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FOSTERING STUDENTS' PRESENTATION SKILL USING INFOGRAPHIC: THE IMPLEMENTATION OF PROJECT-BASED LEARNING IN ENGLISH FOR SPECIFIC PURPOSES

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Abstract

Mastering English skill for students at a vocational institution of higher education is a mounting problem as the students are expected to develop practical English skills in specific disciplinary knowledge and internalize the attitudes and professional values. Implementation of project-based learning (PBL) in teaching speaking particularly the presentation skill can be seen as an alternative to cover both areas as it encourages students to develop higher critical thinking, enhances deep learning and motivates students to be independent learners with exceptional self-management. This article presents the results of the study on the impact of project-based learning on students' speaking achievement particularly their presentation skills and students' perceptions on the PBL stages. Participants were 19 fourth-semester students enrolled in a three-year undergraduate program in Electrical Engineering. The goal of this project was to drive students' engagement in speaking activities and put students in the language-specific setting in which language was naturally used based on the project characteristics. This research employed mixed methods in which the quantitative data, i.e., pre-test and post-test were analyzed using SPSS statistic 21. The finding showed that the correlation coefficient (r) was 0,575. Based on the interpretation scale of correlation coefficient by Guilford (1965), the range of the correlation coefficients is betweenthe range of 0,401-0,700 which means that the correlation is quite strong. Based on the result of analysis using SPSS statistics 21 with 95% level of confidence, it was revealed that $-t_{count} < -t_{table}$ (-6.269 < -2,10092) and the significance value (p_{value}) of 2-tailed was less than 0,05 (0,000 < 0,05). It can be concluded that H1 was accepted and H0 was rejected signifying that there was a significant effect of PBL implementation in improving students' speaking achievement. In addition, this study also analyzed qualitative data collected from google form and focus group discussion to gain students' perception towards the implementation of PBL using infographic. The results of online questionnaire revealed that students experienced deep and autonomous learning through the stages conducted in the project. They gained better understanding on grammar and vocabulary during peer review and showed positive attitude in designing infographics as they could revise the structure of their presentation while designing the infographics' wireframes.

Consequently, learning speaking through project-based learning using infographic helped to enhance students' engagement to series of works within the projects and foster their collaborative and communicative skills while working together in groups. The results showed a significant effect of PBL on students' presentation skills and improve soft skills compatible to workplace requirements. Considering the positive result of this study, PBL is recommended to be applied in teaching speaking for students in higher vocational education as it gives beneficial impact on students' content learning and soft skills.

Keywords: English for specific purposes, infographic, presentation skill, project-based learning, soft skill

Introduction

The process of teaching English for Specific Purposes in vocational higher education presents a challenge because its main goal has to be placed as and complementary element to students' soft skill development and workplace requirements. The classroom activities are designed to meet the goal of assisting students to acquire productive skills and internalize the generic characteristics associated with professional ethics in workplace. Soft skills including collaborative skill, self-management and problem solving are expected to be acquired as an integral part of classroom activities. However, the process of teaching speaking for students in higher vocational education has been centered on traditional approach in which students are required to complete task within a short period of time after students are given theoretical background knowledge in through lecturing.

Previous studies on the implementation of teacher-centered learning or conventional teaching strategy stress on the fact that it hardly contributes benefits to the development of students' collaboration, creativity, communication, and critical thinking. Cristillo (2010:37) alluded that teacher-centered pedagogy is associated with top-down, hierarchal pedagogy and for reinforcing passive learning, rote memorization and hindering the development of higher-level cognitive skills. In this context, teachers act as the main source of information andprovide direct instruction in transferring knowledge to students. Direct instruction as a teacher-centered method, sets the teacher as the one that has main power inthe teaching and learning process, in which he/she supposed to encourage the students to construct their own learning. Instead of having discussion and conversation with the students to develop their ideas, the students are assumed to have little useful knowledge (Astawa, Artini, and Nitiasih, 2017:1149).

