also showed that the students also generally exhibited positive responses to technology-assisted Project-based Learning for their psychomotor domain. Item 14 showed that 92% of students agreed that technology could stimulate students' motivation in participating during writing activities. Lastly, the same percentage was also shown in item 15 which states technology could make the students more enthusiastic during the writing process, especially in group discussions. Therefore, the psychomotor domain revealed that technology used in writing class obtained positive responses from the students.

Furthermore, the interview result supported the questionnaire result that revealed the students responded positively to the use of various technologies in Project-based Learning. Some students' perceptions of each learning domain as representative were presented in the tables. On the affective domain, some students expressed their comments about the use of technology.

As commented by some representatives regarding the affective domain, the students claimed that multiple technologies used during writing class were exciting and fun. Those technologies also made them confident and interested to join the class. Despite the effectiveness of the technologies, the students also expressed their inconvenience towards the technologies used. Some of them argued they were not excited because of some issues related to the use of technology. The issues included an unstable connection, lack of internet quota, and incompatible devices to access the platforms. These issues led to their inconvenience and even made them demotivated to learn.

Based on students' responses related to the cognitive domain, the students claimed that multiple technologies used in the Project-based learning class were helpful for them during their writing class. Even though some expressed their inconvenience towards the use of video and Padlet, they stated that the video and Padlet actually made them motivated and easier compared to a conventional teaching strategy that does not involve technology in its process. Some students also suggested that the video could be more effective if its duration was longer and provided some examples for the students. Regarding the use of Padlet

as an evaluation, some students argued this platform made them insecure when they saw their works were not as good as others. However, despite this argument, a higher percentage of students expressed their positive responses towards the use of multiple technologies including the video and Padlet during writing class, as shown in questionnaire results. Additionally, most students felt they made better improvements in their writing compared to conventional ones.

The students' perspectives of their psychomotor domain toward the use of technologies in Project-based learning class resulted in positive. They claimed that technologies were more interesting when they worked on their projects than paper-based ones. It could make them more enthusiastic so that they could be more engaged during the writing class. Even though some students revealed their hesitation and inconvenience due to a lack of technical skills among students yet they generally exhibited positive responses to technology-assisted Project-based Learning. Therefore, the questionnaire and interview results revealed that integrating various technologies resulted positively in students' perceptions, viewed from three domains of learning.

Discussion

The questionnaires and semi-structured interview results revealed that technology-assisted Project-based Learning during writing class received positive responses from the students, viewed from three learning domains. In the affective domain, the findings showed that using multiple technologies was influential during Project-based Learning since the technologies led the teaching and learning process to become exciting, comfortable, and fun. Thus, the students felt more motivated, excited, and confident in finishing their projects. The interview also emphasized that the students were more motivated as the digital technology offer them with variety of adorable features, especially Padlet and Canva. These findings were supported by considerable research that proved integrating more technologies into Project-based Learning could encourage students to participate (Sa'diyah & Cahyono, 2019). Besides, the findings also go in line with a similar study that stated the use of digital technology made students more enthusiastic and creative to write in English (Alsied, 2019; Yundayani et al., 2019). Digital technology offers many varieties of interesting activities that could make them excited about writing. Other similar studies also showed that the use of technology could make them interested to participate in the teaching and learning process (Kawinkoonlasate, 2019; Mudra, 2020). These studies implied that technology-assisted Project-based Learning could make students more motivated since they study the thing that they are interested in.

Other studies also proved that digital technologies including Canva and Padlet belong to innovative learning tools that could be integrated into writing classes (Hadi et al., 2021; Lestari & Chasanatun, 2018; Taufikurohman, 2018; Yundayani et al., 2019). These platforms allow students to design their writing projects based on their preferences. It was found that Padlet was interesting as the students could post their work by designing the wall with different colors and adding pictures, videos, and many others to it (Lestari & Chasanatun, 2018). Canva was also found interesting for students as it offers them many choices of the poster with attractive models and colors (Hadi et al., 2021; Yundayani et al., 2019). Despite the effectiveness of these digital technologies, the finding showed that some students also expressed their inconvenience towards the technologies used. Some of them argued they were not excited because of some issues related to the use of technology. The issues included an unstable connection, lack of internet quota, and incompatible devices to access the platforms. These findings go in line with some similar studies that stated some technical issues related to the use of digital technologies, such as incompatible devices, weak internet coverage, and internet interruption (Albogami, 2022; Hernandez & Flórez, 2020; Nhu & Dan, 2022). Therefore, the students' perceptions of technology-assisted Project-based Learning were generally positive despite the technical issues that occurred.