The modern focus on student-centeredness in language learning has led many teachers to investigate the benefits of incorporating project-based learning (PBL) into their English-language classes (Noom-ura: 2013). Project-Based Learning (PBL) is a student-driven, teacher-facilitated approach to learning. Learners pursue knowledge by asking questions that have piqued their natural curiosity (Bell, 2010: 39). Praba, Artini, and Ramendra (2018:2) further highlighted that project-based learning provides the opportunity to create productive and enjoyable

classroom atmosphere through the integration of students' knowledge, attitude, and skills.

Student-centered approach such as project-based learning is considered beneficial and relevant to the characteristics and goals of ESP courses. In detail, ESP aims at developing learners' not only language but also professional understanding, which is similar to the principles of PBL (Foss et al, 2007; Petersen & Nassaji, 2017). PBL does help learners explore in-depth the areas or topics that interest them or are related to their careers. Learners will be able to develop both language, specialized knowledge, and other necessary skills through undertaking and completing projects in certain fields (Giang: 2017).

Some researchers have examined the effectiveness of the student-centered approach used in teaching speaking including the implementation of project-based learning which provides an opportunity for students to experience self-directed learning including Maulany (2013), Dewi (2018), Permatasari (2013), Ichsan et.al (2017), Zare-Behtash and Sarlak (2017), Abubakar (2015), Bolsunovskaya et al (2015), and Noom-ura (2013). Besides the advantages mentioned above, project-based learning can be implemented in self-study activities, which is especially important in view of the reduced number of academic hours assigned for foreign language for specific purposes in accordance with the academic program. Even though those studies highlighted the use of PBL in speaking skill and ESP, this present study differs from those previous researches as this study used infographic as the final project to be published in students' social media account. Infographic was chosen as the media for students to construct the content of their presentations because it gave chance for students to plan the structure of their presentations better as well as express their creativity. Infographic was also hoped to enhance students' motivation to work on project under serious topic, i.e., Proposing Green Energy Power Plant in Indonesia.

Method

This experimental research employed quantitative design to analyze the impact of PBL on students' speaking achievement. The data was taken from pre- test and post-test of students' presentation before and after the implementation of PBL in the learning process. Nineteen fourth semester students majoring in Informatics Management of Electrical Engineering Department took part as subjects of this research. Quantitative data was addressed as the core and providedthe main analysis of data collection and was the extent by which project-based learning affects students' speaking achievement. According to Creswell and Clark (2006:60), the quantitative data collection involves several steps: (i) Administration of a pre-test measuring the dependent variable (speaking skill) based on speaking rubric (ii) Application of the experimental treatment to the subjects, (iii) Administration of a post-test measuring the dependent variable (speaking skill) based on speaking rubric. This study applied the SPSS (Statistical Package for Social Sciences) statistics 21 to analyze the quantitative data. Paired samples statistics were used to determine the mean score in the pre-test and post- test in order to see if there was an improvement in students' achievement. Meanwhile, paired samples correlations were used to obtain the correlation

coefficient (R). This analysis was used to analyze the relationship between before and after project-based learning is implemented in the learning process. A hypothesis in the process of analyzing data using SPSS was formulated, i.e., H0 means there was no significant impact of PBL on students' achievement during the implementation while H1 means there was a significant impact of PBL in improving students' speaking competence. The analysis was made based on the comparison of tcount and ttable and probability value. If $t_{count} < t_{table}$ or $-t_{count} > -t_{table}$ then H0 was accepted, if $t_{count} > t_{table}$ or $-t_{count} < -t_{table}$ then H0 was rejected. The level of significance was determined using level of confidence 95% or levelof error 5% ($\alpha = 0.05$). If sig. value (α) < 0.05 then H0 was rejected and if sig. value (α) > 0.05 then H0 was accepted. In addition to data on students' scores, this study also analyzed data collected using the online questionnaire, i.e., google form administered to 19 students who were undertaking the course. The questionnaire was answered by students after uploading the final products into their instagram accounts. The questionnaire was designed in scale type (1-4) ranging from strongly disagree to strongly agree covering 35 questions to get quantitative datain the form of numbers and percentage.

Findings and Discussion

This section elaborates the findings in this study and its elaboration compared to previous studies. Participants in this research major in Electrical Engineering and they worked on the project for five meetings. In the pre-test, students did individual presentation without the intervention of PBL. In the phase of project based learning, students had several stages including topic agreement, group discussion, presentation with peer review and lecturer's evaluation, final presentation, and infographic publication. Pre-test and post-test were conducted toanalyze the effect of project-based learning on students' speaking achievement. The test was in the form of instruction in which the students were required to deliver a presentation based on the topic provided. The pre-test was administered to obtain preliminary data at the beginning of the study before the treatment was conducted. Students worked on the topic "Type of Green Energies". Then, post- test with topic "Proposing Green Energy in Indonesia" was carried out to investigate the effect of project-based learning on students' scores. Once the students finished in publishing their final product and got feedback, students were required to fill in an online questionnaire to gather perspectives on stages they had during project-based learning implementation.

In the following sections, effects of PBL on students' speaking achievement in three classes are elaborated quantitatively based on the result of SPSS Statistics 21.

The Effect PBL on Students' Speaking Achievement

The output of data processing using paired sample statistics showed that the mean score of students' pre-test is 79.21 while the mean score of students' speaking after the implementation of project-based learning was 86.00.

Table 1. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_Test	79.21	19	5.663	1.299
	Post_Test	86.00	19	4.163	.955

The finding shows that students gained a higher mean score after being taught using PBL. In addition, the pre-test and post-test scores were analyzed using paired sample correlations. The analysis was used to determine the degree of relationship between before and after project-based learning was implemented in the classroom.

Table 2. Paired Samples Correlations

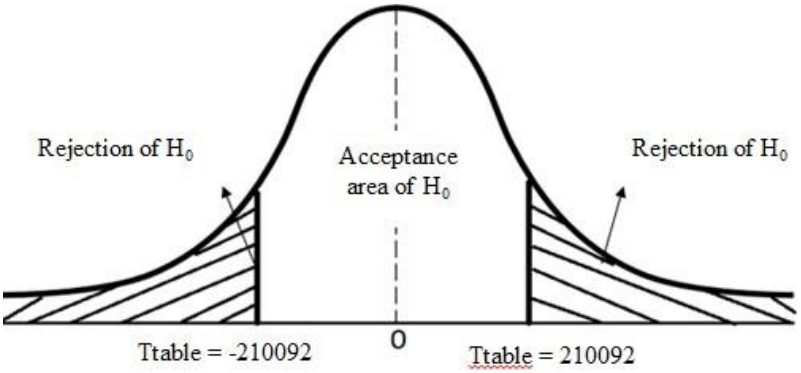
		N	Correlation	Sig.
Pair 1	Pre_Test & Post_Test	19	.575	.010

The result of the analysis shows that the correlation coefficient (r) = 0,575. Based on the interpretation scale of correlation coefficient by Guilford (1965), the correlation coefficient (r) = 0,575 is between the range of 0,401-0,700 which means that the correlation is strong. This indicates that there was a strong or positive relationship of PBL on students' achievement as displayed in the result ofpaired t-test in Table 3 below.

Table 3. Paired Samples Test

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
-6.789	4.721	1.083	-9.065	-4.514	-6.269	18	.000

In examining the effectiveness of PBL in enhancing students' speaking achievement, the researchers compared the pre-test and post-test scores earned by the students. This was done in order to determine a significant difference between them if any. The t-test analysis revealed that tvalue was at -6.269 with (df) or the degree of freedom (n-k) = 19 – 1 = 18 and the probability value or significant value (2-tailed) at 000. Since the p-value (2-tailed) was lower than 0,05, it pointed to a significant difference between the pre-test and the post-test results. Test on both sides was done to determine the t-table value in which each side having a value of = = 0,025. The value of ttable (0,025,18) was ± 2,10092. The hypothesis test area can be seen in the following picture.