The findings in the cognitive domain as the second learning domain also indicated students' positive responses. The findings showed that technologies could make students think creatively during the writing process. The platforms used during writing class also generally helped them in generating ideas for their projects. Moreover, technology-assisted Project-based Learning also helped them evaluate their work. The findings implied that digital technologies helped them to correct their writing components easily, such as grammar, punctuation, and spelling. These findings go in line with a similar study conducted on Arab EFL students (Almelhi, 2021). The research indicated that Arab EFL students have inadequate writing skills where they commonly made mistakes in vocabulary, grammar, mechanics, and content due to the failure of teaching writing strategy. However, this study implied that the students could improve their writing skills due to the technology used in the writing class. Another similar study that supported the findings also showed that students improved in writing due to the use of technology (Wu et al., 2020). This study argued that the students gained coherent idea organization and appropriate usages concerning writing mechanics and they were not afraid of writing in English anymore due to the feedback they got on the platform.

Similar to the current findings, Padlet helped the students to correct their mistakes in grammar, punctuation, and spelling since this platform offers a feedback feature for the students. The students could give feedback directly on this platform easily in the form of comments and likes. However, the findings also revealed that some shy students expressed their inconvenience using Padlet as they felt insecure to post their projects that can be seen easily by others. Similar research found that Padlet made shy students more insecure, yet it is effective as it is easy to use and exciting for students (Syahrizal & Rahayu, 2020). In this way, the shy students would be encouraged to participate more during the process. Despite these arguments, the current findings implied that technology integration is generally effective for students' cognitive domain as the technology could be innovative for brainstorming and evaluating language students (Shirvani & Porkar, 2021). However, the teacher should fully consider the use of each technology to maximize their cognitive domain.

Furthermore, the findings related to the psychomotor domain as the last learning domain resulted in positive. The findings showed that most students expressed their activeness and enthusiasm in joining the lesson due to the technology integration. These findings were supported by similar research that proved integrating several digital technologies could show students' enthusiasm for writing (Williams & Beam, 2019). They no longer felt the process boring since they wrote in fun ways because of the exciting features offered by the platforms. A similar study also found that integrating technology into the class could make the students learn more actively in writing activities instead of being passive learners (Alied et al., 2022; Chatta & Haque, 2020). The features of each technology encouraged the students to be more engaged during the process (Chatta & Haque, 2020). However, another research argued that these technologies varied in features and functions so teachers still need to consider the function of each technology to meet the student's needs (Zhang & Zou, 2021). These findings implied that the students generally become more active and enthusiastic to participate in writing activities due to the interactive nature of technologies. For that reason, it can be said that technology-assisted Project-based Learning could make writing lessons more interesting, contextual, innovative, and engaging. Therefore, the students generally exhibited positive responses to the use of technology in Project-based learning for their affective, cognitive, and psychomotor learning domains.

4. CONCLUSION

Technology-assisted Project-based Learning has been responded to positively by the language students for their writing classes, viewed from their affective, cognitive, and psychomotor learning domains. Those learning domains showed positive responses from the students which means the use of technology resulted in positive compared to the conventional teaching strategy. Due to the use of technology, most students expressed their activeness, enthusiasm, convenience, and writing improvement while implementing Project-based Learning. However, it cannot be denied that a small proportion of students argued that somehow technologies made them inconvenient due to technical issues during the process, such as weak internet coverage, incompatibility of devices, and lack of quota internet. As a result, more preparation should be well arranged and considered by the teacher before integrating a particular technology into the classroom. Despite the technical issues, overall, the technology integration helped the teacher in succeeding in the learning process as the technology received positive responses from the students. Besides, technology-assisted Project-based Learning could also improve the learning processes and their outcomes since the students' enthusiasm and engagement also increased due to the features offered by each technology.

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