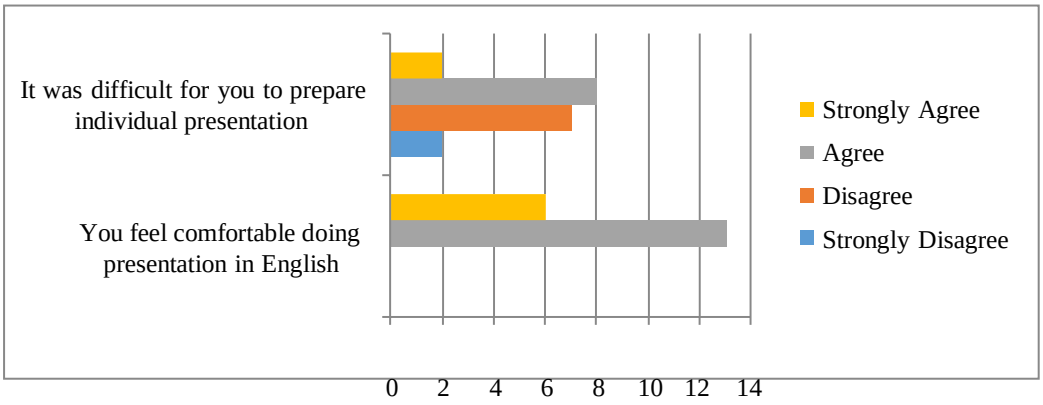
Picture 1. Two Tailed Hypothesis Test

Based on the result of analysis using SPSS statistics 21 with 95% level of confidence, it was revealed that $-t_{count} < -t_{table}$ -6.269 < -2,10092) and the significance value (p_{value}) of 2-tailed was less than 0,05 (0,000 < 0,05). It can be concluded that H1 was accepted and H0 was rejected signifying that there was a significant effect of PBL implementation in improving students' speaking achievement. This indicates that there was a significant impact on students' scores after PBL implementation compared to conventional lecture type approach.

According to the result of data analysis described previously, it was discovered that project-based learning implemented during the teaching and learning process affected significantly towards the speaking competency of the second-semester students of Informatics Management in three different classes. Based on the result of analysis using SPSS statistics 21 with 95% level of confidence, it was revealed that $-t_{count} < -t_{table}$ (-6.269 < -2,10092). In addition, it was proven by the probability value of 0.00, which was lower than 0.05. It meant that there was a significant difference in speaking competency before and after being taught with PBL. In the pre-test, students were being taught using the conventional method in which speaking was performed as an individual task without a series of completion stages. Meanwhile, the post-test was carried out in the form of the project with a detailed series of phases involving group discussion, peer-review and product publication.

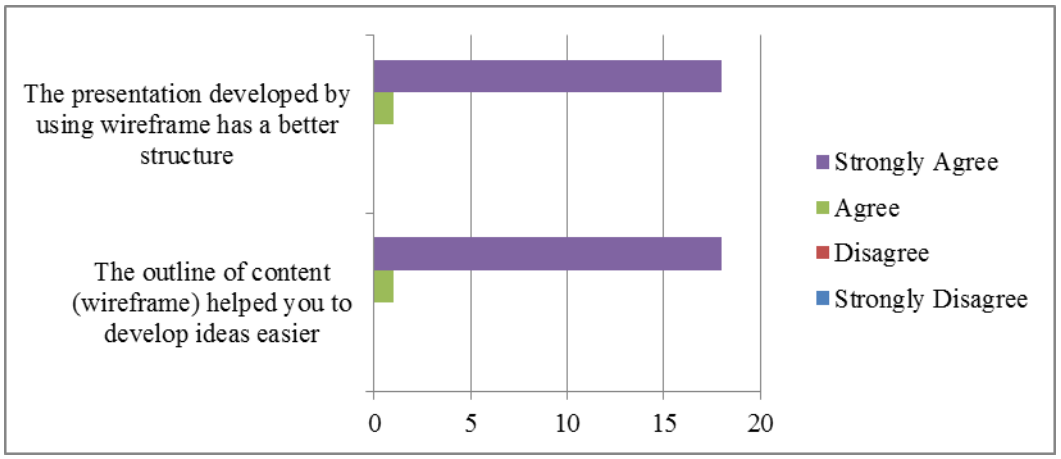
Students' Perception on Speaking Skill and Project Based Learning with Infographic

This section elaborates students' perceptions on speaking activities in general, the impacts of group discussion to the quality of their presentations, how working on infographics affects their speaking performance and students' perception on project based learning in general. Picture 2 below illustrates students' perception on practicing their speaking skill in presentation.



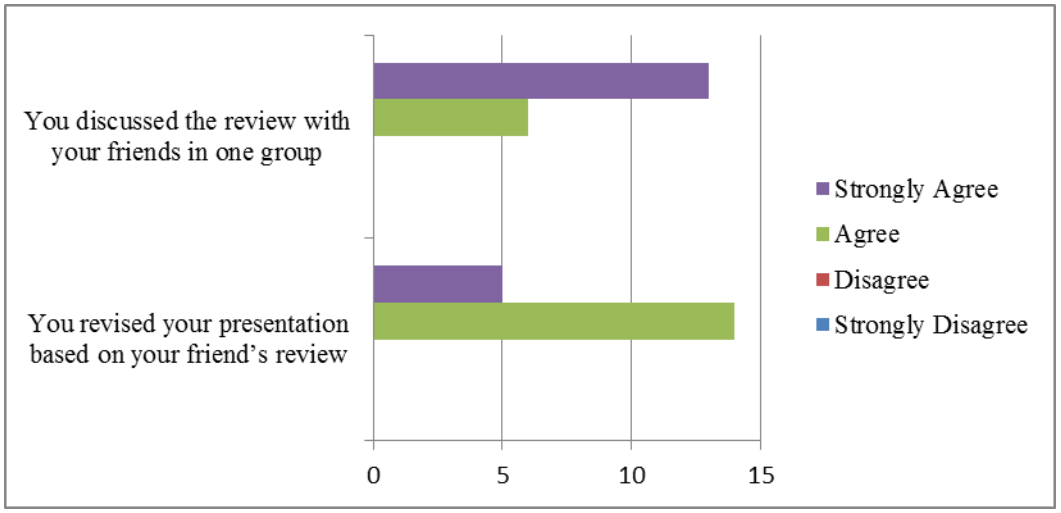
Picture 2. Google Form Responses (i)

Responses in Picture 2 show that more than half of the population (13 students or 68.4%) showed a positive attitude by stating agreement on the statement that they enjoyed delivering presentation in English while the rest of thepopulation (6 students or 31.6%). Students gave various responses to the statement on difficulty of preparing individual presentation. Even though 8 students (41.1%) agreed that it was difficult for them to prepare presentation individually, a slight different number of students (7 students or 36.8%) gave different responses stating that preparing individual presentation was not difficult for them.



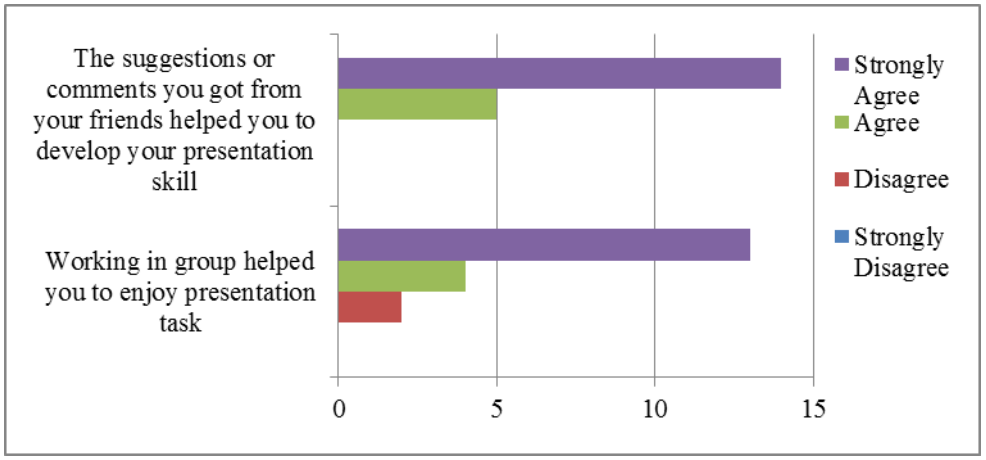
Picture 3. Google Form Responses (ii)

Regarding the use of constructing the outline of content or wireframe as seen in Table 5, all students gave positive feedback. Among 19 students, 18 students (94.7%) strongly agreed that it helped them to develop ideas easier and 1 student supported the statement positively by choosing the scale of agreeing. Furthermore, the questionnaire responses also showed the same number of percentage on the statement about whether the presentation developed by using wireframe has a better structure.



Picture 4. Google Form Responses (iii)

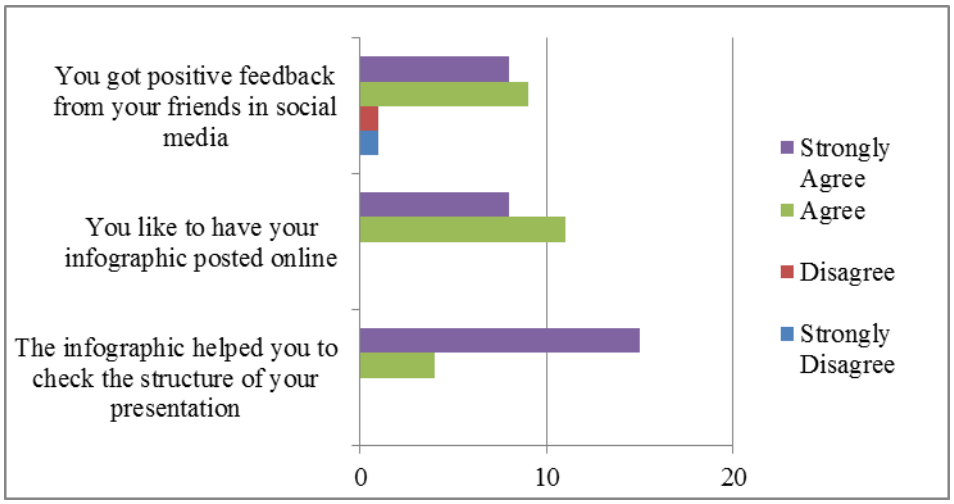
When students were working in groups, they were assigned to review the presentation of their peer in one group. This process was conducted in order to help them revise the quality of both their content and delivery. Referring to the result of the questionnaire as seen in the above diagram, students gave positive responses by choosing scale 3 (agree) or 4 (strongly agree) on the statement about the group work process. A majority of students (14 out of 19 students or 73.7%) mentioned that they revised their presentation based on the result of review given by their friends. In addition, 13 students or 68.4% strongly agreed on the statement that they discussed the review with their group members.



Picture 5. Google Form Responses (iv)

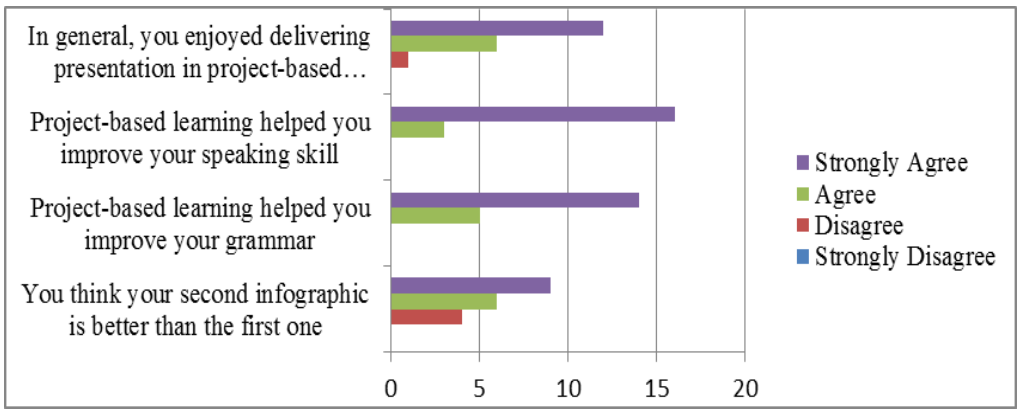
Working in groups gives advantages to their improvement in doing presentation. 13 students or 68.4% strongly agreed that the group work helped them to enjoy presentation task, while the rest of the students, chose the scale 3 and 2 in responding to this statement. Besides that, all students gave positive point of view regarding to the statement about whether the suggestions of comments

they got from their friends helped them to develop their presentation skill. A big number of students (14 students or 73.7%) chose scale 4 or strongly agree while the rest (5 students or 26.3%) chose scale 3.



Picture 6. Google Form Responses (v)

Recently, infographic has been widely used in educational setting and classroom activities particularly in project based learning. Designing infographic as part of the speaking project was a new thing for students participating in this study. However, most of them gave good responses to the impact of infographic to their learning. The majority of students (15 students or 78.9%) agreed that the infographic helped them to check the structure of their presentation. They also liked to have their infographic posted online in their instagram account (11 students chose 'agree' and 8 students chose 'strongly agree'). Even though they mentioned that they did like to have their infographic published in social media, apparently not all students got positive feedback because there were one student chose scale 1 and 2 respectively while the rest chose scale 3 and 4.



Picture 7. Google Form Responses (vi)

After completing their post-test infographic with project-based learning, students gave a variety of responses when comparing the quality of their first

infographic prior to PBL to the second infographic with PBL. As seen in Picture 7, out of 19 populations, 15 respondents (9 students and 6 students) provided positive feedback by choosing scale 4 and 3 respectively. However, 4 students disagreed with the statement meaning that they did not think their second infographics were better than the first one.

Referring to the responses on the impact of project-based learning, most respondents (14 students or 73.7%) strongly agreed that PBL helped improve their grammar while the rest of population chose to agree (5 students or 26.3%) on the same statement. In addition, students also gave positive responses on the statement about whether project-based learning helped them improve their speaking skill. A big number of respondents (16 students or 84.2%) strongly agreed while other students (3 students or 15.8%) chose scale 3. In general, most students (3 students or 63.2%) chose scale 4 while responding to the statement of whether they enjoyed delivering presentation in PBL. The rest of students, chose scale 3 (6 students or 31.6%) and only 1 student gave negative feedback by choosing scale 2 or disagreed to the statement given.

In spite of the difference in the type of final products and platform used in publishing the final products, the result of data analysis in this study is similar to the findings reported by earlier EFL researchers in Indonesia. Astawa, Artini and Nitiasih (2017) reported the significant effect of students' productive skills before and after being taught by using PBL. In addition, PBL enhanced students learning quality in term of enthusiasm, confidence, creativity, self-directed and collaborative learning ability, while from the teacher's part, PBL promoted teacher's motivation and satisfaction in teaching.

Referring to the statistical analysis on students pre-test and post-test, a research conducted by Dewi (2018) also showed similar result in which the researcher has concluded that the application of the PBL technique could improve the students' speaking achievement. Furthermore, the number of students highly active in the teaching-learning activities increased gradually from the first cycle tothe second cycle. As for the result of the students' responses toward PBL technique, the students had positive responses in their speaking class. Based on their responses, this technique could make the students more motivated, happy, and confident to speak English.

Participants in this present study also expressed positive feedback on the impact of having group discussion before they deliver individual presentation. This is in line with the findings in Permatasari (2013) which revealed that group discussions helped students to improve their speaking skill because the discussions encouraged them to interact with their friends in small groups before they began to speak in a big group. Students with low performance in speaking could improve their skill through project-based learning that was proven by the increase in students' class participation because PBL gave them a a chance to to interact in small and big groups. Then, the score of students' performance also increased because the students had prepared in a small group before they performed in a big group. Lastly, the score of students' project also increased because they cooperated well in a group.

Improvement in students' scores in this present study also supported by the findings of research by Ichsan, et.al (2017) showed that there was an improvement on students' speaking skill through project-based learning particularly in accuracy and fluency. The responses in google form acknowledged students' agreement that PBL assisted them to improve their grammar skills. It can be concluded that the students' speaking skill taught using project-based learning was improved. Furthermore, Ichsan, et.al (2017) highlighted that students' improvement in speaking skill was also proved by the list of difficult words, mispronunce words, and grammatical errors in each cycle. It showed that the problem of pronunciation and grammar were reduced in each cycle. The teaching learning process was also improved by applying project-based learning in teaching learning speaking.

Group work especially peer review has proved to be one of media that helped students to enhance both their speaking skill dan presentation content. Zare-Behtash dan Sarlak (2017) mentioned that PBL reinforced students to be more active when PBL provide students with group work. Moreover, self-assessment and peer-assessment are available in PBL. Thus, students correct their own mistake in a friendly environment. PBL permits learners knowledge activation through group work activities. These kinds of activities increase students' opportunities to interact in real life situation and in a very friendly environment.In addition, group work activities provide learners feedback which causes self- evaluating. Abubakar (2015) further emphasized through performance, the students are enabled to be actively involved in presenting and giving feedback which are acquired from small and big group discussion. Through the project, the students could interact with their friends in small group before the students spoke in a big group to enhance their speaking ability.

According to the major finding in this present study supported by the results from previous researches, it is clear that the implementation of PBL has proved to be an effective teaching method in improving students' speaking competence compared to the conventional method. Project-based teaching is one such breakthrough technology, as it allows students to generate their own ideas and to integrate knowledge obtained through different disciplines to solve hands-on tasks. Previous researchers including Praba, et.al Artini and Ramendra (2018:6) and Sukerti and Yuliantini (2018:7) claimed positive effects on both learners and teachers in terms of motivation, content learning, practical skills and learning autonomy. Project-based learning offers a solution to overcome the need to teach English and to put students in a situation where their soft skills are being improved along the process of learning new competence. Learners decide how to approach a problem and what activities to pursue. They gather information from a variety of sources and synthesize, analyze, and derive knowledge from it. Their learning is inherently valuable because it's connected to something real and involves adult skills such as collaboration and reflection. In the end, students demonstrate their newly acquired knowledge and are judged by how much they'velearned and how well they communicate it.

Conclusion

Based on the discussion and finding, it can be concluded that project-based learning can be one of effective ways in teaching ESP course. The result of this study stresses on the positive impact of project-based learning on students' speaking achievement. The quantitative analysis using SPSS statistics 21 revealed a significant difference in students' speaking achievement before and after PBL was implemented. Students' mean scores improved after the intervention. In other words, the speaking competency of the students' taught with PBL was higher than those taught with the conventional method. So, it can be concluded that PBL give more benefits compared to the conventional method on students' speaking competency. It can help them gain not only experiences in their selected areas but also better language skills and other soft skills. In addition, being able to select the topic based on their interests, PBL is able to engage students in the course since students devote much time and efforts to complete their favorite projects, which further leads to more understanding of the subject and improvement in English language. Referring to these findings, it is recommended that PBL should become a choice of strategy for teaching English in higher vocational education, especially in the context of teaching a productive skill such as speaking as it can also enhance soft skills required by the workplace.

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